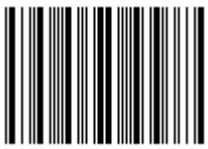
SOME COMMON LINEAR BAR CODE SYMBOLOGIES

Code 39

11111111

Structure:	2 widths of bar & space.
Density:	3.7 chars/cm at 0.191 mm, 9.8 chars/in at 0.0075 in
History:	One of the first Barcodes (Jan 1975)
Security:	Good, Self checking
Character Set:	Capital letters, numbers and a few other characters. A special variant allows for full ASCII set encodation.
Typical Applications:	Asset Tracking, Sample I/D, widely used.
Comments:	Long code for the quantity of data. This is a traditional industrial code.

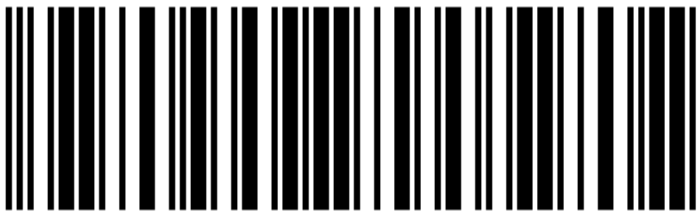
Codabar



a $ 1 2 3 4 5 b

Structure:	2 widths of bar & space (in simple implementation)
Density:	5.04 chars/cm at 0.191 mm, 12.8 chars/in at 0.0075 in
History:	Long established. (1972)
Security:	Good, Self checking
Character Set:	Numeric plus some special symbols. Start and stop characters are **a**,**b**,**c** or **d.**
Typical Applications:	Blood Banks, Photo-finishing, Libraries
Comments:	Some applications require 'concatenation' (joining 2 together), depending on the start characters.

Interleaved 2 of 5 (ITF)



01234567890123

Structure:	2 widths of bar & space. Two digits are interleaved with each other so a code always contains an even number of digits.
Density:	7.1 chars/cm at 0.191 mm, 18.0 chars/in at 0.0075 in
History:	Long established.
Security:	Poor .
Character Set:	Numeric only.
Typical Applications:	Distribution Industry. Retail outer cases. Sample tracking. Laundries.

Comments:	Very tolerant on line widths which make it ideal for low quality printing e.g. ink jet. Compact i.e. lots of data per cm. Greater potential for substitution errors (wrong data outputted) than other symbologies. Very weak start/stop characters ⇒ high chance of a partial scan. The data length must be configured in the decoder to avoid this. Beware of applications where two different code lengths are involved. Advise use of a different symbology.

UPC/EAN

Structure:	4 widths of bar & space.
Density:	Narrow bar of 100% size = 0.33 mm (0.013 in)
History:	Long established.
Security:	Good.
Character Set:	Numeric only.
Typical Applications:	Retail Products only.
Comments:	UPC (Uniform Product Code) used in the US. 7 or 12 digit. EAN (European Article Numbering) used in Europe. 8 or 13 digit. Reserved applications. Codes are issued by the ANA (Article Numbering Association). Requires high quality printing.

Code 128

Structure:	4 widths of bar & space.
Density:	4.77 chars/cm at 0.191 mm, 12.12 chars/in at 0.0075 in Single Density.
History:	Relatively new (1981)
Security:	Very Good. Strong start/stop characters and mandatory check digit.
Character Set:	Full ASCII set. Double density numeric only (subset C) available, which is very space efficient.
Typical Applications:	Replacing Code 39 in many industrial applications.
Comments:	Very good symbology, becoming increasingly popular. Requires high quality printing.

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All Barcodes are Bi-directional i.e. they can be scanned in either direction.
They are all variable length with the exception of UPC/EAN.
.191mm (.0075in) is the smallest Narrow Bar dimension recommended in the symbology guides however they are sometimes printed down to .15mm and lower.

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