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2. What is a barcode?

A barcode is a machine-readable representation of information in a visual format on a surface. Barcodes can be read by optical scanners, allowing quick and easy identification of all kind of goods.

Originally barcodes stored data in the widths and spacings of printed parallel lines, but today they also come in patterns of dots, concentric circles, and hidden in images.

The information contained in a barcode varies from numbers to complete ASCII texts. The drive to encode ever more information in combination with the space requirements of simple barcodes led to the development of matrix barcodes or 2D barcode, which do not consist of bars but rather a grid of square cells.

Barcodes are just the visible part of often quite large systems frequently referred to as automated identification systems. These systems are increasingly proving to be some of the most cost-effective management tools, since they enable organizations to keep track of their goods and stocks in all kinds of situations in a fast, accurate and efficient way.

With the Dynamic Barcodes plug-in, you can add a dynamic barcode to your document without leaving your application. Dynamic means that your barcode settings can be changed later on, even after you saved, closed and reopened your document.
3. Getting Started with Dynamic Barcodes

To introduce you to Dynamic Barcodes, here is how to make your first barcode in four simple steps.

1. Create a CMYK Illustrator document and go to Windows > Esko > Dynamic Barcodes.
   This opens the Dynamic Barcodes dialog.

2. Define the color of the barcode: in your Illustrator color palette, define a single-color fill style and no stroke.

3. Enter the barcode parameters (Barcode Type, numeric Code...) in the Dynamic Barcodes dialog.
   For example, for an EAN 13 barcode, select EAN 13 as Barcode Type and enter a 13 digit Code.

4. Click the Create button and Dynamic Barcodes will generate the barcode in your document.
Dynamic Barcodes

Barcode Type: EAN 13
Rotation: 0°
Codes: 1488746874646

Additional parameters
4. Using Dynamic Barcodes in Unlicensed Mode

If you don’t have a license for the Dynamic Barcodes plug-in, you still use it in unlicensed mode to perform limited operations. You can:

- Open documents containing barcodes created by Dynamic Barcodes without warning messages.
- Create barcode placeholders (with no data in them) in your design.

See *Creating a Barcode Placeholder Quickly* on page 14.

You can also use the regular Illustrator functions to:

- change the barcode’s position in your document,
- rotate it by multiples of 90 degrees (using `Object > Transform > Rotate`).

**Tip:** You can rotate several barcodes at once.

- change its fill color (it is not possible to apply a stroke),

**Attention:**

Choose a fill color that is:

- a process or a spot color (other colors might generate trapping problems),
- not too light (or the barcode might be difficult to scan).

- copy and paste it.
- delete it.
5. Dynamic Barcodes Basics

5.1 Creating a Barcode

1. Create a CMYK Illustrator document and go to Windows > Esko > Dynamic Barcodes.
   You can also use the Command + Option + 4 shortcut on Mac, or the CTRL + Alt + 4 shortcut on PC.
   This opens the Dynamic Barcodes dialog.

2. Define the color of the barcode: in your Illustrator color palette, define a single-color fill style and no stroke.
   Dynamic Barcodes creates bars by generating rectangular objects and assigning the current fill style to them.

Attention:
Choose a fill color that is:
- a process or a spot color (other colors might generate trapping problems),
- not too light (or the barcode might be difficult to scan).
3. In the **Dynamic Barcodes** dialog, select your **Barcode Type**.

4. Enter a **Rotation** angle for your barcode, or use one of the rotation buttons. Choose the **Orientation** of your barcode using one of the buttons or by entering an angle.

5. Enter the barcode’s data in the **Code** field. For most barcodes, you can choose to also show this data as a (human-readable) number.

   **Attention:** Make sure the barcode data you enter is valid for the barcode type you chose. If it isn’t, a warning / error will pop up.

6. To fill in other parameters specific to the barcode type you chose, open the **Additional parameters** section and see **Barcode Parameters** on page 29.
7. Click the Create button.

- If you have the boostX plug-in installed, Dynamic Barcodes generates your barcode at the intersection of the boostX crosshair.
- If you don’t have the boostX plug-in installed, Dynamic Barcodes generates your barcode in the center of the view.
5.2 Editing a Barcode

With Dynamic Barcodes, you can also edit existing barcodes.

1. Open the Dynamic Barcodes.
2. Select the barcode to edit in your Illustrator document.
3. Change its parameters as you wish in the Dynamic Barcodes dialog.

**Note:**

If you change the Barcode Type and the previous Code is not valid for this barcode type, Dynamic Barcodes will reset it to the (first) default code for this barcode type.

This is the default code used for placeholder barcodes; you can see it in the preset barcodes dialog (see Previewing and Creating a Barcode Placeholder on page 15).

You can then either:

- enter your own valid code,
- use this default code to create a placeholder barcode (see Creating a Barcode Placeholder Quickly on page 14).

4. Click the Apply button to apply your changes to the barcode.

5.3 Setting Barcode Parameters to Default

- To reset all the parameters of the selected barcode to default, click the palette menu in the top right corner of the Dynamic Barcodes dialog then click Set Default Parameters.
5.4 Barcode Placeholders

If you don’t have the exact data to encode in your barcode yet, you can already create a barcode placeholder in your design.

This placeholder will have the correct symbol type for the barcode type you choose, but will only contain “empty” or “default” data (for example 0000000000000 for EAN 13).

5.4.1 Creating a Barcode Placeholder Quickly

1. Open the Dynamic Barcodes dialog from Windows > Esko > Dynamic Barcodes.
2. Define the color of the barcode: in your Illustrator color palette, define a single-color fill style and no stroke.

Attention:

Choose a fill color that is:

- a process or a spot color (other colors might generate trapping problems),
- not too light (or the barcode might be difficult to scan).

3. In the Dynamic Barcodes dialog, select your Barcode Type.

The Code field is automatically filled out with a null / default value that has the correct number of digits for your Barcode Type (for example 0000000000000 for EAN 13).
4. Click the Create button to create your barcode placeholder.

![Barcode placeholder image]

**Note:** You can also create a barcode placeholder in unlicensed mode (see *Using Dynamic Barcodes in Unlicensed Mode* on page 9).

### 5.4.2 Previewing and Creating a Barcode Placeholder

You can use Dynamic Barcodes to preview different barcode types before creating your barcode placeholder.

1. Open the Dynamic Barcodes dialog from Window > Esko > Dynamic Barcodes.
2. Define the color of the barcode: in your Illustrator color palette, define a single-color fill style and no stroke.
Attention:
Choose a fill color that is:
• a process or a spot color (other colors might generate trapping problems),
• not too light (or the barcode might be difficult to scan).

3. In the Dynamic Barcodes dialog, click the Pre-set barcodes icon.
   This opens the Select Barcode dialog.

4. Select your Barcode Type on the right to see a Preview of it on the left.
   
   **Note:** This shows previews of barcode placeholders. Your actual barcode (with data and specific parameters affecting its size) may look slightly different. For more information on barcode parameters, see **Barcode Parameters** on page 29.

5. If your barcode data can have several possible lengths (for example EAN 13 can have 13, 15 or 18 digits), choose the length you want to preview in Code Preset.

6. If your barcode can have a Composite Component (some GS1 barcodes), you can choose to preview it with or without that component.
7. Click **OK** to use the preview parameters (**Barcode Type**, **Code Preset** and **Composite Component** as applicable) in the Dynamic Barcodes dialog and close the Select Barcode dialog.

8. In the Dynamic Barcodes dialog, click the **Create** button to create your barcode placeholder.

![Dynamic Barcodes dialog](image.png)
6. Dynamic Barcodes Advanced

6.1 Choosing a Font Standard

You can choose between two font standards for the human-readable characters of your barcodes.

1. Go to Illustrator > Preferences > Esko > Dynamic Barcodes Preferences... to open the Dynamic Barcodes Preferences dialog.

2. Choose either OCR-B Standard or OCR-B Bitstream and click OK.

<table>
<thead>
<tr>
<th>OCR-B Standard fonts are rounder and typically used in the Western market.</th>
<th>![OCR-B Standard example]</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCR-B Bitstream fonts are typically used in the Asian market.</td>
<td>![OCR-B Bitstream example]</td>
</tr>
</tbody>
</table>

Note: If the OCR-B Bitstream font is not installed on your system, the option will be disabled. Esko does not provide this font.

6.2 Using Dynamic Content with Dynamic Barcodes

You can use the Dynamic Content plug-in to turn barcodes created with Dynamic Barcodes into XML-driven objects. These barcodes update automatically when the XML files to which they are linked change.

For more information, see the Dynamic Content documentation.
6.3 Barcode Protection

Once you create a barcode with Dynamic Barcodes, this barcode is protected. This means that it won’t be possible to edit it with most regular Illustrator tools. This protects the barcode against modifications that might render it invalid, for example distorting it or modifying its size.

You can still edit the barcode's parameters at any time through the Dynamic Barcodes dialog.

6.3.1 Protecting a Barcode

You can protect a Dynamic Barcodes barcode that has been unprotected, or a barcode made in a previous version of Dynamic Barcodes.

1. Open the Dynamic Barcodes plug-in.
2. Select the barcode to protect in your Illustrator document.
3. If necessary, change its parameters in the Dynamic Barcodes dialog.
4. Click the Apply button to apply the parameter changes and protect your barcode.

