

# ES4650

## Embedded Imager Scanner



- ✓ Compact design and plug-and-play interfaces allow easy integration into different host devices
- ✓ Read all common 1D/2D barcodes from paper labels and electronic screens
- ✓ Megapixel image delivers better performance in decoding hard-to-read barcodes
- ✓ Advanced image induction technology ensures rapid induction of barcodes, even through a transparent lens in front of the scanning window
- ✓ Support external and serial trigger modes
- ✓ Soft white auxiliary lighting and green aiming cursor deliver comfortable and convenient scanning experience



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## Mechanical

Dimensions	43.5mm × 41.0mm × 19.0mm (H x W x D)
Weight	68g (without cable)
Indicator	Beeper
Interface	USB, USB Virtual COM, RS232 (3.3V TTL-level)
Trigger mode	Hand-held, Auto-detection, Command
Programming method	Manual or Command

## Performance

Image size	1280 x 800 pixels
Scanning angles	±70°, ±72°, 360° (Skew, Pitch, Roll)
Minimum element width	HD: 1D (Code 39): 3 mil , 2D (QR): 5 mil SR: 1D (Code 128): 4 mil , 2D (PDF417): 6.7 mil
Decode capability	1D: UPC-A, UPC-E, UPC-E1, EAN-13, EAN-8, ISBN (Bookland EAN), ISSN, Code 39 & 128 Code 39 full ASCII, Code 32, Trioptic Code 39, Interleaved 2 of 5, Industrial 2 of 5, Code 93, Matrix 2 of 5, Codabar (NW7), ISBT 128, Code 11 (USD-8), MSI/Plessey, China Finance, UCC/EAN 128 (GS1-128), China Post, Telepen, GS1 DataBar (formerly RSS) variants 2D: PDF417, MicroPDF417, QR code, DataMatrix, Han Xin code, Aztec Code, GM Code, GS1 Composite, MicroQR Code, CodaBlock F Code

## Electrical

Input Voltage	3.4 - 5 VDC
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## Mechanical Vibration & Shock

Vibration	IEC60067-2-6: Un-powered scanner withstands a random vibration along each of the X, Y and Z axes for a period of one hour per axis, define as follows: 20 Hz to 80 Hz Ramp up to 0.04 G <sup>2</sup> /Hz at the rate of 3 dB/oct 80 Hz to 350 Hz 0.04 G <sup>2</sup> /Hz 350 Hz to 2000 Hz Ramp down at the rate of 3 dB/oct
Shock	IEC60067-2-27; Shock pulse: 0.5ms, Maximal acceleration: 1500G, Shock direction & time: ±X-axis, ±Y-axis, ±Z-axis, 3 times for each direction, total of 18 times

## Environmental & Safety

Temperature	-20°C to 50°C / -4°F to 122°F (operating); -20°C to 70°C / -4°F to 158°F (storage)
Humidity	5% to 95% (non-condensing)
Safety	Photo-biological Safety: EN62471:2008   EMC: EN55022 ESD Protection: EN55024, contact discharge: ± 4 KV, air discharge: ± 8 KV Sealing: IP51   Drop Resistance: Withstands multiple 1.5 m (5 ft.) drops to concrete RF Immunity: IEC61000-4-3, 10 V/m   Artificial Light Immunity: 100,000 Lux

[Notice] : Specification are subject to change without notice.

Decoding Depth*	Resolution	High Density (HD)	Standard Range (SR)
	3 mil Code 39 (3 chars)	5.5 - 8.3cm	/
	4 mil Code 128 (9 chars)	4.5 - 14.2cm	9.0 - 16.0cm
	13 mil UPC (6 chars)	1.0 - 28.0cm	1.2 - 35.0cm
	20 mil Code 39 (1 char)	4.0 - 38.0cm	4.0 - 55.0cm
	5 mil QR (40 chars)	4.8 - 10.0cm	/
	6.7 mil PDF417 (20 chars)	3.0 - 16.0cm	7.0 - 16.0cm
	10 mil DM (20 chars)	1.7 - 20.0cm	2.5 - 19.0cm
	20 mil QR (20 chars)	2.0 - 32.0cm	2.0 - 38.0cm
	* Performance vary by bar code printing quality and environmental conditions.		