

Hand-Held Bar Code Scanners



(Catalog Numbers 2755-HCG-4, -HCG-7, HDG-4, -HTG-4, -HUG-4, -HUG-9)

Product Data

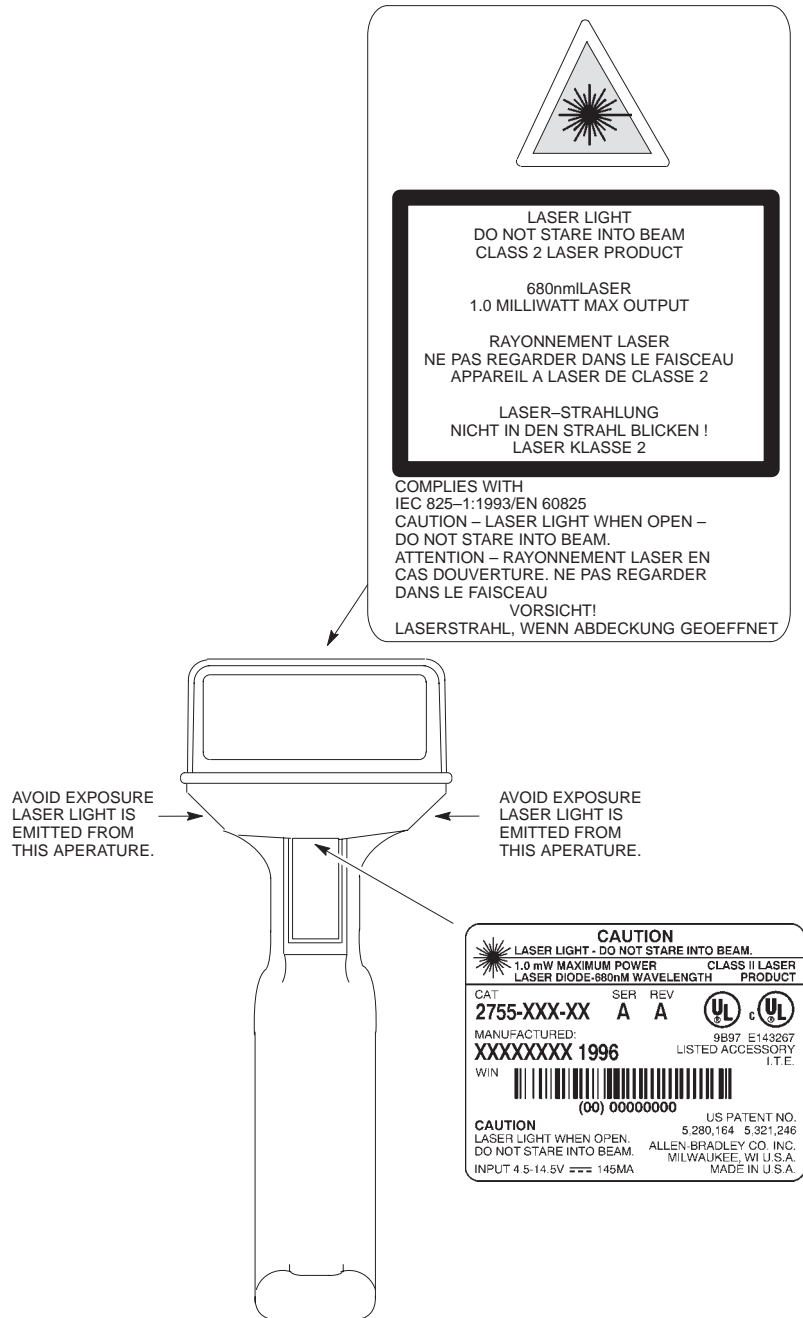


With the addition of cordless hand-held scanners (which can scan up to 50 feet from your host) and a two dimensional/decoded scanner capable of scanning one dimensional and PDF 417 (Portable Data File 417) two dimensional bar code symbols, Allen-Bradley's decoded and undecoded scanners represent the latest in industrial hand-held bar code scanner technology. Designed for use in shop floor environments, the new features and innovations of these scanners bring enhanced bar code reading performance to pre-existing and new Allen-Bradley bar code installations.

Safety Labels

The scanners use a low power visible laser diode. As with any bright light source, you should avoid staring directly into the beam. Momentary exposure to a CDRH Class II laser is not known to be harmful.

The following figure shows the location of all safety labels as they appear on the scanner.



Cordless Hand-Held Bar Code Scanners (Catalog Numbers 2755-HCG-4 and -HCG-7)

These new cordless bar code scanners allow you to scan items up to 50 feet from the base unit without a cable. The scanners use unlicensed low-power radio frequency (RF) transmission to communicate with your host computer. Because there is no cable or restraints, they make tough jobs go faster, smoother and easier.

Universal Interface Base

The universal interface base allows you to connect to many popular PC's, and computer terminals for easy integration into your existing data collection environment.

Rechargeable Batteries

The batteries can be charged within two hours, with each charge yielding a minimum of eight hours of operating time. Batteries can be charged in the scanner or removed and charged separately to maximize scanner utilization.

Power Down Circuitry

The scanner turns itself off to conserve battery power.

Scanning Ranges

The scanners can read bar code symbols at various distances depending upon the type of scanner and narrowest bar code width (width of smallest bars or spaces).