Tip: You can use this to fix some invalid barcodes.

6.3.2 Handling a Barcode without Dynamic Barcodes

Opening a Document Containing a Dynamic Barcodes Barcode without Dynamic Barcodes

When opening a document containing a Dynamic Barcodes barcode in an Illustrator application that doesn’t have the Dynamic Barcodes plug-in, you will get the following warning:

This doesn't create any problem in your file, and you can continue to work with this file as you normally would, without editing the Dynamic Barcodes barcode.
If you need to edit the Dynamic Barcodes barcode with your Illustrator application, see *Editing a Document Containing a Dynamic Barcodes Barcode without Dynamic Barcodes* on page 20.

**Editing a Document Containing a Dynamic Barcodes Barcode without Dynamic Barcodes**

If you don’t have the Dynamic Barcodes plug-in, you can still use Illustrator to do the following operations without rendering your barcode invalid.

If you don’t have Dynamic Barcodes installed, you will **not** be able to:

- move or scale the object using the Selection tool
- move or distort it (reflect, shear or scale)
- change a color

You will be able to:

- expand the bar code
- Rotate by Selection or Free transform - this can lead to inconsistent results so we recommend not doing this.
- move, rotate and distort by the Transform Each command - this can lead to inconsistent results so we recommend not doing this.
- enclose it in the Envelope and distort
- delete it
- copy and paste it

If the Dynamic Barcode plugin is installed, but without a valid license, you will be able to do everything that is allowed by the plugin, except modifying the content. This means for example moving and rotating is allowed, but due to the bar code protection, any potentially dangerous operations such as scale, reflect or shear are not allowed. You will also be able to change the color of the bar code.

**Unprotecting a Dynamic Barcodes Barcode for Further Editing**

You can expand your Dynamic Barcodes barcode to a regular Illustrator group art to be able to edit it further, but this is not recommended as it will **remove the barcode’s protection**.

![Attention: It will then be possible to make modifications that might render the barcode invalid.](https://via.placeholder.com/150/000/000)

1. To do this, go to **Object > Expand...** in the Illustrator menu.
2. Choose the object’s characteristics to expand, then click **OK**.
This turns your barcode into a regular Illustrator object. You can now for example edit each bar of the barcode individually.

6.4 Exporting Documents with Barcodes

If you are using other Esko applications, you can export Illustrator documents containing barcodes to the Esko Normalized PDF format, preserving the barcodes’ information and editability.

6.4.1 Viewing Barcode Information in Other Esko Applications

1. Export your Illustrator document to the Esko Normalized PDF format:
   - If you have Automation Engine, use Shuttle to launch the document into your chosen workflow. This converts it to Normalized PDF automatically.
   - Note: See the Adobe Illustrator Client documentation for setup information.
   - If you don’t have Automation Engine, use File > Export and choose Normalized PDF as the export format.

2. Select (in Automation Engine) or open (in PackEdge / Acrobat) your document and open the XMP information as explained below:

<table>
<thead>
<tr>
<th>If you have...</th>
<th>go to...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation Engine</td>
<td>File &gt; Info</td>
</tr>
<tr>
<td>PackEdge</td>
<td>File &gt; XMP Info</td>
</tr>
<tr>
<td>the Esko XMP plug-in in Adobe Acrobat</td>
<td>Esko &gt; XMP Document Info...</td>
</tr>
</tbody>
</table>

3. Click Barcodes in the Data type column (as below in PackEdge) to show the barcode information.
For more information, see the Shuttle, Automation Engine, PackEdge or XMP plug-in documentation.

6.4.2 Editing Barcodes in Other Esko Applications

The Dynamic Barcodes functionality is available both as a DeskPack plug-in and in PackEdge.

- To edit your document containing barcodes in PackEdge:
  a) Export your Illustrator document to the Esko Normalized PDF format:
     - If you have Automation Engine, use Shuttle to launch the document into your chosen workflow. This converts it to Normalized PDF automatically.
     
     **Note:** See the Adobe Illustrator Client documentation for setup information.

     - If you don’t have Automation Engine, use File > Export and choose Normalized PDF as the export format.
  b) Open your document in PackEdge.
  c) Go to Production > Bar Code... to edit your barcode as you would edit it with Dynamic Barcodes.

For more information, see the Shuttle and PackEdge documentation.
7. Barcode Types and Parameters

7.1 Supported Barcode Types

**General Purpose Barcodes**

<table>
<thead>
<tr>
<th>1D</th>
<th>2D</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Code 39</td>
<td></td>
</tr>
<tr>
<td>• 2 of 5</td>
<td></td>
</tr>
<tr>
<td>• Interleaved 2 of 5</td>
<td></td>
</tr>
<tr>
<td>• Codabar</td>
<td></td>
</tr>
<tr>
<td>• Code 128</td>
<td></td>
</tr>
<tr>
<td>• Code 128 (long)</td>
<td></td>
</tr>
<tr>
<td>• MSI</td>
<td></td>
</tr>
<tr>
<td>• DataMatrix</td>
<td></td>
</tr>
<tr>
<td>• QR</td>
<td></td>
</tr>
<tr>
<td>• MicroQR</td>
<td></td>
</tr>
</tbody>
</table>

**Retail Barcodes**

<table>
<thead>
<tr>
<th>1D</th>
<th>2D</th>
</tr>
</thead>
<tbody>
<tr>
<td>• EAN 13</td>
<td></td>
</tr>
<tr>
<td>• EAN 8</td>
<td></td>
</tr>
<tr>
<td>• UPC-A</td>
<td></td>
</tr>
<tr>
<td>• UPC-E</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Omnidirectional</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Truncated</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Stacked</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Stacked Omnidirectional</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Limited</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Expanded</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataBar Expanded Stacked</td>
<td></td>
</tr>
<tr>
<td>• GS1 128</td>
<td></td>
</tr>
<tr>
<td>• GS1 U.S. Coupon Interim</td>
<td></td>
</tr>
<tr>
<td>• M+S 7</td>
<td></td>
</tr>
<tr>
<td>• Marks &amp; Spencer</td>
<td></td>
</tr>
<tr>
<td>• GS1 DataMatrix</td>
<td></td>
</tr>
</tbody>
</table>

**Pharmaceutical, Healthcare and Cosmetic Barcodes**

<table>
<thead>
<tr>
<th>1D</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NDC / HRI</td>
</tr>
<tr>
<td>• Laetus Pharma Code</td>
</tr>
<tr>
<td>• CLF-8</td>
</tr>
</tbody>
</table>
### 1D
- HIBC 39
- HIBC 128
- Paraf Italy
- PZN
- PZN8

### Shipment Container Barcodes
1D
- ITF-14
- ITF-16
- UPC-SCS

### Identity Document Barcode
2D
- PDF417
- MicroPDF417

### 7.1.1 GS1 Application Identifiers
These are the GS1 Application Identifiers available in Dynamic Barcodes:

<table>
<thead>
<tr>
<th>AI</th>
<th>Data Content</th>
<th>FNC1 Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>SSCC (Serial Shipping Container Code)</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Global Trade Item Number (GTIN)</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>GTIN of Contained Trade Items</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Batch or Lot Number</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>11</td>
<td>Production Date (YYMMDD)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Due Date (YYMMDD)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Packaging Date (YYMMDD)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Best Before Date (YYMMDD)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Expiration Date (YYMMDD)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Variant Number</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Serial Number</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>22</td>
<td>Secondary Data Fields</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>240</td>
<td>Additional Item Identification</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>241</td>
<td>Customer Part Number</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>242</td>
<td>Made-to-Order Variation</td>
<td>(FNC1)</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>243</td>
<td>Packaging Component Number (FNC1)</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>Secondary Serial Number (FNC1)</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>Reference to Source Entity (FNC1)</td>
<td></td>
</tr>
<tr>
<td>253</td>
<td>Global Document Type Identifier (FNC1) (GDTI)</td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>GLN Extension Component (FNC1)</td>
<td></td>
</tr>
<tr>
<td>255</td>
<td>Global Coupon Number (GCN) (FNC1)</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Count of Items (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>(*) Net weight, kilograms (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>311</td>
<td>(*) Length or first dimension, metres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>312</td>
<td>(*) Width, diameter, or second dimension, metres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>313</td>
<td>(*) Depth, thickness, height, or third dimension, metres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>314</td>
<td>(*) Area, square metres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>(*) Net volume, litres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>(*) Net volume, cubic metres (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>(*) Net weight, pounds (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>321</td>
<td>(*) Length or first dimension, inches (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>322</td>
<td>(*) Length or first dimension, feet (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>323</td>
<td>(*) Length or first dimension, yards (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>324</td>
<td>(*) Width, diameter, or second dimension, inches (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>(*) Width, diameter, or second dimension, feet (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>326</td>
<td>(*) Width, diameter, or second dimension, yards (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>327</td>
<td>(*) Depth, thickness, height, or third dimension, inches (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>Depth, thickness, height, or third dimension, feet (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>329</td>
<td>Depth, thickness, height, or third dimension, yards (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>330</td>
<td>Logistic weight, kilograms</td>
<td></td>
</tr>
<tr>
<td>331</td>
<td>Length or first dimension, metres</td>
<td></td>
</tr>
<tr>
<td>332</td>
<td>Width, diameter, or second dimension, metres</td>
<td></td>
</tr>
<tr>
<td>333</td>
<td>Depth, thickness, height, or third dimension, metres</td>
<td></td>
</tr>
<tr>
<td>334</td>
<td>Area, square metres</td>
<td></td>
</tr>
<tr>
<td>335</td>
<td>Logistic volume, litres</td>
<td></td>
</tr>
<tr>
<td>336</td>
<td>Logistic volume, cubic metres</td>
<td></td>
</tr>
<tr>
<td>337</td>
<td>Kilograms per square metre</td>
<td></td>
</tr>
<tr>
<td>338</td>
<td>Logistic weight, pounds</td>
<td></td>
</tr>
<tr>
<td>339</td>
<td>Length or first dimension, inches</td>
<td></td>
</tr>
<tr>
<td>340</td>
<td>Length or first dimension, feet</td>
<td></td>
</tr>
<tr>
<td>341</td>
<td>Length or first dimension, yards</td>
<td></td>
</tr>
<tr>
<td>342</td>
<td>Width, diameter, or second dimension, inches</td>
<td></td>
</tr>
<tr>
<td>343</td>
<td>Width, diameter, or second dimension, feet</td>
<td></td>
</tr>
<tr>
<td>344</td>
<td>Width, diameter, or second dimension, yard</td>
<td></td>
</tr>
<tr>
<td>345</td>
<td>Depth, thickness, height, or third dimension, inches</td>
<td></td>
</tr>
<tr>
<td>346</td>
<td>Depth, thickness, height, or third dimension, feet</td>
<td></td>
</tr>
<tr>
<td>347</td>
<td>Depth, thickness, height, or third dimension, yards</td>
<td></td>
</tr>
<tr>
<td>348</td>
<td>Area, square inches (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>349</td>
<td>Area, square feet (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>350</td>
<td>Area, square yards (Variable Measure Trade Item)</td>
<td></td>
</tr>
<tr>
<td>351</td>
<td>Area, square inches</td>
<td></td>
</tr>
<tr>
<td>352</td>
<td>Area, square feet</td>
<td></td>
</tr>
<tr>
<td>353</td>
<td>Area, square yards</td>
<td></td>
</tr>
<tr>
<td>354</td>
<td>Net weight, troy ounces</td>
<td></td>
</tr>
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</table>

