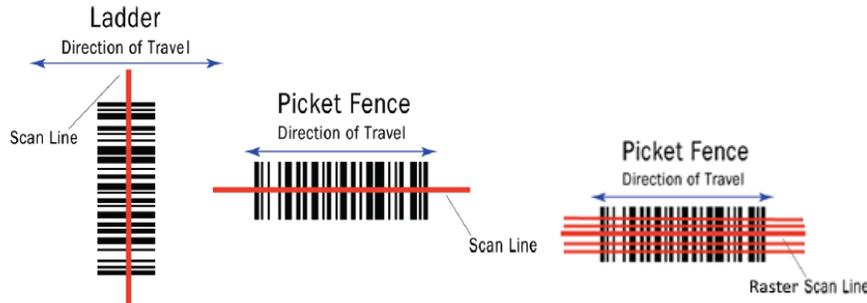


Scanner Decode Speed for a Label in Motion

A label's orientation is commonly referred to as either "ladder" or "picket fence." This is a case where a picture is worth a thousand words:



Ladder Orientation: In general, if the label size and speed allow it, the ladder orientation is preferable since the scanner will be scanning different portions (top to bottom) of the label as it goes by. Also, label placement is not as critical. As the illustration shows above, the 'ladder-oriented' label may be successfully read if placed anywhere within the "scan line."

Picket Fence Orientation: Picket-fence orientation usually has the disadvantage of only allowing a small portion of the entire label to be scanned. If the label is of questionable quality, or if an ink spot or void is present at the scanned portion of the label, the scanner may not read it. In addition, label placement is critical, especially when using very narrow bar codes. Using a fixed raster line type scanner is recommended in this orientation because it will scan different areas of the bar code as it travels by the scanner. Another way to minimize this problem is to use "angled" picket fence by tilting the scan line.

Although a scanner can successfully read a bar code in two scans, experts generally recommend a minimum of five scans to read a well printed label reliably. The following formulas are useful for calculating how many actual guaranteed scans will occur given any combination of label size, speed, and orientation.

Ladder Orientation Formula

If the bar code label is presented to the scanner in a ladder orientation, the number of scans for each pass can be determined from the following parameters:

LH = label height (inches)
 LS = label speed (inches/second)
 Scan rate = scans/second (specified by manufacturer)
 The following equation is used:

$$\left(\frac{LH}{LS} * Scan Rate\right) - 2 = Number\ of\ complete\ scans$$

Time on a symbol is calculated as: (# of seconds per 1" of travel) * (Effective Height in inches of the bar code)

The "- 2" factor in this equation is to compensate for incomplete first and last scans. If the result of the calculations in the brackets is 3 or more, - 2 applies. However, if it is only 2, subtract 1, giving one good scan.

Picket Fence Orientation Formula

If bar code labels are presented to the scanner in a picket fence orientation, the number of scans for each pass of a label can be determined from the following parameters:

LL = label length
 SW = effective/usable scan width (inches) of the scanner's laser line
 LS = label speed (inches/second)
 Scan rate = scans/second of the scanner (specified by manufacturer)

$$\left(\frac{SW - LL}{LS} * Scan Rate\right) = Number\ of\ complete\ scans$$

Time on a symbol is calculated as: (# of seconds per 1" of travel) * (Scan Rate) * (SW-LL)