Catalog No. 2755-HCG-4

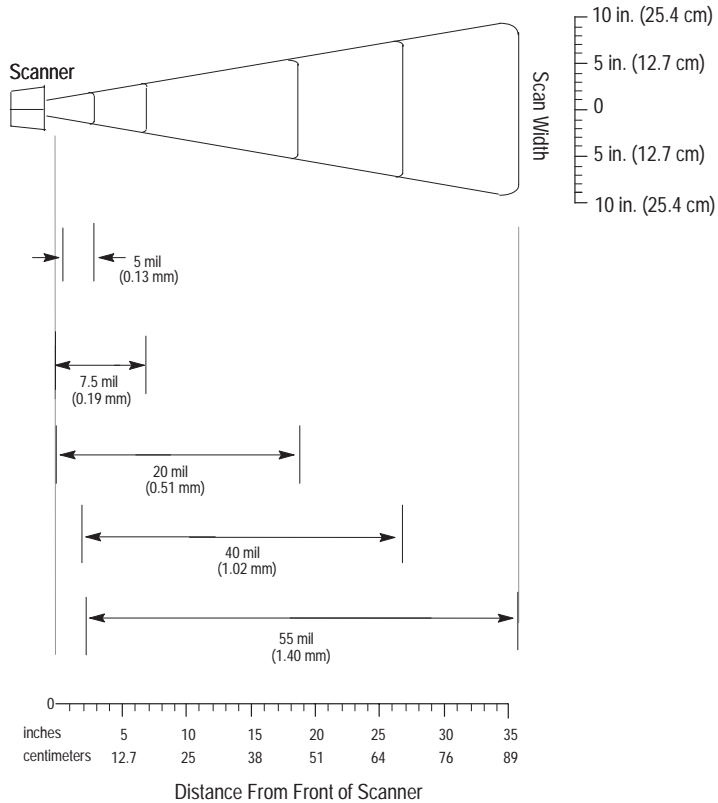
Minimum Bar Code Width	Read Range
5.0 mil (0.13 mm)	1.0 in. to 3.0 in. (2.5 cm to 7.6 cm)
7.5 mil (0.19 mm)	0.0 in. to 7.0 in. (0.0 cm to 17.8 cm)
20.0 mil (0.51 mm)	0.0 in. to 19.0 in. (0.0 cm to 48.3 cm)
40.0 mil (1.02 mm)	2.0 in. to 27.5 in. (5.1 cm to 69.9 cm)
55.0 mil (1.40 mm)	2.75 in. to 35.0 in. (7.0 cm to 88.9 cm)

Catalog No. 2755-HCG-7

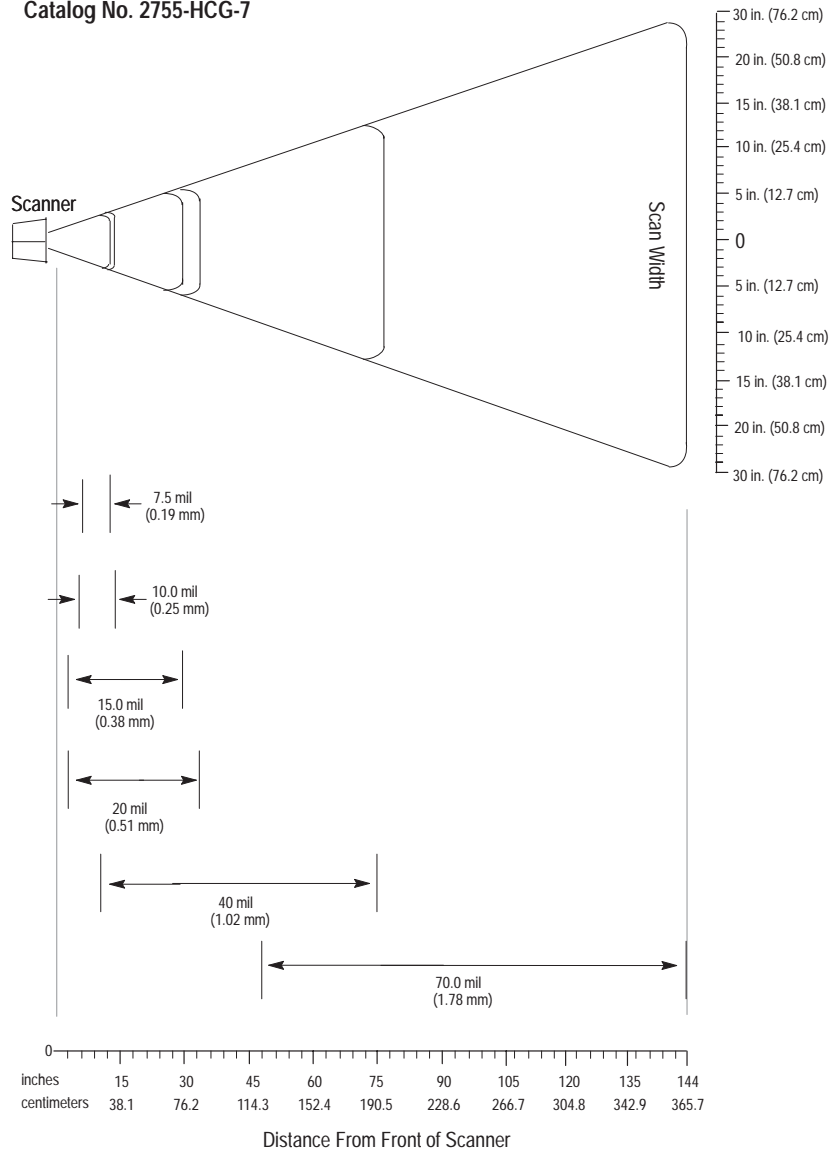
Minimum Bar Code Width	Read Range
7.5 mil (0.19 mm)	7.0 in. to 12.0 in. (17.8 cm to 30.5 cm)
10.0 mil (0.25 mm)	5.0 in. to 15.0 in. (12.7 cm to 38.1 cm)
15.0 mil (0.38 mm)	3.0 in. to 30.0 in. (7.62 cm to 76.2 cm)
20.0 mil (0.51 mm)	3.0 in. to 34.0 in. (7.62 cm to 86.4 cm)
40.0 mil (1.02 mm)	10.0 in. to 75.0 in. (25.4 cm to 190.5 cm)
70.0 mil (1.78 mm)	48.0 in. to 144.0 in. (121.9 cm to 365.7 cm)