(Variable Measure Trade Item)
<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>357 (*)</td>
<td>Net weight (or volume), ounces (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>360 (*)</td>
<td>Net volume, quarts (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>361 (*)</td>
<td>Net volume, gallons U.S. (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>362 (*)</td>
<td>Logistic volume, quarts</td>
</tr>
<tr>
<td>363 (*)</td>
<td>Logistic volume, gallons U.S.</td>
</tr>
<tr>
<td>364 (*)</td>
<td>Net volume, cubic inches (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>365 (*)</td>
<td>Net volume, cubic feet (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>366 (*)</td>
<td>Net volume, cubic yards (Variable Measure Trade Item)</td>
</tr>
<tr>
<td>367 (*)</td>
<td>Logistic volume, cubic inches</td>
</tr>
<tr>
<td>368 (*)</td>
<td>Logistic volume, cubic feet</td>
</tr>
<tr>
<td>369 (*)</td>
<td>Logistic volume, cubic yards</td>
</tr>
<tr>
<td>37</td>
<td>Count of Trade Items (FNC1)</td>
</tr>
<tr>
<td>390 (*)</td>
<td>Applicable Amount Payable, local currency (FNC1)</td>
</tr>
<tr>
<td>391 (*)</td>
<td>Applicable Amount Payable with ISO Currency Code (FNC1)</td>
</tr>
<tr>
<td>392 (*)</td>
<td>Applicable Amount Payable, single monetary area (Variable Measure Trade Item) (FNC1)</td>
</tr>
<tr>
<td>393 (*)</td>
<td>Applicable Amount Payable with ISO Currency Code (Variable Measure Trade Item) (FNC1)</td>
</tr>
<tr>
<td>400</td>
<td>Customer’s Purchase Order Number (FNC1)</td>
</tr>
<tr>
<td>401</td>
<td>Global Identification Number for Consignment (GINC) (FNC1)</td>
</tr>
<tr>
<td>402</td>
<td>Global Shipment Identification Number (GSIN)</td>
</tr>
<tr>
<td>403</td>
<td>Routing Code (FNC1)</td>
</tr>
<tr>
<td>410</td>
<td>Ship to - Deliver to Global Location Number</td>
</tr>
<tr>
<td>411</td>
<td>Bill to - Invoice to Global Location Number</td>
</tr>
<tr>
<td>412</td>
<td>Purchased from Global Location Number</td>
</tr>
<tr>
<td>413</td>
<td>Ship for - Deliver for - Forward to Global Location Number</td>
</tr>
<tr>
<td>414</td>
<td>Identification of a Physical Location - Global Location Number</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>415</td>
<td>Global Location Number of the Invoicing Party</td>
</tr>
<tr>
<td>420</td>
<td>Ship to - Deliver to Postal Code Within a Single Postal Authority</td>
</tr>
<tr>
<td>421</td>
<td>Ship to - Deliver to Postal Code with ISO Country Code</td>
</tr>
<tr>
<td>422</td>
<td>Country of Origin of a Trade Item</td>
</tr>
<tr>
<td>423</td>
<td>Country of Initial Processing</td>
</tr>
<tr>
<td>424</td>
<td>Country of Processing</td>
</tr>
<tr>
<td>425</td>
<td>Country of Disassembly</td>
</tr>
<tr>
<td>426</td>
<td>Country of Processing Chain</td>
</tr>
<tr>
<td>427</td>
<td>Country Subdivision of Origin</td>
</tr>
<tr>
<td>7001</td>
<td>NATO Stock Number (NSN)</td>
</tr>
<tr>
<td>7002</td>
<td>UN/ECE Meat Carcasses and Cuts Classification</td>
</tr>
<tr>
<td>7003</td>
<td>Expiration Date and Time</td>
</tr>
<tr>
<td>7004</td>
<td>Active Potency</td>
</tr>
<tr>
<td>7003s</td>
<td>Approval Number of Processor with ISO Country Code</td>
</tr>
<tr>
<td>710</td>
<td>National Healthcare Reimbursement Number (NHRN) – Germany PZN</td>
</tr>
<tr>
<td>711</td>
<td>National Healthcare Reimbursement Number (NHRN) – France CIP</td>
</tr>
<tr>
<td>712</td>
<td>National Healthcare Reimbursement Number (NHRN) – Spain CN</td>
</tr>
<tr>
<td>8001</td>
<td>Roll Products (Width, Length, Core Diameter, Direction, Splices)</td>
</tr>
<tr>
<td>8002</td>
<td>Cellular Mobile Telephone Identifier</td>
</tr>
<tr>
<td>8003</td>
<td>Global Returnable Asset Identifier (GRAI)</td>
</tr>
<tr>
<td>8004</td>
<td>Global Individual Asset Identifier (GIAI)</td>
</tr>
<tr>
<td>8005</td>
<td>Price Per Unit of Measure</td>
</tr>
<tr>
<td>8006</td>
<td>Identification of the Components of a Trade Item</td>
</tr>
<tr>
<td>8007</td>
<td>International Bank Account Number (IBAN)</td>
</tr>
<tr>
<td>8008</td>
<td>Date and Time of Production</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8017</td>
<td>Global Service Relation Number (FNC1) to identify the relationship between an organisation offering services and the provider of services</td>
</tr>
<tr>
<td>8018</td>
<td>Global Service Relation Number (FNC1) to identify the relationship between an organisation offering services and the recipient of services</td>
</tr>
<tr>
<td>8019</td>
<td>Service Relation Instance Number (SRIN) (FNC1)</td>
</tr>
<tr>
<td>8020</td>
<td>Payment Slip Reference Number (FNC1)</td>
</tr>
<tr>
<td>8100</td>
<td>GS1-128 Coupon Extended Code (FNC1)</td>
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<tr>
<td>8101</td>
<td>GS1-128 Coupon Extended Code (FNC1)</td>
</tr>
<tr>
<td>8102</td>
<td>GS1-128 Coupon Extended Code (FNC1)</td>
</tr>
<tr>
<td>8110</td>
<td>Coupon Code Identification for Use in North America (FNC1)</td>
</tr>
<tr>
<td>8200</td>
<td>Extended Packaging URL (FNC1)</td>
</tr>
<tr>
<td>90</td>
<td>Information Mutually Agreed Between Trading Partners (FNC1)</td>
</tr>
<tr>
<td>91 to 99</td>
<td>Company Internal Information (FNC1)</td>
</tr>
</tbody>
</table>

*: the fourth digit of this GS1 Application Identifier indicates the implied decimal point position.

**: if only the year and month are available, DD must be filled with two zeroes

FNC1: All GS1 Application Identifiers indicated with (FNC1) are defined as of variable length and will be delimited unless this Element String is the last one to be encoded in the symbol. The delimiter shall be a [F1] Symbol Character in GS1-128, GS1 DataMatrix, GS1 DataBar Expanded Versions and GS1 Composite Symbology in the case the brackets around Application Identifiers are not used.

