



ToughEye-1700™ Specification Sheet

Version 2.8

The ToughEye-1700™ camera is equipped with ClearSight™ technology. The system requires nothing more than conventional electrical connections; its rugged, self-contained design eliminates the need for fluid tanks, hoses, compressors, and pumps.

ToughEye-1700™ provides industry leading, zero maintenance, self-cleaning operation, suitable for any industrial application where a clear view is critical to the success of the operation.

The ToughEye™ family of cameras excel at three things: **reliability, zero-maintenance operation and image clarity.**

ExcelSense can customize ToughEye-1700™ installations for almost any application. Please inquire with info@excelsensetechnologies.com.



SPECIFICATIONS

Interruption-Free View	View uninterrupted during cleaning		
Resolution	Full HD (1920 x 1080) @ 30fps		
Min Illumination	Color: 0.001 Lux @ (F1.2, AGC ON) B/W: 0.0001 Lux @ (F1.2, AGC ON)		
Wide Dynamic Range	True WDR (>120dB)		
FoV Options ¹	Name	Hor. FoV	Ver. FoV
	80° Low-Distortion	80°	53°
	90° Low-Distortion	90°	61°
	100°	100°	67°
	120° Low-Distortion	120°	84°
	(Customization available)		
Video (IP)	H.265 / H.264 / MJPEG		
Video (Analog)	720x486 (NTSC), 720x576 (PAL)		
Network	IPv4/IPv6, 802.1x, HTTP, HTTPS, TCP/IP, UDP/IP, RTSP, DHCP, NTP, RTCP/RTP, PPPoE, SMTP, DNS, UPnP, FTP, ARP, SNMP		

¹ Low-distortion 90° and 120° options not available for LED-integrated model



ONVIF	Profile S, Profile G				
Recording	Network recording, Continuous, Motion Local on-board recording option available - 128GB storage capacity				
Dimensions	102mm dia x 178mm [4in dia x 7 in]				
Weight	3.0kg [6.5lb] - 4.3kg [9.5lb] with Bracket and Sunshield				
Material / Finish	Variant	Enclosure	Front Cap	Bracket	Sunshield
	Standard Corrosion Resistant	6061 Aluminum, Type 2 Anodized	7075 Aluminum, Type 3 Anodized and Teflon Coated	316 Stainless Steel	304 Stainless Steel
	Highly Corrosion Resistant	6061 Aluminum, Type 3 Anodized and Teflon Coated	7075 Aluminum, Type 3 Anodized and Teflon Coated		
Clean Cycle	Configurable Timer Based, Electrical Trigger (up to 24 VDC)				
Max Wattage	25W				
Input Voltage	PoE+ ² : 42.5-57 VDC DC: 18-32 VDC				
Temperature Range	-40°C to 60°C (All Versions)				
IP Rating	IP67/IP69 ³				
Vibration	30G (at the Camera) [JIS-D-1601-1995]				
Certifications	FCC, ICES-003, CE ⁴ , IP67/IP69, JIS-D-1601-1995				

² Compatible with IEEE 802.3at compliant PSEs with Layer 1 power negotiation support

³ Refer to [Ingress Protection Test Report](#) for details

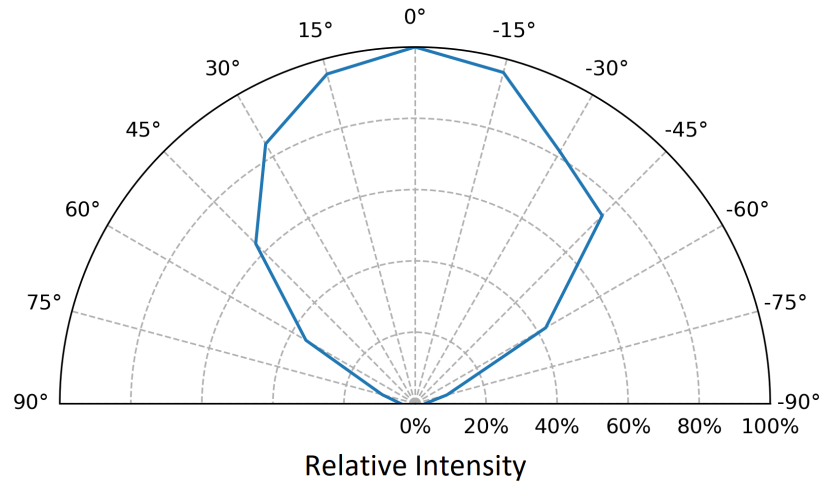
⁴ When powered with DC voltage as per the ToughEye-1700™ Electrical Specifications.