Standard Range Scanner

Catalog No. 2755-HCG-4



Long Range Scanner
Catalog No. 2755-HCG-7



Decoded Hand-Held Bar Code Scanner (Catalog Number 2755-HDG-4)

This new decoded hand-held scanner utilizes the latest “fuzzy logic” decoding to improve first time read rates across a range of bar code symbol densities and print qualities.

Better Read Rates

Advanced laser spot shaping techniques and “fuzzy logic” decoding improves overall read rates. Intelligence inside the scanner’s electronics automatically adjusts video return signal processing to achieve maximum read rates. “Fuzzy logic” decoding automatically improves first read rate performance by compensating for low print contrast and symbol imperfections.

Brighter Scan Line

The scanner uses a 675nm Visible Laser Diode. The result is a brighter scan line as compared to the older family of hand-held scanners. The brighter beam simplifies the task of finding the bar code while eliminating the need for costly spotter beam options.

Multiple Interface Options

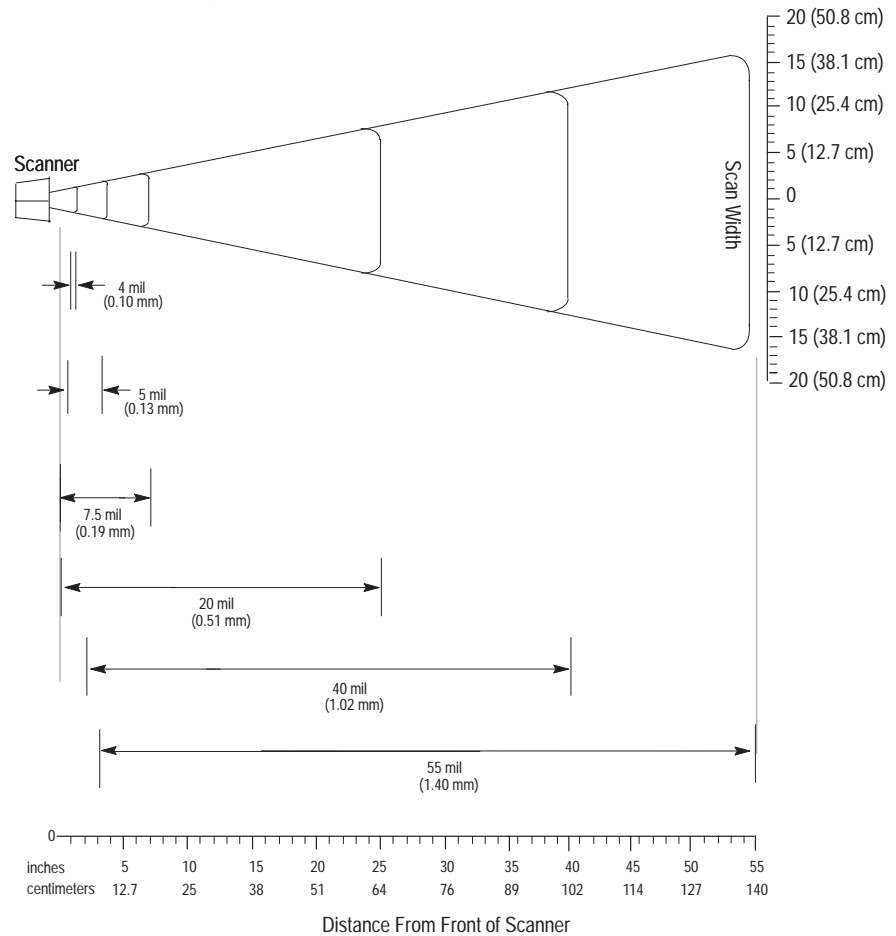
The scanner (Catalog Number 2755-HDG-4) uses various Synapse™ connections that allow the scanner to communicate using simple ASCII protocol to RS232 host serial ports or in wedge mode directly to keyboard interface ports. There is also a scanner emulation Synapse that allows the scanner to communicate directly to scanner input ports of various bar code decoders. When connected to the serial port of an AdaptaScan™ Reader on a DeviceNet Master/Slave network, decoded data from the scanner can be “passed through” to the DeviceNet network.

Scanning Ranges

The scanner can read bar code symbols at various distances depending upon the bar code width (width of bars or spaces).