## 7.2 Barcode Parameters

### 7.2.1 2 of 5

**About this Barcode...**

2 of 5 is a numeric self-checking barcode, which can have a variable length. This barcode only encodes data in the bars. It is used for industrial applications, article numbering, photo development and ticketing.
Dynamic Barcodes

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Height
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

Characters per unit
This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumerics) characters.
You can choose the unit to use: micron, mil (millinches), mm or inch.

For example, choose mm and use 1 Character per unit in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.

Increase the Characters per unit value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 Character per unit, the bars needed to encode one character will take up 2 mm.

**Ratio**

The Ratio is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).
Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

Box

Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

### 7.2.2 CLF-8

**About this Barcode...**

The CLF-8 barcode is part of the same barcode family as the Laetus Pharma Code. It is used in the pharmaceutical industry.

---

**Parameters**

**Barcode Type**

To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn't, a warning / error will pop up.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

### Height

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

### Narrow Bar

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

### Ratio

The **Ratio** is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

### Wide Bar

This parameter determines the width of the widest bar of your barcode.

### Gap

Enter the width of the white space between the bars.

**Note:** The **Ratio** influences the **Gap** size: increasing the **Ratio** also increases the **Gap** size.

### Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

### Decimal Input

Use this parameter to change the type of data you can enter in the **Code** field.

- Disable it to enter the data to encode in binary format.
- Enable it to enter the data in decimal instead of binary format.
**Note:** When using binary format for the Laetus Pharma Code/CLF-8 barcode data, you need to use a special "Pharma" binary format.

To convert a decimal number into a Pharma binary number, do the following:

1. Add 1 to your decimal number.
2. Convert the result to a binary number using a regular binary conversion algorithm.
3. Remove the first digit (which is 1).

You now have your Pharma binary input for the Laetus Pharma Code/CLF-8 barcode.

For example, you want to encode the number 3.

1. 3+1=4
2. 4 in binary is 100.
3. Without the first digit, it's 00.

Enter 00 in the **Code** field of your Laetus Pharma Code/CLF-8 barcode.

**Box**

Use this parameter to create an opaque white box under your barcode.

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.3 Codabar

**About this Barcode...**

The Codabar barcode is commonly used in libraries, blood banks, and the air parcel business. It can encode up to 126 characters of data and two control characters, using digits and the “-”, “$”, “;”, “/” and “+” characters.

![Codabar barcode example]

**Parameters**

**Barcode Type**

To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

![Rotation buttons]

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Rational (Constant Bar Width)**

By enabling this option, you can create a "Rational" Codabar bar code.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.
You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (milliinches), mm or inch.

For example, choose mm and use 1 **Character per unit** in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.

Increase the **Characters per unit** value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 **Character per unit**, the bars needed to encode one character will take up 2 mm.
Dynamic Barcodes

Ratio

The Ratio is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

Narrow Bar

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

Box

Use this parameter to create an opaque white box under your barcode.
Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.4 Code 128

About this Barcode...

Code 128 is a variable length, high density, alphanumeric barcode. It has the second highest density of all the 1D barcodes (after the GS1 Databar Expanded).

It can contain a set of control characters. These control characters can change the character encoding type. In the absence of control characters, the encoding type is chosen automatically, to optimize the content encoding.

To force the usage of the code-set A, precede your data with the \[a\] control character. To force the usage of the code-set B, precede your data with the \[b\] control character. To obtain an optimal utilization of the code-sets A and B but prevent the usage of the space saving code-set C, use the Code 128 (long) barcode type instead.
Dynamic Barcodes

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode. Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01 mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Height
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.
Note:
In Dynamic Barcodes, you can create Code 128 barcodes shorter than the minimum height. Dynamic Barcodes will just display a warning, but if you export the document to EPF and open it in PackEdge, PackEdge will extend the barcode to its minimum required height.

Characters per unit
This parameter allows you to define your barcode's width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (millinches), mm or inch.

For example, choose mm and use 1 Character per unit in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.

Increase the Characters per unit value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 Character per unit, the bars needed to encode one character will take up 2 mm.
Narrow Bar

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Light Margin Indicator (< >)

This parameter adds “<“ and “>” signs (or only “>” depending on the barcode type) at the bottom of your barcode. This indicates the width the barcode should have for optimal reading.

Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:
Box
Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.5 Code 128 (long)

About this Barcode...
Code 128 (long) is a version of Code 128 that doesn’t use the space-saving “C” character set. This makes Code 128 (long) barcodes generally longer.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Height
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.
Note:

In Dynamic Barcodes, you can create Code 128 barcodes shorter than the minimum height. Dynamic Barcodes will just display a warning, but if you export the document to EPF and open it in PackEdge, PackEdge will extend the barcode to its minimum required height.

Characters per unit

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (millinches), mm or inch.

For example, choose mm and use 1 Character per unit in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.

Increase the Characters per unit value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 Character per unit, the bars needed to encode one character will take up 2 mm.
Narrow Bar
This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.
Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Light Margin Indicator (< >)
This parameter adds “<” and “>” signs (or only “>” depending on the barcode type) at the bottom of your barcode. This indicates the width the barcode should have for optimal reading.

Add Human Readable Characters
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.
This is the same barcode with and without human readable characters:
Box

Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.6 Code 39

About this Barcode...

Code 39 is a popular barcode in industrial barcoding systems, mainly in the U.S.A. It is used in the non-retail industry, particularly in the manufacturing, military, and health sectors. It can encode alphanumeric data.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.
You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.
You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar's width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Height
Enter the height to give to your barcode's bars. They need to be tall enough to be read easily by barcode scanners.

Characters per unit
This parameter allows you to define your barcode's width based on the encoding of (numeric or alphanumeric) characters.
You can choose the unit to use: micron, mil (milliinches), mm or inch.
For example, choose mm and use 1 Character per unit in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.
Increase the **Characters per unit** value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 **Character per unit**, the bars needed to encode one character will take up 2 mm.

**Ratio**

The **Ratio** is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars' width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Check Digit**
Use this parameter to add a check digit to your barcode data.

**Note:** Code 39 doesn’t usually contain a check digit but it can be required in some cases.

**Add Human Readable Characters**
This parameter adds “human readable” characters (numeric or alphanumerical characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode with human readable characters](image1)

**Box**
Use this parameter to create an opaque white box under your barcode.

![Barcode with box](image2)

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

![Barcode with box and margin](image3)

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.7 DataMatrix

About this Barcode...
DataMatrix is used for encoding large amounts of alphanumeric data and / or marking small objects. It can encode all the standard ASCII and extended ASCII characters.
The DataMatrix symbol size can adjust automatically depending on the amount of data.
Dynamic Barcodes doesn’t generate human readable characters for DataMatrix symbols. The data to be encoded in a DataMatrix symbol can contain an FNC1 character but only at the beginning of the data.

Note: Dynamic Barcodes always generates DataMatrix symbols with the recommended ECC200 error correction scheme.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, millinches (“mil”), millimeters or inches.

| **Tip:** You can enter a negative value if you want to print thicker and not thinner bars. |

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, millinches (“mil”), millimeters or inches.

| **Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width. |

| **Tip:** You can enter a negative value if you want to print thicker and not thinner bars. |

**Symbol Type**

Choose the number of cells to use for your barcode (in the format “horizontal cells x vertical cells”).

| **Note:** If the number of cells you choose for your symbol is too small to encode the data you entered in Code, Dynamic Barcodes will display an error. |

You can choose **Best Fit** to make Dynamic Barcodes automatically adapt the number of cells to the amount of data you entered in Code.

**Cell Size**

Enter the size you want to give to each cell of the symbol. This affects the size of the whole symbol. The unit used is the one you chose as Illustrator’s General unit in the Units & Display Performance Preferences.

In the example below, the first symbol has a 1 mm cell size (cells sides are 1 mm), and the second one a 2 mm cell size.
Width / Total Height

The **Width** and **Total Height** parameters depend on the **Cell Size** and the number of cells used for the symbol (**Symbol Type**).

In the example below, a symbol of 10 x 10 cells where each cell is 3 mm gives a Width and Total Height of 30 x 30 mm.

![Symbol Type: 10 by 10](image)

**Cell Size:** 3 mm
**Width:** 30 mm
**Total Height:** 30 mm

**Box**

Use this parameter to create an opaque white box under your barcode.

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

![Box](image)

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.8 EAN 13

**About this Barcode...**

European Article Numbering system or EAN is the standard for article numbering in Europe. It is also used in Japan where it is called JAN.

**Note:** EAN is the European equivalent of the UPC system in the U.S.A. and Canada. Both systems use the same size requirements and a similar encoding scheme. This means that most European and American retail barcode scanners can read both EAN and UPC barcodes. For more information on UPC, see **UPC-A** on page 141.
An EAN 13 is a numeric barcode of thirteen digits, and can have two or five additional digits.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.
You can enter the **Device Compensation** in microns, millinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the **Height** of the barcode before entering a **Magnification** value. The **Height** will change again according to the **Magnification** factor you define.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

**Light Margin Indicator (< >)**

This parameter adds “<“ and “>” signs (or only “>”) depending on the barcode type) at the bottom of your barcode. This indicates the width the barcode should have for optimal reading.
Box

Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.9 EAN 8

About this Barcode...
EAN 8 is an abbreviated version of EAN 13, for use on smaller packages. It contains eight digits of data.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the **Height** of the barcode before entering a **Magnification** value. The **Height** will change again according to the **Magnification** factor you define.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

**Light Margin Indicator (< >)**
This parameter adds “<“ and “>” signs (or only “>” depending on the barcode type) at the bottom of your barcode. This indicates the width the barcode should have for optimal reading.