SPECIFICATIONS - INTEGRATED VISIBLE LIGHT VARIANT



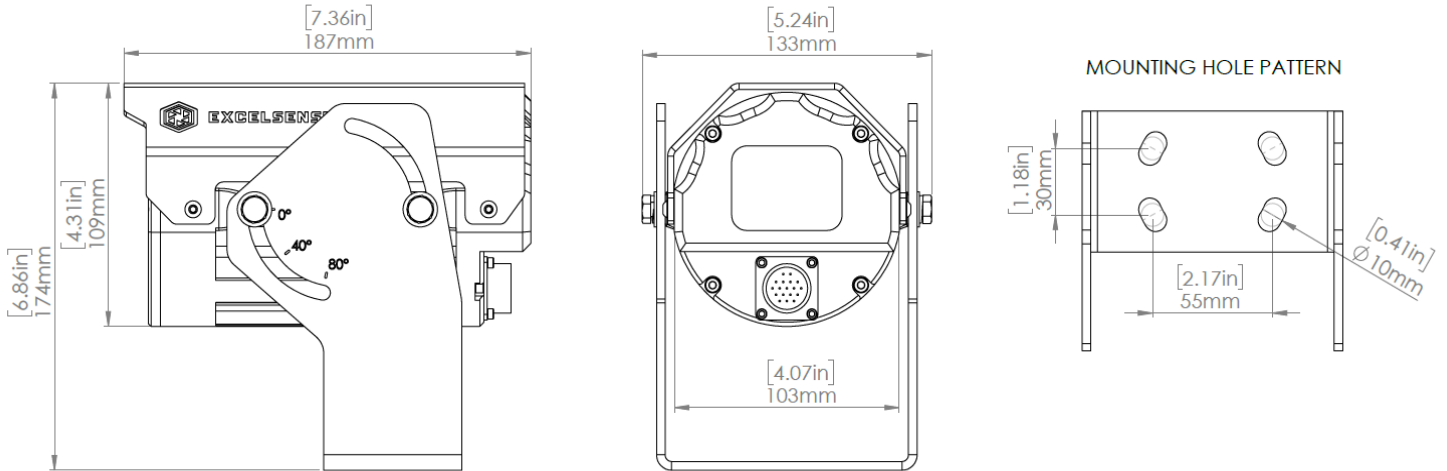
Total Luminosity	1500 lumens (typical output at 20°C)
Max Lux	3800 lux (at distance of 30cm, typical output at 20°C)
Color Temperature	4000K
Polar Radiation Pattern	



