

Introduction

Global Trade Item Numbers (GTINs) are encountered most frequently at retail point of sale and on inner packs, cases, and pallets of products in a distribution/warehouse environment. They are commonly used on purchase orders and in delivery and payment documents. The EAN (European Article Number) / UPC (Universal Product Code) are the most common symbologies used for the identification of retail items. This symbol reference is designed to allow quick access to technical information related to barcode sizing, both overall size and height to width ratios.

Printing Specifications

The ideal colors for the printing of barcodes are black bars on a white background. All colors of the red spectrum should be avoided for the creation of the bars due to the light source used for reading is red. Backgrounds should be uniform in color/opacity and devoid of any texture which can impact the code readability.

Magnification (X-Dimension)

The specified magnification (X-dimension) range for an UPC-A/E & EAN-8/13 Barcode is 80% - 200% (X-dimension 0.26mm - 0.66mm):

For automated scanning environments, the recommended size is 150% - 200% (X-dimension 0.50mm - 0.66mm). For example, in logistics which includes general distribution, warehousing, distribution centers and direct to store delivery (DSD).

Only for on demand print processes (e.g. direct thermal printing), the minimum magnification is 75% (X-dimension 0.25mm) and is applicable with the following qualifications:

- The bar height and the Quiet Zone must be equal to or greater than (\geq) the minimum requirements for an 80% magnification barcode.

Symbol Height

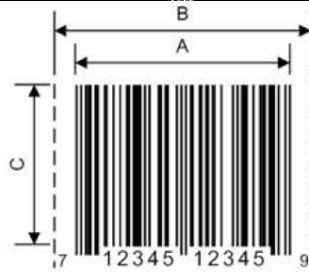
The symbol height must be equal to or greater than (\geq) the value required based on the magnification (X-dimension) of the symbol printed (e.g. a symbol printed at 80% magnification must have a bar height of 18.29mm or greater). Failure to do so will result in a "FAIL" symbol certification due to truncation.

Human Readable Interpretation

The Human Readable Interpretation (HRI) should be printed beneath the barcode and must show all of the digits encoded. The recommended typeface for the HRI is OCR-B (optical character recognition type 'B' (font)) with a height of 2.75mm at nominal size (100% magnification, X-dimension 0.33mm).

Note: OCR-B typeface is a recommendation only; alternative type fonts and character sizes are acceptable provided they are clearly legible.

UPC-A/EAN-13 Barcode Symbol Dimensions



In millimeters			
Magnification (X-Dimension)	A Bar to bar	B Incl. quiet zones	C Minimum bar height
80% (0.26mm)	25.08	29.83	18.29
90% (0.30mm)	28.22	33.56	20.57
100% (0.33mm)	31.35	37.29	22.86
120% (0.40mm)	37.62	44.75	27.43
160% (0.53mm)	50.16	59.66	36.58
200% (0.66mm)	62.7	74.58	45.72

UPC-E/EAN-8 Barcode Symbol Dimensions



In millimeters			
Magnification (X-Dimension)	A Bar to bar	B Incl. quiet zones	C Minimum bar height
80% (0.26mm)	13.46	17.69	18.29
90% (0.30mm)	15.15	19.9	20.57
100% (0.33mm)	16.83	22.11	22.86
120% (0.40mm)	20.2	26.53	27.43
160% (0.53mm)	26.93	35.38	36.58
200% (0.66mm)	33.66	44.22	45.72