Minimum Bar Code Width	Read Range (Catalog No. 2755-HDG-4) Inches / Centimeters
4.0 mil (.13 mm)	1.5 in to 2.0 in (3.8 cm to 5.1 cm)
5.0 mil (.13 mm)	1.25 in to 3.25 in (3.2 cm to 8.2 cm)
7.5 mil (.19 mm)	0.0 in to 7.0 in (0.0 cm to 17.8 cm)
20.0 mil (.51 mm)	0.0 in to 25.0 in (0.0 cm to 63.5 cm)
40.0 mil (1.02 mm)	2.0 in to 40.0 in (5.1 cm to 101.6 cm)
55.0 mil (1.40 mm)	3.0 in to 55.0 in (7.6 cm to 140 cm)

**Standard Read Range for Decoded Scanner
(Catalog Number 2755-HDG-4)**



**Two Dimensional/Decoded
Hand-Held Bar Code
Scanner (Catalog Number
2755-HTG-4)**

The two dimensional/decoded scanner scans and decodes standard one dimensional bar code symbols and the PDF 417 two dimensional bar code symbol.

Decoding Capability

PDF 417 is a bar code symbology that allows the user to encode more information on a product or item than traditional bar code systems. An inexpensive portable data base can be encoded into the PDF 417 symbol to provide instant and low-cost access to detailed information concerning an item's assembly, shipping, testing, tracking or repair information. The possibilities are virtually endless! Up to 1 kilobyte of data can be encoded in a PDF 417 symbol. Redundancy can also be encoded into the PDF 417 symbol that enables the scanner to read and decode the data even when portions of the symbol are damaged or destroyed.

Allen-Bradley Parts

Multiple Interface Options

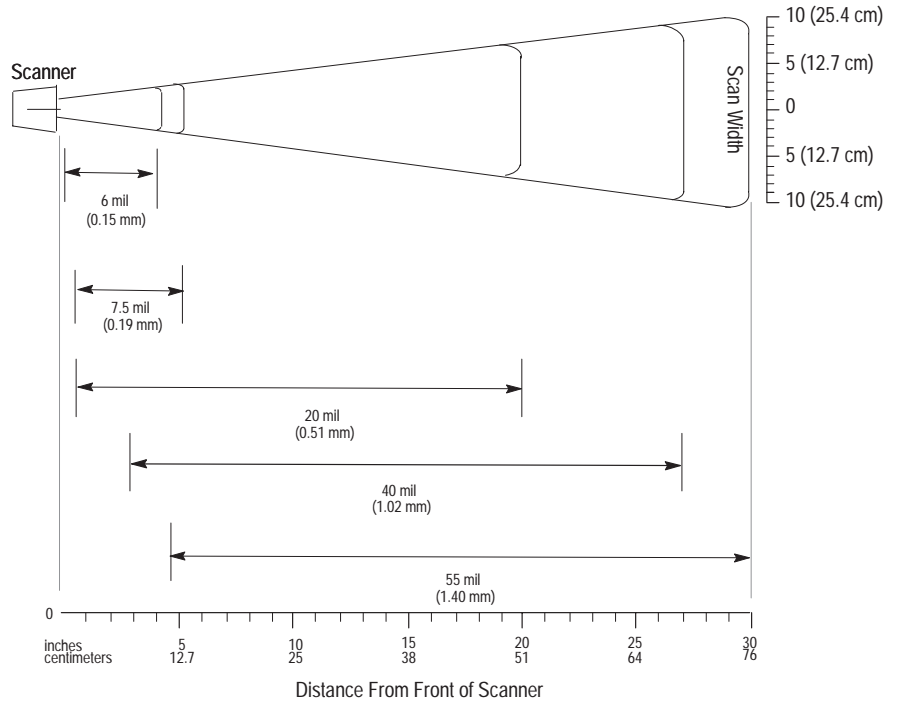
The scanner (Catalog Number 2755-HTG-4) uses various Synapse connections that allow the scanner to communicate using simple ASCII protocol to RS232 host serial ports or in wedge mode directly to keyboard interface ports. There is also a scanner emulation Synapse that allows the scanner to communicate directly to scanner input ports of various bar code decoders.

Scanning Ranges

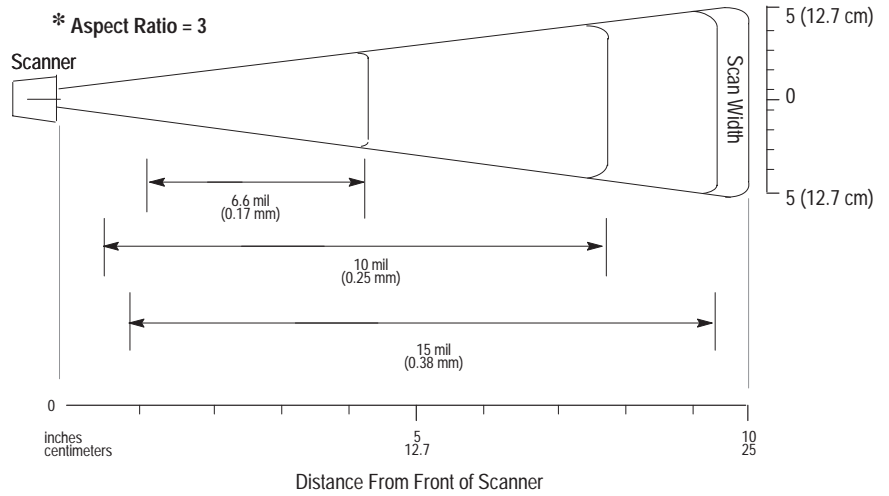
The scanner can read bar code symbols at various distances depending upon the bar code width (width of bars or spaces).