Box
Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.10 GS1 128

About this Barcode...
GS1 128 (formerly EAN 128) is a Code 128 barcode designed primarily to identify products. It contains one or more FNC1 (GS1 Function Code 1) control characters and Application Identifiers. It shows parentheses around the human readable interpretation of the Application Identifiers, but those parentheses are not encoded in the barcode.

It is alphanumeric and can also contain composite symbols.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.
Attention:
When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don't enter '01' at the beginning. It doesn't matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It's not necessary to keep the same way of entering the Composite Component and the main code.
- If you don't use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don't need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and / or in the Composite Component of GS1 barcodes.

Composite Component

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (*Bar Width Reduction*, *Device Compensation* and *Magnification*) so that the bars' width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumerical characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:
Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

Box
Use this parameter to create an opaque white box under your barcode.
Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached ✗.

7.2.11 GS1 DataBar Omnidirectional

About this Barcode...

Barcodes of the GS1 DataBar family (formerly Reduced Space Symbols or RSS) can identify small items, and encode more information than the current EAN or UPC barcodes.

They can include GS1 Application Identifiers such as serial numbers, lot numbers, expiration dates...

Note: GS1 DataBar codes are expected to replace most common EAN and UPC barcodes from 2010.

GS1 DataBar Omnidirectional encodes Global Trade Item Numbers (GTIN) in a linear symbol that can be scanned omnidirectionally by suitably programmed slot scanners.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Attention:
When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ‘01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

Composite Component
A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters
This parameter adds "human readable" characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.
This is the same barcode with and without human readable characters:

Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

7.2.12 GS1 DataBar Stacked

About this Barcode...
GS1 DataBar Stacked is a variation of the GS1 DataBar barcode, that is stacked in two rows and used when the normal barcode would be too wide for the product.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.
Attention:

When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ‘01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

Composite Component

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar's width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars' width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumerical characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode with and without human readable characters](image)

**Multiple Text Lines**

Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).
Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset

This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

7.2.13 GS1 DataBar Stacked Omnidirectional

About this Barcode...

GS1 DataBar14 Stacked Omnidirectional is taller version of GS1 DataBar14 Stacked, that can be read by omnidirectional scanners.

Parameters

Barcode Type

To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.
Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Attention:
When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ’01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and / or in the Composite Component of GS1 barcodes.

Composite Component
A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.
**Note:** Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

**Bar Width Reduction**
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Narrow Bar**
This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

**Snap Bars to Output Resolution**
Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:
Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

7.2.14 GS1 DataBar Truncated

About this Barcode...
GS1 DataBar Truncated (formerly RSS Limited) is similar to GS1 DataBar but the height of its bars is truncated.

It encodes Global Trade Item Numbers in a smaller symbol for use on small items. It cannot be scanned omnidirectionally.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.
Attention:
When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don't enter '01' at the beginning. It doesn't matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It's not necessary to keep the same way of entering the Composite Component and the main code.
- If you don't use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don't need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and / or in the Composite Component of GS1 barcodes.

Composite Component

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

**Note:** Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar

This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

```
| 1 234567 890123 |
```

Multiple Text Lines

Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).
Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

7.2.15 GS1 DataBar Expanded

About this Barcode...
GS1 DataBar Expanded (formerly RSS Expanded) encodes regular barcode data ("primary item identification" data) and Application Identifiers. It can encode alphanumeric characters.
This barcode can be scanned omnidirectionally by suitably programmed slot scanners.

Parameters
Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.
Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

**Attention:**

When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, the following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don't enter '01' at the beginning. It doesn't matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It's not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

**Composite Component**

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.
Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters
This parameter adds “human readable” characters (numeric or alphanumerical characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:
Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

7.2.16 GS1 DataBar Expanded Stacked
About this Barcode...
GS1 DataBar Expanded Stacked can encode the same amount of data as GS1 DataBar Expanded, but can also “stack” the barcode into several rows to save space.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.
Attention:

When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 barcodes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ‘01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

Composite Component

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.
Use this parameter to define how many segments of data (groups of bars encoding several digits) can fit in one row. If the barcode contains more segments, they will be stacked.

In the example below, the first barcode has a Max. Row Width of 8 segments. When reducing this to 4 segments, the segments that don’t fit in the row width anymore are stacked, forming a second row (second barcode).

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:
Dynamic Barcodes

Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

![Barcode Example](image)

**Note:** When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

![Barcode Example](image)

**Note:** When reopening your document in PackEdge, the characters will be placed just below the bars again.

### 7.2.17 GS1 DataBar Limited

**About this Barcode...**
GS1 Databar Limited is smaller than the GS1 DataBar barcode and can only encode Global Trade Item Numbers whose data part starts with “1”.

![Barcode Example](image)
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.
Attention:

When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ‘01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and / or in the Composite Component of GS1 barcodes.

Composite Component

A Composite Component is a 2D symbol placed on top of a GS1 barcode, that encodes extra information (batch number, expiration date...).

If you want your barcode to have a Composite Component, enter the (alphanumeric) data to encode in this field.

Note: Dynamic Barcodes checks the data you enter for the Composite Component (for example to see if the Application Identifiers you entered are correct), and displays a warning if it is invalid.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

### Tip: You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

### Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar's width.

### Tip: You can enter a negative value if you want to print thicker and not thinner bars.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode. This affects the size (height and width) of your GS1 barcode proportionally.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars' width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode with and without human readable characters]

**Multiple Text Lines**

Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).
Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

**Additional Text Offset**

This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

### 7.2.18 GS1 DataMatrix

**About this Barcode...**

The GS1 Data Matrix barcode is a high density, high capacity, scalable 2D barcode. It is used to concentrate a lot of (alphanumeric) information in a very small space.

**Parameters**

**Barcode Type**

To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.
To rotate it by any other angle, enter that angle in the Rotation field.

Code

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Attention:

When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don’t enter ‘01’ at the beginning. It doesn’t matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It’s not necessary to keep the same way of entering the Composite Component and the main code.
- If you don’t use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don’t need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

Bar Width Reduction

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.
Device Compensation

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

Symbol Type

Choose the number of cells to use for your barcode (in the format “horizontal cells x vertical cells”).

**Note:** If the number of cells you choose for your symbol is too small to encode the data you entered in **Code**, Dynamic Barcodes will display an error.

You can choose **Best Fit** to make Dynamic Barcodes automatically adapt the number of cells to the amount of data you entered in **Code**.

Cell Size

Enter the size you want to give to each cell of the symbol. This affects the size of the whole symbol.

The unit used is the one you chose as Illustrator’s **General** unit in the **Units & Display Performance Preferences**.

In the example below, the first symbol has a 1 mm cell size (cells sides are 1 mm), and the second one a 2 mm cell size.

**Width / Total Height**

The **Width** and **Total Height** parameters depend on the **Cell Size** and the number of cells used for the symbol (**Symbol Type**).

In the example below, a symbol of 10 x 10 cells where each cell is 3 mm gives a Width and Total Height of 30 x 30 mm.
Add Human Readable Characters
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

Multiple Text Lines
Select this parameter if you want the human readable characters to be printed on multiple lines below the barcode. Dynamic Barcodes will start a new line for every element of the barcode data (starting with the Application Identifier).

Note: When reopening your document in PackEdge, the characters will be placed back on a single line.

Additional Text Offset
This parameter allows you to add extra space between your barcode bars and the human readable characters.

Note: When reopening your document in PackEdge, the characters will be placed just below the bars again.

Box
Use this parameter to create an opaque white box under your barcode.

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.19 GS1 U.S. Coupon Interim

About this Barcode...

GS1 U.S. Coupon Interim is an interim coupon barcode. It is used during the transition between UPC-A coupons and the new GS1 Databar Expanded Stacked coupons, that can encode more information.

It is made of both an old UPC-A coupon barcode, and a new Databar Expanded Stacked coupon barcode, to be readable by both old and new scanners.

Parameters

Barcode Type

To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation

To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.
Attention:
When entering data to be encoded in GS1 barcodes, you can either enter Application Identifiers (AI) including the brackets, or you can enter the code without brackets, using FNC1 code at the end of each variable-length element in the data. While entering GS1 data, following remarks should be taken into account:

- Do not add the mandatory FNC1 character at the beginning of the data. Dynamic Barcodes will add it automatically.
- For GS1 bar codes intended for encoding AI (01) only, AI has to be omitted, i.e. don't enter '01' at the beginning. It doesn't matter if entered with or without brackets.
- The Composite Component can be created using the same rules for using brackets and [F1]. It's not necessary to keep the same way of entering the Composite Component and the main code.
- If you don't use brackets for entering AI, type [F1] at the end of each variable-length element in the data, to represent a FNC1 terminating character, except when the variable-length element is placed at the end of the whole code.
- You don't need to type [F1] at the end of fixed-length elements.
- Do not mix using [F1] as terminators of variable AI and entering brackets around the AI.

Dynamic Barcodes also checks the validity of the Application Identifiers you enter in the Code and/or in the Composite Component of GS1 barcodes.

Use “992” Prod. Family in UPC
Enable this parameter to use the special “992” product family in your barcode (for specific offers like discounts on the customer's next purchase or on variable weight items...).

