

❖ **EL-2800-USB**  
2.8-megapixel Progressive Scan CCD

**USB**<sup>TM</sup>  
VISION



- *2/3" progressive scan CCD*
- *54.6 fps at full resolution*
- *4.54 μm square pixels with 4:3 aspect ratio*
- *Latest Sony EXview HAD CCD II pixel technology for increased sensitivity and NIR response*
- *Monochrome or Bayer color models*
- *Variable partial scanning for increased frame rates*
- *Vertical and horizontal binning on monochrome model*
- *Exposure control from 10 μs (1/100,000) to 8 seconds in 1 μs steps*
- *Flat-field, color shading, and pixel blemish correction*
- *8/10/12-bit digital output over USB3 Vision interface*
- *C-mount lens mount*
- *Automatic Level Control (ALC) for dynamic lighting conditions*
- *Programmable P-iris lens control or 3-axis control for operation of motorized lenses, pan/tilt heads, or other analog accessories*



# Specifications for EL-2800-USB

# Elite Series

Specifications	EL-2800-USB
Sensor	2/3" progressive scan CCD (ICX674)
Pixel clock	54 MHz
Frame rate, full frame	54.6 frames/sec.
Active area	8.72 mm (h) x 6.54 mm (v), 10.97 mm diagonal
Cell size	4.54 μm (h) x 4.54 μm (v)
Active pixels	1920 (h) x 1440 (v)
Horizontal output frequency	40.693 kHz (4-taps, binning off)
Read-out modes	Full 1920 (h) x 1440 (v) up to 54.6 fps ROI (mono) 8 to 1440 lines in 1 line steps ROI (RGB) 8 to 1440 lines in 2 line steps Binning 1x2, 2x1, 2x2 (monochrome only)
EMVA 1288 Parameters	12-bit output format
Absolute sensitivity (mono)	15.94 p (λ = 525 nm)
Absolute sensitivity (color)	23.71 p (λ = 525 nm)
Maximum SNR (mono)	41.39 dB
Maximum SNR (color)	41.52 dB
Traditional SNR*	mono >61 dB (0 dB gain) color >58 dB (0 dB gain, green)
Video signal output	mono 8/10/12-bit monochrome color 8/10/12-bit raw Bayer
Auto-iris lens video output	0.7Vp-p, with 0.3V horiz. sync
Gain	mono Manual/automatic 0 dB to +30 dB color Manual/automatic 0 dB to +27 dB
White balance (EL-2800C)	Manual, one-push auto, or continuous (3000K to 9000K)
Gamma	0.45-1.0 (8 steps) or 256-point LUT
Synchronization	Internal
Trigger input	Opto In, TTL, Pulse Generators (2), Software, User Output (4)
Trigger modes	EPS, PIV, Trigger Width, Timed RCT (with ALC), Sequence
Electronic shutter	Timed exposure 10 μs to 8 sec in 1 μs steps Auto shutter 1/54 to 1/100000 sec.
Auto Level Control (ALC)	Shutter range from 1/54 to 1/100000, gain range from 0 dB to +30 dB, auto iris control. Tracking speeds and max values adjustable.
Pre-processing functions	Flat field correction, color shading correction (EL-2800C), blemish compensation (300 pixels)
Lens control	P-iris or programmable control of motorized lenses, pan/tilt heads and other analog accessories
Operating temperature	-45°C to +70°C†
Storage temperature	-45°C to +70°C
Humidity	20 - 80% non-condensing
Vibration	10 G (20Hz to 200Hz XYZ)
Shock	80 G
Regulations	CE (EN61000-6-2, EN61000-6-3), FCC Part 15 class B, RoHS/WEEE
Power	12V to 24V DC ± 10%. 6.628W typical (full frame @ 12V)
Lens mount	C-mount (fixed or adjustable)
Dimensions (H x W x L)	62 mm x 62 mm x 55.5 mm
Weight	245 g

## Ordering Information

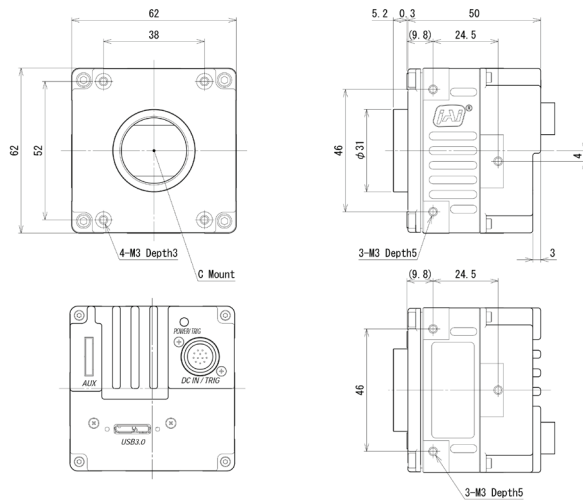
EL-2800M-USB	Monochrome camera with USB3 Vision
EL-2800C-USB	Color camera with USB3 Vision

\*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time. For a more complete description, see the manual.

†Reduced performance may occur when operating outside the standard range of -10°C to +50°C

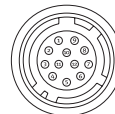
Note: add -CX to model number for adjustable C-mount

## Dimensions



## Connector pin-out

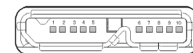
### DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin	Signal
1	GND
2	+12V to +24V DC input
3	GND
4	NC
5	Opto In-
6	Opto In+
7	Opto Out-
8	Opto Out+
9	TTL out 1
10	TTL in 1
11	+12V to +24V DC input
12	GND

### USB 3.0 Interface



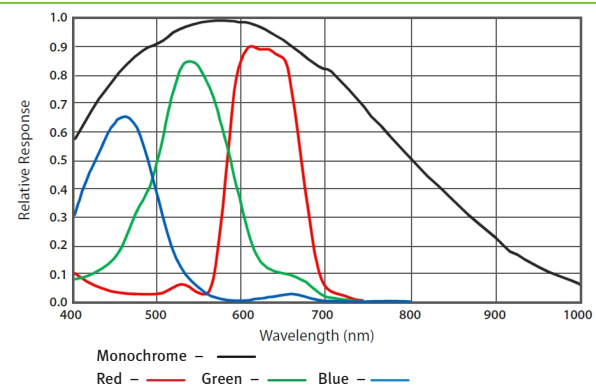
Micro B type - ZX3600-B-10P or equiv.

No	I/O	Name	Note
1	I	VBUS IN	Power (VBUS) <sup>1</sup>
2	I/O	DM	USB2.0 Differential pair (-) <sup>2</sup>
3	I/O	DP	USB2.0 Differential pair (+)
4		OTG ID	USB OTG ID for identifying lines
5		GND	GND
6	O	FX3 SSTXM	USB3.0 Signal Transmission line (-)
7	O	FX3 SSTXP	USB3.0 Signal Transmission line (+)
8		GND	GND
9	I	FX3 SSRXP	USB3.0 Signal Receiving line (-)
10	I	FX3 SSRXM	USB3.0 Signal Receiving line (+)

<sup>1</sup> EL-2800-USB does not accept power over USB

<sup>2</sup> Does not work with USB 2.0

## Spectral Response



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