Minimum Bar Code Width	Read Range (Catalog No. 2755-HTG-4) Inches / Centimeters
One Dimensional Bar Codes	
6.0 mil (.15 mm)	2.0 in to 7.0 in (5.1 cm to 17.8 cm)
7.5 mil (.19 mm)	2.0 in to 8.0 in (5.1 cm to 20.3 cm)
20 mil (.51 mm)	2.5 in to 13 in (6.35 cm to 33.0 cm)
40 mil (1.02 mm)	2.5 in to 23 in (6.35 cm to 58.4 cm)
55 mil (1.40 mm)	2.5 in to 30 in (6.35 cm to 76.2 cm)
Two Dimensional Bar Codes	
6.6 mil (.17 mm)	1.5 in to 5.5 in (3.8 cm to 14.0 cm)
10 mil (.25 mm)	1.25 in to 9.0 in (3.2 cm to 22.9 cm)
15 mil (.38 mm)	1.5 in to 11.5 in (3.8 cm to 29.2 cm)

One Dimensional Read Range Capability for Two Dimensional/Decoded Scanner (Catalog Number 2755-HTG-4)



PDF 417* Read Range Capability for Two Dimensional/Decoded Scanner (Catalog Number 2755-HTG-4)



Undecoded Hand-Held Bar Code Scanners (Catalog Numbers 2755-HUG-4 and -HUG-9)

These hand-held scanners are backward compatible to all previous Allen-Bradley decoders.

Better Read Rates

Advanced laser spot shaping techniques improves overall read rates. Intelligence inside the scanner's electronics automatically adjusts video return signal processing to achieve maximum read rates on a wide variety of symbol dimensions at varying read distances. These processing techniques also improve read rates on poorly printed surfaces.

Brighter Scan Line

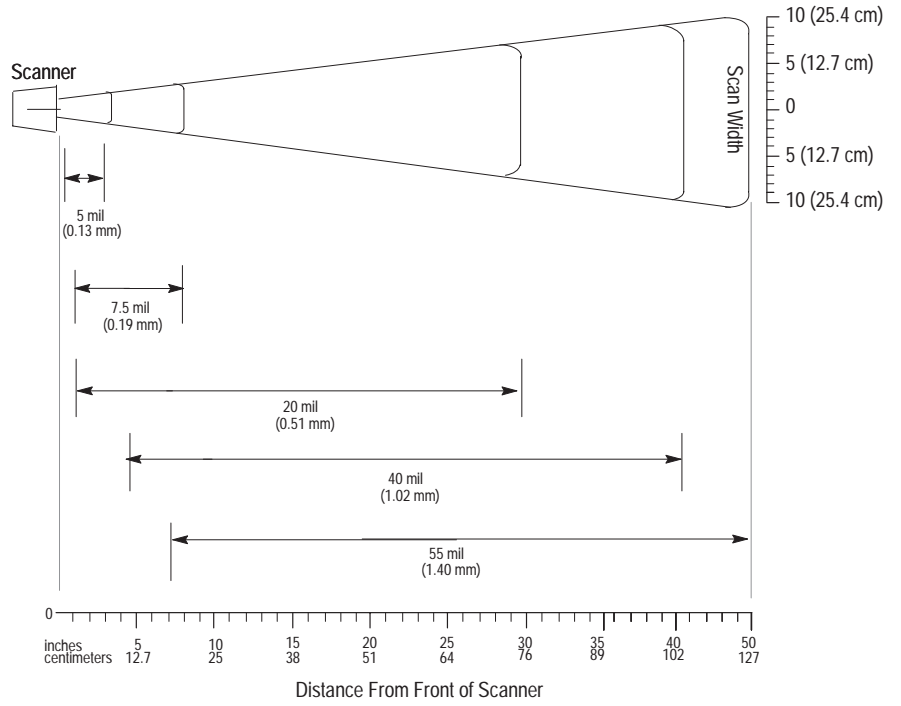
The scanner uses a 675nm Visible Laser Diode. The result is a brighter scan line as compared to the older family of hand-held scanners. The brighter beam simplifies the task of finding the bar code. In addition, the Extended Range Scanner (Catalog Number 2755-HUG-9) incorporates a spotter beam which is useful for the long range reads.