GS1 Max. Row Width
This parameter applies to the GS1 Databar Expanded Stacked component of the GS1 U.S. Coupon Interim barcode.

Use this parameter to define how many segments of data (groups of bars encoding several digits) can fit in one row. If the barcode contains more segments, they will be stacked.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.
**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**UPC Magnification**

Use this parameter to increase or decrease the size of the UPC barcode only (this changes the width and height proportionally).

**GS1 Narrow Bar**

This parameter determines the width of the narrowest bar of your GS1 barcode (and affects its width proportionally).

**UPC / GS1 Gap (inches)**

Enter the distance you want to have between the UPC and the GS1 barcodes, in inches. You can also choose one of the default values in the list.

**Vertical Alignment**

Dynamic Barcodes allows you to resize either the UPC-A or the GS1 Databar Expanded Stacked coupon barcode, so they are aligned vertically with each other. You can choose:

- **None** to keep the original size of both the UPC and the GS1 barcodes,
- **Resize UPC to GS1** to resize the UPC barcode so it has the same height as the GS1 barcode,
- **Resize GS1 to UPC** to resize the GS1 barcode so it has the same height as the UPC barcode.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

### 7.2.20 HIBC 128

**About this Barcode...**
This barcode is based on the Code 128 symbology.

It encodes the organization's primary and / or secondary Labeler Identification Code (LIC). This encoding begins with the “+” character. If both primary and secondary Labeler Identification Codes are encoded in one barcode, they are divided by the “/” character.

![Barcode Image]

**Parameters**

**Barcode Type**
To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**
To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Bar Width Reduction**
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.
Dynamic Barcodes

Device Compensation

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

Magnification

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

Height

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define.

Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

Box
Use this parameter to create an opaque white box under your barcode.

![Barcode with white box](image1)

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

![Barcode with white margins](image2)

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

![Barcode margin settings](image3)

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.21 HIBC 39

**About this Barcode...**

This barcode is based on the Code 39 symbology. It encodes the organization’s primary and / or secondary Labeler Identification Code (LIC). This encoding begins with the “+” character. If both primary and secondary Labeler Identification Codes are encoded in one barcode, they are divided by the “/” character.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Magnification
Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.
**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

⚠️ **Attention:** Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

```
1 234567 890128>
```

**Box**

Use this parameter to create an opaque white box under your barcode.

```
1 234567 890128>
```

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.
By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.22 ITF-14

About this Barcode...
ITF-14 is a standardized version of the Interleaved 2 of 5 barcode, containing 14 digits, the last being a check digit.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.
To rotate it by any other angle, enter that angle in the Rotation field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

**Text Format**

Choose a variant of the Shipping Container Symbol text format for the human readable characters of your barcode.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

**Total Height**

Enter the total height you want to give to your barcode. This is the combined height of the bars, the human readable characters and the box. If your barcode doesn't contain human readable characters or a box, the Total Height is the same as the bars' Height.

**Smax / Smin**
Use these parameters to define the width of the printability gauges ("H" marks) either side of your barcode. \textit{Smax} defines the width of the left "H", \textit{Smin} defines the width of the right "H''. Enter 0 in both fields if you don’t want printability gauges.

In the example below, the top barcode has a value of 0 for both \textit{Smax} and \textit{Smin}, the middle one has a value of 4 and the bottom one has a value of 8 (the maximum).

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

**Box**

Use this parameter to create a transparent box under your barcode, and bearer bars around it.

Use the \textit{Top}, \textit{Bottom}, \textit{Left} and \textit{Right} fields fields to make the box bigger.

In the example below, the top barcode has a 0 mm \textbf{Box} around it, and the bottom barcode a 4 mm \textbf{Box}. 
By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.23 ITF-16

About this Barcode...
ITF-16 is a standardized version of the Interleaved 2 of 5 barcode, containing 16 digits, the last being a check digit.

Parameters
Barcode Type
To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Text Format**

Choose a variant of the Shipping Container Symbol text format for the human readable characters of your barcode.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Total Height**

Enter the total height you want to give to your barcode. This is the combined height of the bars, the human readable characters and the box. If your barcode doesn't contain human readable characters or a box, the **Total Height** is the same as the bars' **Height**.

**Smax / Smin**

Use these parameters to define the width of the printability gauges (“H” marks) either side of your barcode. **Smax** defines the width of the left “H”, **Smin** defines the width of the right “H”. Enter 0 in both fields if you don’t want printability gauges.

In the example below, the top barcode has a value of 0 for both **Smax** and **Smin**, the middle one has a value of 4 and the bottom one has a value of 8 (the maximum).

![Barcode Examples](image)

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

**Box**

Use this parameter to create a transparent box under your barcode, and bearer bars around it. Use the **Top**, **Bottom**, **Left** and **Right** fields to make the box bigger.

In the example below, the top barcode has a 0 mm **Box** around it, and the bottom barcode a 4 mm **Box**.
By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.24 Interleaved 2 of 5

About this Barcode...
Interleaved 2 of 5 (or Int. 2 of 5) is a barcode originally used for transportation packaging, that can have any even number of digits. Since this type of packaging consists mainly of cardboard boxes printed in low quality, the Interleaved 2 of 5 barcode is more tolerant to distortion than other barcodes.

Parameters
Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.
Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

**Code**
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

**Bar Width Reduction**
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, millicentimeters ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, millicentimeters ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar's width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Height**
Enter the height to give to your barcode's bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**
This parameter allows you to define your barcode's width based on the encoding of (numeric or alphanumerical) characters.

You can choose the unit to use: micron, mil (millicentimeters), mm or inch.

For example, choose mm and use 1 Character per unit in the Dynamic Barcodes dialog if you want the bars needed to encode one character to take up 1 mm.
Increase the **Characters per unit** value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 **Character per unit**, the bars needed to encode one character will take up 2 mm.

**Note:** Barcodes like Interleaved 2 of 5 encode two characters together in a group of black and white bars. For these barcodes, Dynamic Barcodes takes half of the group of black and white bars to measure one character.
**Ratio**

The **Ratio** is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

**Box**

Use this parameter to create an opaque white box under your barcode.
Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.25 Laetus Pharma Code

**About this Barcode...**

This barcode was developed specifically to meet the requirements of the pharmaceutical packaging process. It has established itself as the worldwide pharmaceutical industry barcode standard. It can encode numeric or binary data.

**Parameters**

**Barcode Type**
To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**
To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Miniature**
Use this option to create a miniature version of the bar code

**Bar Width Reduction**
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.
You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.
You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Height**
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Narrow Bar**
This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Ratio**
The **Ratio** is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Wide Bar**
This parameter determines the width of the widest bar of your barcode.

**Gap**
Enter the width of the white space between the bars.

**Note:** The **Ratio** influences the **Gap** size: increasing the **Ratio** also increases the **Gap** size.

**Snap Bars to Output Resolution**
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Decimal Input**
Use this parameter to change the type of data you can enter in the **Code** field.

- Disable it to enter the data to encode in binary format.
- Enable it to enter the data in decimal instead of binary format.

**Note:** When using binary format for the Laetus Pharma Code/CLF-8 barcode data, you need to use a special "Pharma" binary format.

To convert a decimal number into a Pharma binary number, do the following:

1. Add 1 to your decimal number.
2. Convert the result to a binary number using a regular binary conversion algorithm.
3. Remove the first digit (which is 1).

You now have your Pharma binary input for the Laetus Pharma Code/CLF-8 barcode.

For example, you want to encode the number 3.

1. \( 3 + 1 = 4 \)
2. 4 in binary is 100.
3. Without the first digit, it's 00.

Enter **00** in the **Code** field of your Laetus Pharma Code/CLF-8 barcode.

**Box**
Use this parameter to create an opaque white box under your barcode.
Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.26 M+S 7

**About this Barcode...**

The M+S 7 barcode is an EAN 8 barcode modified by Marks & Spencer’s, for use on own-brand products sold in their stores.

To make the M+S 7 barcode, the initial “0” is removed and the extra letters “M” and “S” are added to the human readable characters.

This means that the human readable characters contain seven digits plus the “M” and “S” letters.

**Note:** This doesn’t affect the data encoded in the barcode (it still encodes eight digits), so you should enter eight digits when creating a M+S 7 barcode.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Magnification
Use this parameter to increase or decrease the barcode size proportionally.

Height
Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

Attention: Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define.

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

**Box**

Use this parameter to create a transparent box under your barcode, and bearer bars around it.

Use the Top, Bottom, Left and Right fields fields to make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.27 MSI

**About this Barcode...**

MSI, also known as Modified Plessey, was developed by the MSI Data Corporation, based on the original Plessey Code. It is a numeric barcode used primarily to mark retail shelves for inventory control.

**Parameters**

**Barcode Type**

To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.
To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn't, a warning / error will pop up.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (milliinches), mm or inch.

For example, choose **mm** and use 1 **Character per unit** in the **Dynamic Barcodes** dialog if you want the bars needed to encode one character to take up 1 mm.
Increase the Characters per unit value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 Character per unit, the bars needed to encode one character will take up 2 mm.

**Ratio**

The Ratio is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode with and without human readable characters](image)

**Box**

Use this parameter to create an opaque white box under your barcode.

