What to Consider...
Which Scanner To Choose & What To Consider:

Based on 3 basic criteria

• Size
• Speed
• Reading Distance
What to Consider

Bar Code Label Orientation

Stationary

“Ladder” Orientation
(Bars parallel to direction of travel)

“Picket Fence” Orientation
(Bars perpendicular to direction of travel)

Omni Directional
(Bar code in a 360° orientation)
What to Consider

Bar Code Systems

Scanning Options

Line
(“Ladder”)

Raster
(“Picket Fence” or Stationary)

Oscillating Mirror

Omni Directional

Movement
What to Consider

Bar Code Systems

Line

Raster

Reading Gate

Reading Gate
What to Consider

Oscillating Mirror

Omni Directional
(Birds eye view)
Bar Code Placement
(Where on the product is it consistent?)
Bar Code Size

Length

Height
Remember to ensure scan height / window is sufficient to cover the whole code including a tolerance for position variation.
What to Consider

Product Characteristics

Product Spacing
(Prevent scan pattern overlap)

Product Size

H  W

L
What to Consider

Scan Speed vs. Product Velocity

Higher Scan speed means more scans through the code.

If scan speed doesn’t match transport speed, insufficient scans of code means poor performance.
Number of Scans Calculation

**Ladder Orientation**

\[(H \div V) \times \text{Scan Freq.} = \text{Number of complete scans}\]

\[H = \text{Bar Height}\]
\[V = \text{Label Velocity (in sec.)}\]

**Picket Fence Orientation**

\[((W - L) \div V) \times \text{Scan Freq.} = \text{Number of complete scans}\]

\[W = \text{Scan Width}\]
\[L = \text{Label Width}\]
\[V = \text{Label Velocity (in sec.)}\]
What to Consider

Reading Range Terminology

Limiting Factors
- Bar Code Quality
- X - Dimension
- Proximity to Scanner
Variable Depth of Field
Mounting a Laser Scanner
(Skew Angle)

Angle set to 10 - 15 Degrees to avoid glare
What to Consider

Bar Code Systems

Tilt

Pitch
What to Consider

Application Variables - Specifying a Scanner

- Line Speed - M/sec
- Code Type
- Code Orientation
- Overall Code Size
- Bar Width Size
- Minimum/Maximum Distance (Depth of Field)
- Position of Code

M/sec

Min Dist
Max Dist
Technical Questionnaire

This questionnaire will assist you in planning the implementation of a bar code reading system. (Please copy the form as required)

Date:__________________________      Company:___________________________
Customer Name:________________       Branch:___________________________
Phone:________________________       City:___________ State:_____ Zip:_____
Address:____________________________

APPLICATION NOTES

Description:_________________________
___________________________________
___________________________________
___________________________________
___________________________________

BAR CODE READING SYSTEM REQUIREMENTS

Label Orientation

Picket Fence Ladder

Direction of Movement

Pitch Tilt Skew

Max: Max: Max:

BAR CODE LABEL SPECIFICATIONS

Symbology:___________________________
Number of Characters:__________________
Label Length:_________________________

BAR CODE LABEL SPECIFICATIONS

Bar Color:___________________________
Label Color:_________________________
Label Material:_______________________
Minimum Bar Width (X-Dimension):_______

INTERFACE

Type of Trigger

Hardware

Baud Rate

Discrete Outputs

ASCII String

Cable Length

Host Device

RS 232: 9600

PNP

Relay

RS 422/485

ASCII Command String

Command String

OR

SICK Opto-Electronic

1 612 844 8765

TRANSPORTATION AND CONVEYOR SYSTEM

Product Length:_______________________
Product Height:_______________________
Product Width:_______________________
Minimum Product Spacing:__________________________

Mark Label Position on Boxes:__________________________
Number of Bar Codes Per Reading Gate:__________________
The End of “What to Consider...”