Scanner Ranges

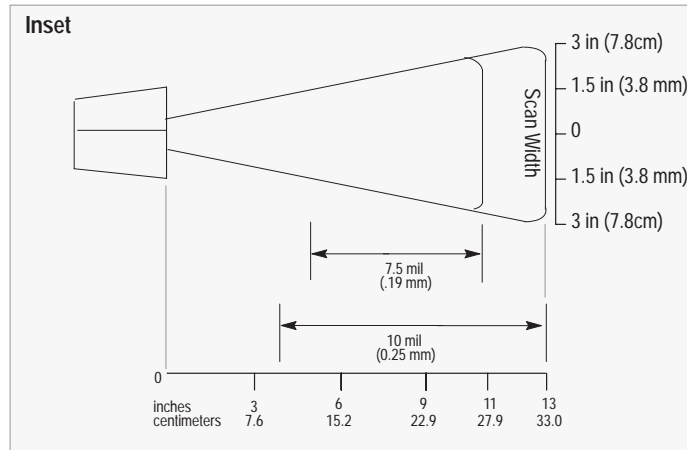
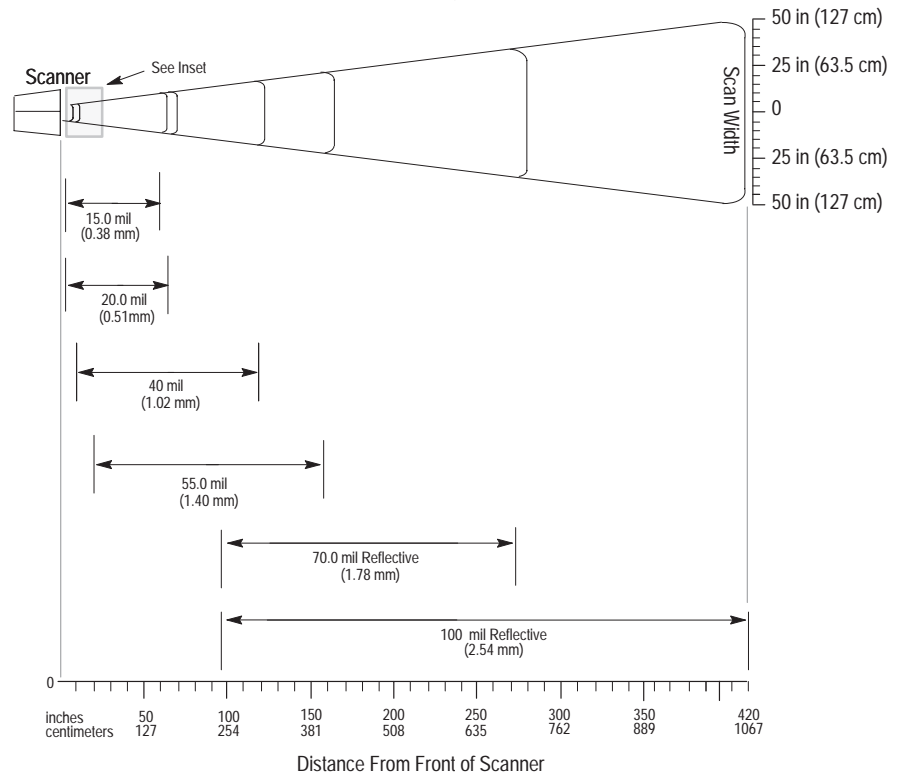
The scanners can read bar code symbols at various distances depending upon the bar code width (width of bars or spaces). The following table lists the read ranges for both the standard and extended range scanners.

Minimum Bar Code Width	Standard Range (Catalog No. 2755-HUG-4) Inches / Centimeters	Extended Range (Catalog No. 2755-HUG-9) Inches / Meters
5.0 mil (.13 mm)	1.25 in to 2.7 in (3.2 cm to 6.9 cm)	Not Applicable
7.5 mil (.19 mm)	1.0 in to 7.0 in (2.5 cm to 17.8 cm)	5.0 in to 11 in (0.13 m to 0.28 m)
20.0 mil (.51 mm)	1.0 in to 27 in (2.5 cm to 69 cm)	5.0 to 65 in (0.13 m to 1.65 m)
40.0 mil (1.02 mm)	4.5 in to 37 in (11.4 cm to 94 cm)	14 in to 120 in (0.36 m to 3.05 m)
55.0 mil (1.40 mm)	7 in to 50 in (17.8 cm to 127 cm)	24 in to 156 in (0.61 m to 3.96 m)
70.0 mil (1.78 mm) Reflective	Not Applicable	96 in to 276 in 2.43 m to 7.01 m
100 mil (1.02 mm) Reflective	Not Applicable	96 in to 420 in (2.44 m to 10.67 m)

Standard Read Range Capability for Uncoded Scanner (Catalog Number 2755-HUG-4)



Extended Read Range Capability for Uncoded Scanner (Catalog Number 2755-HUG-9)

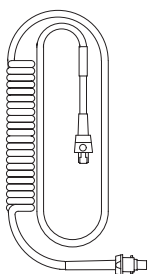


Accessories

The following accessories are available. For cable connections refer to Publications 2755-6.1, -6.2, -6.3 and -6.4.

Scanner Cables – Connect decoded scanner to Synapse cable.

- 8 ft. / 2.44 meter (for use with Catalog No. 2755-HDG-4) (Catalog No. 2755-HDC-GS1-08)
- 20 ft. / 6.1 meter (for use with Catalog No. 2755-HDG-4) (Catalog No. 2755-HDC-GS1-20)
- 8 ft. / 2.44 meter (for use with Catalog No. 2755-HTG-4) (Catalog No. 2755-HTC-GS1-08)

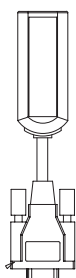
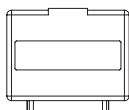


Scanner Cables – Connect undecoded scanner to decoder.

- 8 ft. / 2.44 meter (Catalog No. 2755-HUC-GA1-08)
- 15 ft. / 4.5 meter (Catalog No. 2755-HUC-GA1-15)
- 20 ft. / 6.1 meter (Catalog No. 2755-HUC-GA1-20)

RS-232 Synapse Cables – Provide RS-232 output. Cables are configurable. (For use with Catalog Nos. 2755-HDG-4 and -HTG-4.)

- RS-232-C, 25-pin DB, male, Txd on Pin 3 (Catalog No. 2755-HFC-SR2-01)
- RS-232-C, 9-pin DB, female, Txd on Pin 2 (Catalog No. 2755-HFC-SR3-01)



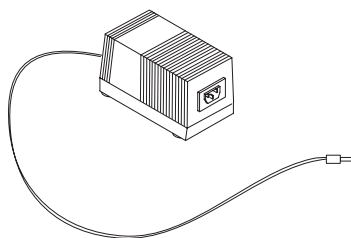
Power Supplies

Connect to RS-232, keyboard wedge or scanner emulation Synapse cable. Provides power for the scanner ①.

- 100-240 VAC, 50/60 Hz (Catalog No. 2755-HFP-D1)

Connect to Cordless Scanner RS-232 or keyboard wedge cable. Provides power for the scanner.