![Barcode with box](image)

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

![Box parameters](image)

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.28 Marks & Spencer's

About this Barcode...
The Marks & Spencer's barcode is also an EAN 8 barcode modified by Marks & Spencer's for use on own-brand products.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.
You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar's width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar's width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

![Barcode Examples](image)

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the **Height** of the barcode before entering a **Magnification** value. The **Height** will change again according to the **Magnification** factor you define.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction**, **Device Compensation** and **Magnification**) so that the bars' width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode Examples](image)

**Box**

Use this parameter to create an opaque white box under your barcode.
Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.29 NDC / HRI

**About this Barcode...**

The NDC / HRI barcode is a variant of the UPC barcode with special human readable interpretation formats compliant to the US National Drug Code definition.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Text Format
Choose a variant of the U.S. National Drug Code text format for the human readable characters of your barcode.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.
You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.
You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.
Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

![Barcode Examples](image)

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

**Box**

Use this parameter to create an opaque white box under your barcode.

![Box Examples](image)

Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.
By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

7.2.30 PZN

About this Barcode...
The PZN (Pharma-Zentral-Nummer) barcode is used for distribution of pharmaceutical and healthcare products in Germany. It encodes the letters “PZN” and up to seven digits of data.

Parameters
Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.
To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Size**

Choose to give your PZN barcode a **Small**, **Normal** or **Large** size. Those are predefined sizes for this barcode. The actual Height, Characters per unit, Ratio and Narrow Bar values are shown underneath.

By selecting **Custom**, you can manually edit these four parameters.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumerical) characters.

You can choose the unit to use: micron, mil (milliinches), mm or inch.

For example, choose **mm** and use 1 **Character per unit** in the **Dynamic Barcodes** dialog if you want the bars needed to encode one character to take up 1 mm.
Increase the Characters per unit value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 Character per unit, the bars needed to encode one character will take up 2 mm.

**Ratio**

The Ratio is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode comparison](image)

**Box**
Use this parameter to create an opaque white box under your barcode.

![Box example](image)

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

![Box settings](image)

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

### 7.2.31 PZN8

#### About this Barcode...

The PZN8 (Pharma-Zentral-Nummer) barcode is used for distribution of pharmaceutical and healthcare products in Germany. It encodes the letters “PZN” and up to eight digits of data.

![PZN-00000000]

#### Parameters

**Barcode Type**

To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Size**

Choose to give your PZN barcode a **Small**, **Normal** or **Large** size. Those are predefined sizes for this barcode. The actual Height, Characters per unit, Ratio and Narrow Bar values are shown underneath.

By selecting **Custom**, you can manually edit these four parameters.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (milliinches), mm or inch.

For example, choose mm and use 1 **Character per unit** in the **Dynamic Barcodes** dialog if you want the bars needed to encode one character to take up 1 mm.

Increase the **Characters per unit** value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 **Character per unit**, the bars needed to encode one character will take up 2 mm.
Ratio
The Ratio is the factor between the width of the narrow bar and the width of the wide bar in your barcode. For example, enter 3 if you want your wide bar to be three times as wide as your narrow bar.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Add Human Readable Characters
This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

Box
Use this parameter to create an opaque white box under your barcode.
Use the Top, Bottom, Left and Right fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.32 Paraf Italy

**About this Barcode...**

This barcode is a variant of Code 39 used by the Italian Health and Cosmetics Industry. It is also called Code 32.
To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

![Rotation buttons](image)

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code Base32**

Use this field when your barcode data is encoded in the Base 32 format. This format uses case-insensitive alphanumeric characters to encode data.

**Code Base10**

Use this field when your barcode data is in decimal format. Paraf Italy barcodes in decimal format should start with an “A” (included automatically by Dynamic Barcodes), have 8 digits of data and end with a check digit (calculated automatically by Dynamic Barcodes).

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a **Bar Width Reduction** value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches (“mil”), millimeters or inches.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches (“mil”), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Characters per unit**

This parameter allows you to define your barcode’s width based on the encoding of (numeric or alphanumeric) characters.

You can choose the unit to use: micron, mil (milliinches), mm or inch.

For example, choose mm and use 1 **Character per unit** in the **Dynamic Barcodes** dialog if you want the bars needed to encode one character to take up 1 mm.
Increase the **Characters per unit** value to make the barcode narrower, or decrease it to make the barcode wider. For example, if you choose 0.5 **Character per unit**, the bars needed to encode one character will take up 2 mm.

**Narrow Bar**

This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Box**

Use this parameter to create an opaque white box under your barcode.
Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.33 PDF417

**About this Barcode...**

PDF417 is a 2D barcode mainly used in security printing (passports, identity cards, driving licences...). It is a “self-checking” barcode that can have different levels of error correction.

It can encode data using one of three “compaction” modes: Text (to encode all alphanumeric and punctuation characters in the ISO-8859-1 character set), Numeric (to encode only numeric characters) or Binary (to encode 8-bit characters).

It can use the three compaction modes in a single barcode if necessary, but you can choose to disable the Text and/or Numeric compaction modes.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.
You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.
You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Height
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Columns**
You can give your barcode between 1 and 30 Columns. The number of columns corresponds to the number of PDF417 codewords.

**Rows**
You can give your barcode between 3 and 90 Rows.

**Truncated**
Choose Truncated to make the symbol less wide by truncating the end character (which is not part of the encoded data) and the end pattern. In the example below, the top PDF417 barcode is not truncated, and the bottom barcode is truncated (but encodes the same data).

![Barcode Examples](image)

**Initialize in Alpha Submode**
Choose this option to generate a “shift to Text mode” character at the beginning of the barcode when using Text compaction mode. This makes the encoding clear for barcode scanners.

**Allow Text Compaction**
Choose this to let Dynamic Barcodes switch to Text compaction mode automatically when your barcode contains text data.
This encodes the text data in your barcode more efficiently (it makes that part of your barcode smaller).

**Allow Numeric Compaction**
Choose this to let Dynamic Barcodes switch to Numeric compaction mode automatically when your barcode contains numeric data.
This encodes the numeric data in your barcode more efficiently.

| Note: |
| Dynamic Barcodes can always switch to the Binary compaction mode if your barcode contains binary data. |
| If you don’t enable either Allow Text Compaction or Allow Numeric Compaction, Dynamic Barcodes will only use Binary compaction mode. |

**Error Correction Level**
Error correction adds check sums to the barcode to detect and correct incorrect data. You can choose an Error correction level from 0 to 8.
The higher the correction level, the more check sums are added to the barcode and the more incorrect data can be corrected. Keep in mind that a higher correction level makes the barcode bigger and may limit the maximum length of the encoded data.
**Note:** Level 0 means that there is only one check sum added to the data, so incorrect data can be detected but not corrected.

You can choose **Automatic** to let the plug-in pick the best error correction level for the data encoded.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (**Bar Width Reduction** and **Device Compensation**) so that the bars' width take up a complete number of pixels or dots.

Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Box**

Use this parameter to create a transparent box under your barcode, and bearer bars around it.

Use the **Top**, **Bottom**, **Left** and **Right** fields to make the box bigger.

In the example below, the top barcode has a 0 mm **Box** around it, and the bottom barcode a 3 mm **Box**.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.34 MicroPDF417

**About this Barcode...**

MicroPDF417 is a 2D multi-row barcode derived from PDF417, for use on smaller areas. It can encode up to 150 bytes.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.
Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.
You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.
You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Narrow Bar
This parameter determines the width of the narrowest bar of your barcode (and affects the width of your barcode proportionally).

Height
Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.
Columns
You can give your barcode between 1 and 4 Columns.

Rows
You can give your barcode between 4 and 44 Rows.

Allow Text Compaction
Choose this to let Dynamic Barcodes switch to Text compaction mode automatically when your barcode contains text data.

This encodes the text data in your barcode more efficiently (it makes that part of your barcode smaller).

Allow Numeric Compaction
Choose this to let Dynamic Barcodes switch to Numeric compaction mode automatically when your barcode contains numeric data.

This encodes the numeric data in your barcode more efficiently.

Note:
Dynamic Barcodes can always switch to the Binary compaction mode if your barcode contains binary data.

If you don't enable either Allow Text Compaction or Allow Numeric Compaction, Dynamic Barcodes will only use Binary compaction mode.

Snap Bars to Output Resolution
Use this to adjust the barcode size parameters (Bar Width Reduction and Device Compensation) so that the bars’ width take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

Box
Use this parameter to create a transparent box under your barcode, and bearer bars around it.

Use the Top, Bottom, Left and Right fields fields to make the box bigger.

In the example below, the top barcode has a 0 mm Box around it, and the bottom barcode a 3 mm Box.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.35 UPC-A

About this Barcode...

Universal Product Code or UPC is the standard for article numbering in the U.S.A. and Canada. It is similar to the EAN system and compatible with it. For more information on EAN, see EAN 13 on page 53.

UPC-A is a numeric barcode of up to twelve digits, plus two or five additional digits.

Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.
To rotate it by any other angle, enter that angle in the Rotation field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the **Bar Width Reduction** in microns, milliinches ("mil"), millimeters or inches.

| Tip: You can enter a negative value if you want to print thicker and not thinner bars. |

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the **Device Compensation** in microns, milliinches ("mil"), millimeters or inches.

| Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width. |

| Tip: You can enter a negative value if you want to print thicker and not thinner bars. |

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

![Barcode examples at different magnifications](image)

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

| Attention: Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define. |

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.
Enable **Snap Bars to Output Resolution** and enter the resolution you will use to print your barcode in ppi.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode Comparison]

**Box**

Use this parameter to create an opaque white box under your barcode.

