EAN-13 barcode

Fact Sheet

The EAN-13 barcode is of the EAN/UPC symbology family and encodes a GTIN-13 that can be scanned both at retail Point-of-Sale (POS) and in the General Distribution Scanning environment. The EAN-13 may not be used in scanning environments where attribute information is required.

Figure 1: EAN-13 barcode dimensions at nominal size (100%)

Note: Figure is not to scale. Measurements in millimetres.

X-dimension

The x-dimension is the specified width of the narrowest element of a barcode. The element refers to the barcode's bars and spaces. The x-dimension is not a set size and instead can range between a minimum and maximum value, and a target x-dimension.

The specified magnification (X-dimension) range for an EAN-13 barcode is:

- Retail POS: 80% - 200% (X-dimension 0.26mm - 0.66mm).
- General Distribution: 150% - 200% (X-dimension 0.50mm – 0.66mm). (Automated scanning)

The target x-dimension for an EAN-13 barcode is:

- Retail POS: 0.330mm
- General Distribution: 0.660mm

Magnification

These barcodes may only be printed using magnification below 80% (X- dimension below 0.26mm) under the following conditions:

- The allowance for X-dimensions between 0.249 mm and 0.26 mm is only applicable to on demand (e.g., thermal, laser) print processes. For all other printing processes, an X-dimension of 0.264 millimetre (magnification of 80%) is attainable and is the minimum allowable size.

When printing a minimum symbol with any method of printing, the area provided for printing the symbol and the required Quiet Zone SHOULD never be less than the area required for an X-dimension of 0.26 mm (or magnification of 80%).

Human Readable Interpretation

The Human Readable Interpretation should be printed beneath the barcode and must show all the digits encoded in the barcode.

The recommended typeface for the Human Readable Interpretation is a monospaced font type, such as OCR-B, Sans serif or Arial. Bold, italics, light or narrow versions of a font SHOULD NOT be used.

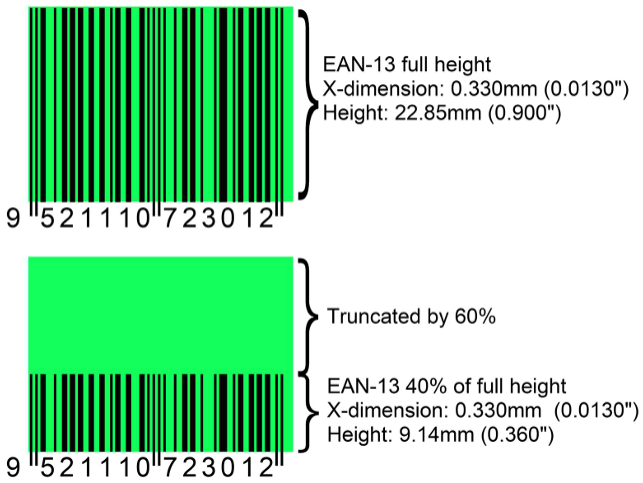
Symbol Height

The dark bars forming the left, centre and right guard bar patterns shall be extended downward by 5X (e.g., 1.65mm at X-dimension 0.33mm). See Table 1 for height of bars at various X-dimensions.

Example symbol truncation

Below is an example of EAN-13 truncation. Please refer to Table 1 for information about the height requirements for an EAN-13.

Figure 2: Example of an EAN-13 barcode truncated by 60% of its bar minimum height for a given x-dim



Note: Figure is not to scale.

Currently the retail industry is undergoing a worldwide transition to next generation 2D barcodes. For more information please refer to - https://www.gs1au.org/standards/2d-barcodes

Table 1: EAN-13 barcode dimensions

Magnification	X-dimension	Width	Bar Height**	Left Quiet Zone	Right Quiet Zone
80%	0.26	25.08	18.28	2.90	1.85
85%	0.28	26.65	19.42	3.09	1.96
90%	0.30	28.22	20.57	3.27	2.08
95%	0.31	29.78	21.71	3.45	2.19
100%	0.33	31.35	22.85	3.63	2.31
105%	0.35	32.92	23.99	3.81	2.43
110%	0.36	34.49	25.14	3.99	2.54
115%	0.38	36.05	26.28	4.17	2.66
120%	0.40	37.62	27.42	4.36	2.77
125%	0.41	39.19	28.56	4.54	2.89
130%	0.43	40.76	29.71	4.72	3.00
135%	0.45	42.32	30.85	4.90	3.12
140%	0.46	43.89	31.99	5.08	3.23
145%	0.48	45.46	33.13	5.26	3.35
150%	0.50	47.03	34.28	5.45	3.47
155%	0.51	48.59	35.42	5.63	3.58
160%	0.53	50.16	36.56	5.81	3.70
165%	0.54	51.73	37.70	5.99	3.81
170%	0.56	53.30	38.85	6.17	3.93
175%	0.58	54.86	39.99	6.35	4.04
180%	0.59	56.43	41.13	6.53	4.16
185%	0.61	58.00	42.27	6.72	4.27
190%	0.63	59.57	43.42	6.90	4.39
195%	0.64	61.13	44.56	7.08	4.50
200%	0.66	62.70	45.70	7.26	4.62

Notes:

- Width = width of barcode excluding Quiet Zones.
- Bar Height = bar height excluding guard bar patterns.
- To allow for possible ink spread, allow slightly more than the minimum required Quiet Zone.
- All measurements are in millimetres.

** For trade items scanned at general retail POS (but not in general distribution), bar height may be truncated to suit packaging constraints. However, the symbol height SHALL NOT be reduced below 60% of the minimum height specified for the applicable X-dimension. Excessive truncation can adversely affect omnidirectional scanning performance, especially at retail point of sale. Please see an example in Figure 2.