- 100-240 VAC, 50/60 Hz (Catalog No. 2755-HCP-F1)

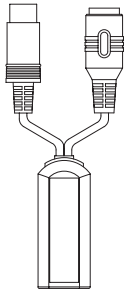


① Some applications may not require a power supply when the host provides adequate power for the scanner. This ability of the host to power the scanner will vary with system configurations. The scanner with cable requires 150 mA at 5 volts (typical).

Allen-Bradley Parts

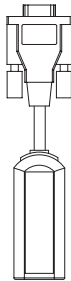
Accessories (continued)

Keyboard Wedge Synapse Cables – Connects between keyboard and host device. Host device receives decoded bar code data the same as keyboard input. (For use with Catalog Nos. 2755-HDG-4 and -HTG-4.)



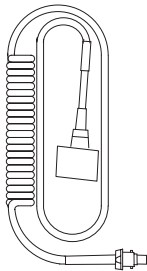
- For IBM XT/AT keyboard, 5-pin DIN (Catalog No. 2755-HFC-SP1-01)
- For PS/2 keyboard, 6-pin Mini-DIN (Catalog No. 2755-HFC-SP2-01)
- For DEC VT220, 320, 420 keyboards (Catalog No. 2755-HFC-SV1-01)
- For DEC VT520 keyboards (Catalog No. 2755-HFC-SV2-01)

Scanner Emulation Synapse Cable – Provides undecoded scanner output. (For use with Catalog Nos. 2755-HDG-4 and -HTG-4.)



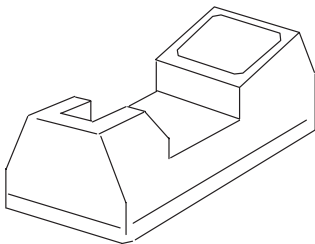
- (Catalog No. 2755-HFC-SA1-01)

AdaptaScan Pass Through Cable – Connects decoded scanner (Catalog No. 2755-HDG-4) to custom cable for connection to AdaptaScan RS-232 terminal block.



- RS-232-C, 25-pin DB, male, Txd on Pin 3 (Catalog No. 2755-HDC-GA2-08)

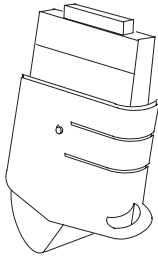
Cordless Base Unit and Base Cables – Base unit communicates to cordless scanner via RF and to a host via different cables. Base unit also recharges the battery pack while in the scanner.



- Base Unit (Catalog No. 2755-HCG-B)
- RS-232-C, 25-pin DB, male, Txd on Pin 2 (Catalog No. 2755-HCC-BR1-06)
- RS-232-C, 25-pin DB, male, Txd on Pin 3 (Catalog No. 2755-HCC-BR2-06)
- Wedge Cable for IBM XT/AT keyboard, 5-pin DIN (Catalog No. 2755-HCC-BP1-06)
- Wedge Cable for IBM PS2 keyboard, 6-pin DIN (Catalog No. 2755-HCC-BP2-06)
- Wedge Cable for DEC VT220, 320 and 420 keyboards (Catalog No. 2755-HCC-BV1-06)

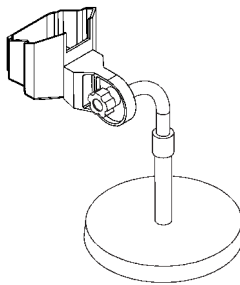
Accessories (continued)

Cordless Battery Packs and Charger – Can exchange cordless scanner batteries and deep charge them at the same time.



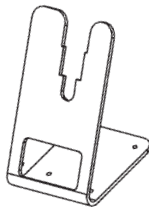
- Battery Pack (Catalog No. 2755-HCP-B1)
- 4-Slot Rapid Battery Charger (Catalog No. 2755-HCP-B2)
- Battery Mounting Adapter (Catalog No. 2755-HCP-B3)

Adjustable Stands – Provide hands-free operation. When placed into the stand, the scanner automatically turns on and remains on in a blinking mode. Any symbol passed under the scan line is decoded. Has separate adjustments for scanner angle and height. (For use with Catalog Nos. 2755-HDG-4 and -HUG-x.)

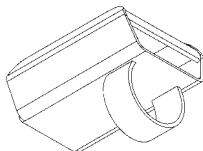


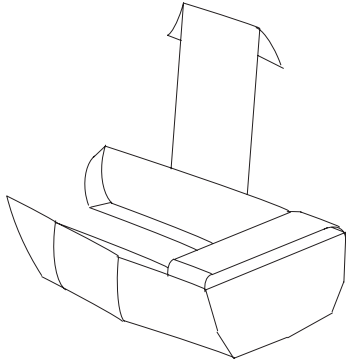
- 5 to 18 inch (127 to 457 mm) height (Catalog No. 2755-HFN-K1)
- 9 to 16 inch (229 to 406 mm) height (Catalog No. 2755-HFN-K2)

Standard Stand – Fixed mount holder for undecoded and decoded scanners. (Catalog No. 2755-HFN-K3).



Protective Boot – Heavy canvas boots (Catalog Nos. 2755-HCN-H1, -HFN-H1 and -HTN-H1) provide additional protection for the scanner.



Accessories (continued)

Carrying Options – A holster and a belt clip are available to allow easy carrying of the scanners.

- Holster for undecoded, decoded (Catalog No. 2755-HDG-4) and cordless scanners (Catalog No. 2755-HCN-H2)
- Belt clip for all scanners (Catalog No. 2755-HCN-H3)

Replacement Scan Window Housings.