![Barcode with Box]

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

![Box with Margins]

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.
If you want to change them independently, click the link symbol to make it look detached.

7.2.36 UPC-E

About this Barcode...

UPC-E is an abbreviated version of UPC-A, for use on smaller packages. It is a numeric barcode of up to eight digits and can have two additional digits.

Parameters

Barcode Type

To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation

To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn't, a warning / error will pop up.

Bar Width Reduction

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches ("mil"), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches ("mil"), millimeters or inches.

**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

### Magnification

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

![Barcode at different magnifications](image)

**Height**

Enter the height to give to your barcode (this is the combined height of the bars and the human readable characters). Your barcode needs to be tall enough to be read easily by barcode scanners.

**Attention:** Do not change the Height of the barcode before entering a Magnification value. The Height will change again according to the Magnification factor you define.

### Snap Bars to Output Resolution

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars’ width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

### Add Human Readable Characters

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

![Barcode with and without human readable characters](image)

### Box

Use this parameter to create an opaque white box under your barcode.
Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.37 UPC-SCS

**About this Barcode...**

The UPC–SCS (Shipping Container Symbol) barcode is a version of the Interleaved 2 of 5 barcode that has a structure very similar to the Universal Product Code’s (UPC) and specific formatting of the human readable interpretation.
Parameters

Barcode Type
To create a barcode of this type, select it in the Barcode Type parameter. This displays parameters specific to this barcode type in the Dynamic Barcodes dialog.

Rotation
To rotate your barcode by 90, 180 or 270 degrees, use the Rotation buttons.

To rotate it by any other angle, enter that angle in the Rotation field.

Code
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

Text Format
Choose a variant of the Shipping Container Symbol text format for the human readable characters of your barcode.

Bar Width Reduction
Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, millinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation
Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, millinches (“mil”), millimeters or inches.
**Note:** If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip:** You can enter a negative value if you want to print thicker and not thinner bars.

**Magnification**

Use this parameter to increase or decrease the barcode size proportionally.

In the example below, you can see the same barcode at 80%, 100% and 120% magnification.

**Height**

Enter the height to give to your barcode’s bars. They need to be tall enough to be read easily by barcode scanners.

**Snap Bars to Output Resolution**

Use this to adjust the barcode size parameters (Bar Width Reduction, Device Compensation and Magnification) so that the bars' width and height take up a complete number of pixels or dots.

Enable Snap Bars to Output Resolution and enter the resolution you will use to print your barcode in ppi.

**Total Height**

Enter the total height you want to give to your barcode. This is the combined height of the bars, the human readable characters and the box. If your barcode doesn't contain human readable characters or a box, the Total Height is the same as the bars’ Height.

**Add Human Readable Characters**

This parameter adds “human readable” characters (numeric or alphanumeric characters) under your barcode. It is enabled by default.

This is the same barcode with and without human readable characters:

**Box**

Use this parameter to create a transparent box under your barcode, and bearer bars around it.

Use the **Top**, **Bottom**, **Left** and **Right** fields fields to make the box bigger.
In the example below, the top barcode has a 0 mm Box around it, and the bottom barcode a 4 mm Box.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.

### 7.2.38 QR

**About this Barcode...**

The QR barcode is a 2-dimensional barcode used for commercial tracking and convenience-oriented applications aimed at mobile phone users (known as “mobile tagging”).

QR codes storing addresses and URLs may appear in magazines, on signs, buses, business cards, or other objects... Users with a camera phone equipped with the correct reader application can scan the QR code to display text, contact information, connect to a wireless network, or open a web page in the phone’s browser.
QR codes have the following structure:

- Position pattern (required)
- Alignment pattern (required)
- Timing pattern (required)
- Version information
- Format information
- Data and error correction keys

**Parameters**

**Barcode Type**
To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**
To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.

To rotate it by any other angle, enter that angle in the **Rotation** field.

**Code**
Enter the data to encode in your barcode.
Dynamic Barcodes checks that the data you have entered is valid for your chosen **Barcode Type**. If it isn’t, a warning / error will pop up.

**Minimum Symbol Size**
Choose the number of cells to use for your barcode (in the format “horizontal cells x vertical cells”).
Note: If the number of cells you choose for your symbol is too small to encode the data you entered in Code, Dynamic Barcodes will use a bigger symbol size automatically.

Error Correction

Error correction adds check sums to the barcode to detect and correct incorrect data. You can choose one of the following Error correction levels:

- **Level L**: 7% of codewords can be restored.
- **Level M**: 15% of codewords can be restored.
- **Level Q**: 25% of codewords can be restored.
- **Level H**: 30% of codewords can be restored.

Note: Keep in mind that a higher correction level makes the barcode bigger (as more check sums are added to the barcode) and may limit the maximum length of the encoded data.

Bar Width Reduction

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Device Compensation

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

Note: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

Tip: You can enter a negative value if you want to print thicker and not thinner bars.

Cell Size

Enter the size you want to give to each cell of the symbol. This affects the size of the whole symbol.

The unit used is the one you chose as Illustrator’s General unit in the Units & Display Performance Preferences.

In the example below, the first symbol has a 1 mm cell size (cells sides are 1 mm), and the second one a 2 mm cell size.
**Width / Height**

The **Width** and **Height** parameters depend on the **Cell Size** and the number of cells used for the symbol (**Minimum Symbol Size**).

For example, a symbol of 25 x 25 cells where each cell is 2 mm gives a **Width** and **Height** of 50 x 50 mm.

**Box**

Use this parameter to create an opaque white box under your barcode.

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins' values so that when you change one of them, the other ones are updated automatically.

![Example of Box Parameter](image)

If you want to change them independently, click the link symbol to make it look detached 🇬🇧.

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### 7.2.39 MicroQR

**About this Barcode...**

The Micro QR Code is a very small QR Code for use on smaller spaces (for example to encode the ID of printed circuit boards and electronics parts).

It works with smaller amounts of data (maximum 35 numeric characters), and uses only one position pattern.

![MicroQR Code](image)

**Parameters**

**Barcode Type**

To create a barcode of this type, select it in the **Barcode Type** parameter. This displays parameters specific to this barcode type in the **Dynamic Barcodes** dialog.

**Rotation**

To rotate your barcode by 90, 180 or 270 degrees, use the **Rotation** buttons.
To rotate it by any other angle, enter that angle in the Rotation field.

**Code**

Enter the data to encode in your barcode.

Dynamic Barcodes checks that the data you have entered is valid for your chosen Barcode Type. If it isn’t, a warning / error will pop up.

**Minimum Symbol Size**

Choose the number of cells to use for your barcode (in the format “horizontal cells x vertical cells”).

**Note**: If the number of cells you choose for your symbol is too small to encode the data you entered in Code, Dynamic Barcodes will use a bigger symbol size automatically.

**Error Correction**

Error correction adds check sums to the barcode to detect and correct incorrect data. You can choose one of the following Error correction levels:

- **Level L**: 7% of codewords can be restored.
- **Level M**: 15% of codewords can be restored.
- **Level Q**: 25% of codewords can be restored.
- **Level H**: 30% of codewords can be restored.

**Note**: Keep in mind that a higher correction level makes the barcode bigger (as more check sums are added to the barcode) and may limit the maximum length of the encoded data.

**Bar Width Reduction**

Use this to adjust the width of barcode bars, in order to compensate for ink bleeding when printing on your substrate.

Your printer or customer will usually provide you with the value to use. For example if your printer tells you that the line width will increase by 0.01mm, you should use a Bar Width Reduction value of 0.01 mm.

You can enter the Bar Width Reduction in microns, milliinches (“mil”), millimeters or inches.

**Tip**: You can enter a negative value if you want to print thicker and not thinner bars.

**Device Compensation**

Use this if your printer gave you a separate device bleed value. This parameter adjusts the bar’s width to compensate for bleed caused by the plate or film making process.

You can enter the Device Compensation in microns, milliinches (“mil”), millimeters or inches.

**Note**: If you use both a Bar Width Reduction and a Device Compensation value, Dynamic Barcodes will add them to adjust the bar’s width.

**Tip**: You can enter a negative value if you want to print thicker and not thinner bars.

**Cell Size**

Enter the size you want to give to each cell of the symbol. This affects the size of the whole symbol.

The unit used is the one you chose as Illustrator’s General unit in the Units & Display Performance Preferences.
In the example below, the first symbol has a 1 mm cell size (cells sides are 1 mm), and the second one a 2 mm cell size.

**Width / Height**

The **Width** and **Height** parameters depend on the **Cell Size** and the number of cells used for the symbol (**Minimum Symbol Size**).

For example, a symbol of 15 x 15 cells where each cell is 2 mm gives a **Width** and **Height** of 30 x 30 mm.

**Box**

Use this parameter to create an opaque white box under your barcode.

Use the **Top**, **Bottom**, **Left** and **Right** fields to add a white margin around your barcode and make the box bigger.

By default, Dynamic Barcodes links the four margins’ values so that when you change one of them, the other ones are updated automatically.

If you want to change them independently, click the link symbol to make it look detached.