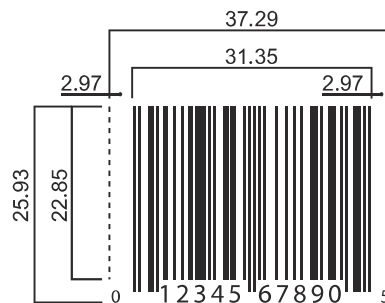




## 9.2.3 UPC-A Symbol Specifications

The UPC-A Bar Code is used to encode a GTIN-12 and can be scanned in both a retail POS and a General Distribution Scanning Environment.

**Note:** In regards to dimensions, the only difference between the EAN-13 and UPC-A Bar Codes is the minimum required Quiet Zones.



**Figure 9** UPC-A Bar Code at Nominal Size (100%)

### Magnification

The specified magnification range for a UPC-A Bar Code being scanned at retail POS is between 80% and 200% (X-dimension 0.26mm - 0.66mm).

An allowable minimum magnification of 75% (X-dimension 0.25mm) is applicable only to on demand (e.g. thermal) print processes. In this case, the bar height should never be truncated below the minimum required height for an 80% magnification bar code. 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 0.264 millimetre.

Where an item may also be scanned in a General Distribution Scanning environment (automated scanning), the allowable magnification range is 150% to 200% (X-dimension 0.50mm – 0.66mm).

### Human Readable Interpretation

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

With a UPC-A Symbol the first and last human readable digits are smaller than the other digits. Reduce the U.P.C. Prefix (first digit) and the Check Digit (last digit) to a maximum character width of 1.32mm, four module widths, at nominal size (100% magnification, X-dimension 0.33mm), and a height that is proportional to the modified width.

Locate the human readable number system character 1.65mm, five module widths, at nominal size (100% magnification, X-dimension 0.33mm) to the left of the guard bar pattern. Locate the human readable Check Digit 1.65mm, five module widths, at nominal size (100% magnification, X-dimension 0.33mm) to the right of the guard bar pattern.

Ensure that only the twelve digits encoded in the bar code are printed below it in the Human Readable Interpretation.



## 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). This shall also apply to the bars of the first and last symbol characters.

See Table 132 for height of bars at various X-dimensions.

## UPC-A Bar Code Dimensions

Magnification	X-dimension	Width	Bar Height	Left Quiet Zone	Right Quiet Zone
80%	0.26	25.08	18.28	2.38	2.38
85%	0.28	26.65	19.42	2.52	2.52
90%	0.30	28.22	20.57	2.67	2.67
95%	0.31	29.78	21.71	2.82	2.82
100%	0.33	31.35	22.85	2.97	2.97
105%	0.36	32.92	23.99	3.12	3.12
110%	0.36	34.49	25.14	3.27	3.27
115%	0.38	36.05	26.28	3.42	3.42
120%	0.40	37.62	27.42	3.56	3.56
125%	0.41	39.19	28.56	3.71	3.71
130%	0.43	40.76	29.71	3.86	3.86
135%	0.45	42.32	30.85	4.01	4.01
140%	0.46	43.89	31.99	4.16	4.16
145%	0.48	45.46	33.13	4.31	4.31
150%	0.50	47.03	34.28	4.46	4.46
155%	0.51	48.59	35.42	4.60	4.60
160%	0.53	50.16	36.56	4.75	4.75
165%	0.54	51.73	37.70	4.90	4.90
170%	0.56	53.30	38.85	5.05	5.05
175%	0.58	54.86	39.99	5.20	5.20
180%	0.59	56.43	41.13	5.35	5.35
185%	0.61	58.00	42.27	5.49	5.49
190%	0.63	59.57	43.42	5.64	5.64
195%	0.64	61.13	44.56	5.79	5.79
200%	0.66	62.70	45.70	5.94	5.94

**Note:** In the heading of this table, Width = Width of bar code excluding Quiet Zones,  
 Bar Height = Bar Height excluding guard bar patterns  
 It is recommended to always allow slightly more than the minimum required Quiet Zone to allow for any possible ink spread or registration issues.  
 All measurements are in millimetres.

**TABLE 132** UPC-A Bar Code Dimensions