- Replacement Canopy and Window Kit for Catalog Nos. 2755-HUG-x and -HDG-x (Part No. 77125-896-01)
- Replacement Canopy and Window Kit for Catalog No. 2755-HCG-4 (Part No. 77125-896-02)
- Replacement Canopy and Window Kit for Catalog No. 2755-HTG-4 (Part No. 77125-896-03)

Specifications

Catalog Number	2755-HCG-4, -HCG-7	2755-HDG-4	2755-HTG-4	2755-HUG-4, -HUG-9
Light Source	675nm Laser Diode			
Scan Rate	36 (+/-3) from normal	36 (+/-3) from normal	560 scans per second	36 (+/-3) from normal
Yaw	+/-60° from normal	+/-60° from normal	—	+/-60° from normal
Skew	+/-55° from normal (-HCG-4) +/-60° from normal (-HCG-7)	+/-10° from normal	—	+/-10° from normal (-HUG-9) +/-40° from normal (-HUG-4)
Pitch	+/-65° from normal (-HCG-4) +/-60° from normal (-HCG-7)	+/-50° from normal	—	+/-55° from normal
PDF417 Optical Contrast	—	—	6.6 mil/0.17 mm minimum NBW, 3X minimum aspect ratio	—
Minimum Print Contrast	—	—	25% (1-D Symbologies), 35% (PDF 417) @ 675 nm	—
Symbologies	Code 39, Code 128, EAN 128, Interleaved 2 of 5, Discrete 2 of 5, UPC/EAN (including supplements), MSI/Plessey, Codabar	Code 39, Code 128, EAN 128, Interleaved 2 of 5, Discrete 2 of 5, UPC/EAN (including supplements), MSI/Plessey, Codabar	PDF 417, Code 39, Code 128, EAN 128, Interleaved 2 of 5, Discrete 2 of 5, UPC/EAN (including supplements), MSI/Plessey, Codabar	Code 39, Code 128, EAN 128, Interleaved 2 of 5, Discrete 2 of 5, UPC/EAN (including supplements), MSI/Plessey, Codabar
Scanner Compatibility	2755-HCG-4 and -HCG-7 are direct replacements for the 2755-G3-D and -G6-D decoded scanners and the 2755-G3-W and -G6-W wedge interface, decoded scanners	2755-HDG-4 is a direct replacement for the 2755-G3-D and -G6-D decoded scanners and the 2755-G3-W and -G6-W wedge interface, decoded scanners	2755-HTG-4 is a direct replacement for the 2755-G3-D and -G6-D decoded scanners and the 2755-G3-W and -G6-W wedge interface, decoded scanners	2755-HUG-4 is a direct replacement for the 2755-G1, -G5 and -G3 undecoded scanners. 2755-HUG-9 is a direct replacement for the 2755-G6
Decoder Compatibility	Enhanced Decoder Family 2755-DS/DD AUX Port only (decoded mode)	Enhanced Decoder Family 2755-DS/DD Scan Port with Scanner Emulation Synapse Cable Enhanced Decoder Family 2755-DS/DD AUX Port (decoded mode) AdaptaScan Serial Port for DeviceNet pass-through (decoded mode)	Enhanced Decoder Family 2755-DS/DD Scan Port with Scanner Emulation Synapse Cable Enhanced Decoder Family 2755-DS/DD AUX Port (decoded mode)	Allen-Bradley 2755-DH1, and 2755-DH5, Enhanced Decoder Family 2755-DS/DD using the 2755-NC16 connected to Scan Port A or B
RS232 Interface	DB25M Data Communication Equipment or DB25M Data Terminal Equipment	Synapse DB25M Data Terminal Equipment or DB9F Data Communication Equipment	Synapse DB25M Data Terminal Equipment or DB9F Data Communication Equipment	—
Keyboard Wedge Interface Systems	IBM XT/AT, IBM PS/2, DEC VT200, 300 and 400 series terminals	IBM XT/AT, IBM PS/2, DEC VT200, 300 and 400 series terminals and DEC VT510 and 520 terminals	IBM XT/AT, IBM PS/2, DEC VT200, 300 and 400 series terminals and DEC VT510 and 520 terminals	—

Table continued on next page.

Allen-Bradley Parts

Specifications (continued)

Catalog Number	2755-HCG-4, -HCG-7	2755-HDG-4	2755-HTG-4	2755-HUG-4, -HUG-9
Laser Class	CDRH Class II, BSI, IEC 825 Class 2			
Electrical Certification	UL, CSA, VDE and CE			
Operating Temp.	32 to 104°F (0 to 40°C)	-22 to 122°F (-30 to 50°C)	-4 to 104°F (-20 to 40°C)	-22 to 122°F (-30 to 50°C)
Storage Temp.	-40 to 140°F (-40 to 60°C)			
Voltage	4.8 to 14V DC	4.8 to 14V DC	4.8 to 14V DC	—
Current	150mA	150mA	110mA	—
Weight	8.5 ounces (240g) without cable	8.5 ounces (240g) without cable	9.0 ounces (255g) without cable	8.5 ounces (240g)

Allen-Bradley Parts

Synapse™ is a trademark of Symbol Technologies Inc.
AdaptaScan™ is a trademark of Allen-Bradley Company, Inc.



Allen-Bradley, a Rockwell Automation Business, has been helping its customers improve productivity and quality for more than 90 years. We design, manufacture and support a broad range of automation products worldwide. They include logic processors, power and motion control devices, operator interfaces, sensors and a variety of software. Rockwell is one of the world's leading technology companies.

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