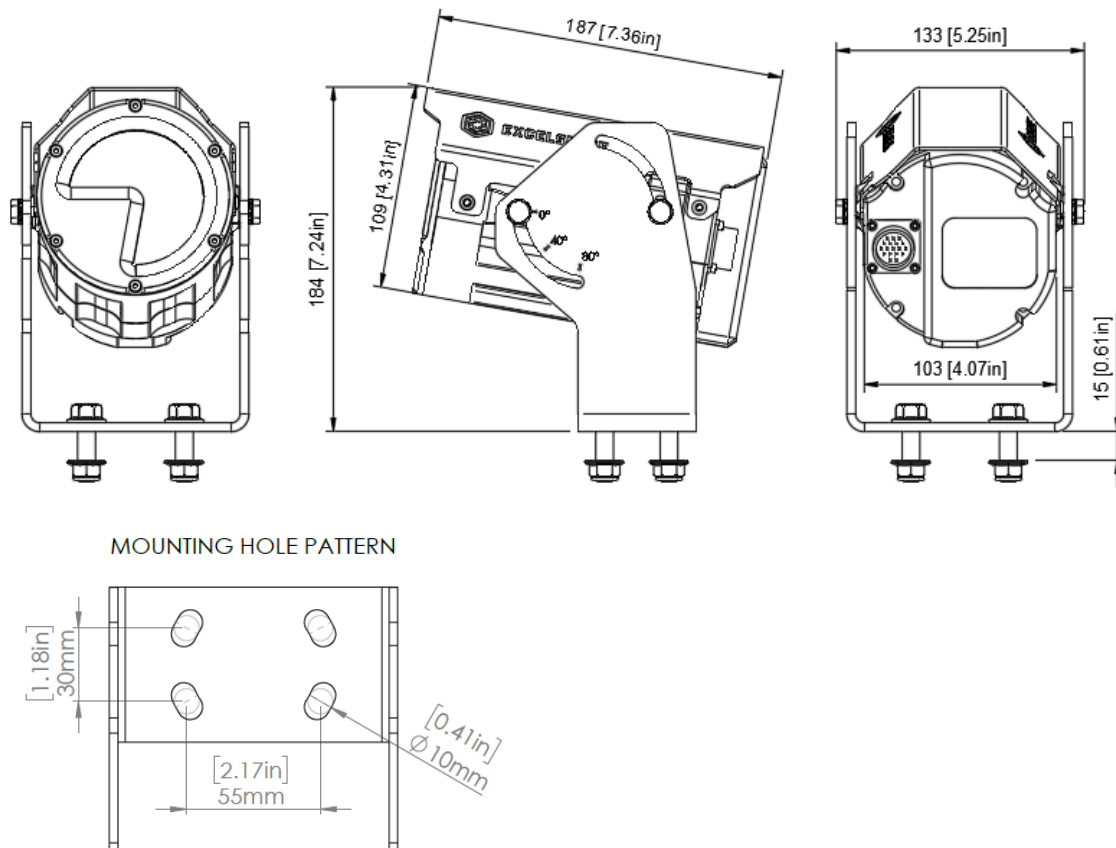


MECHANICAL DRAWING

ToughEye-1700™ Dimensions

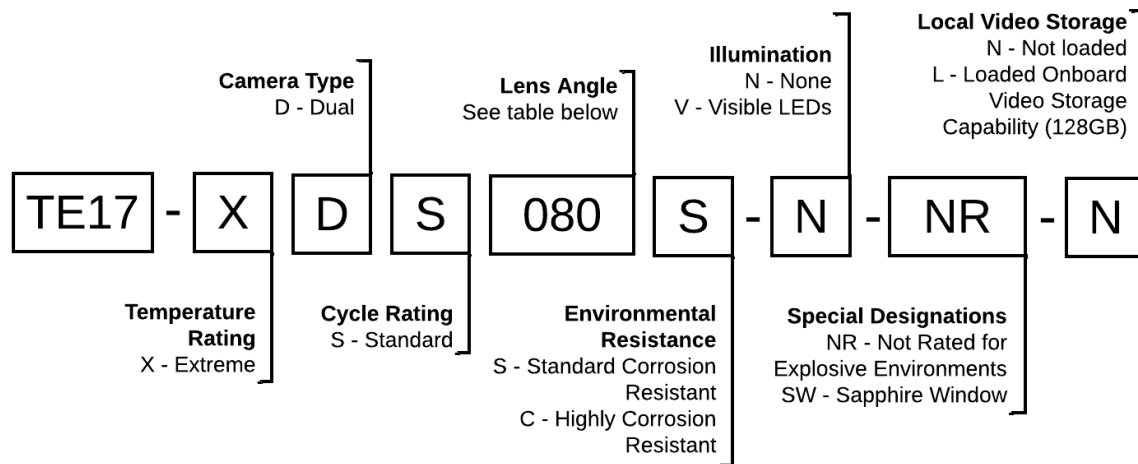


ToughEye-1700™ Wide-Angle Variant Dimensions





ORDERING OPTIONS

**Product Family****TE17** - ToughEye-1700™**Temperature Rating****X** - Extreme: -40°C to 60°C**Camera Type****D** - Dual: IP / Analog Camera**Cycle Rating****S** - Standard Cycle Rating 40,000 cycles**Lens Angle Options**

ID	HFoV	VFoV	Recommended Object Distance at Standard Factory Focus	Notes
020	19.6	12.0	11.5m to Infinity	Custom closer focus available
040	41.0	23.0	5.5m to Infinity	Custom closer focus available
060	62.9	38.0	1.0m to Infinity	Low-distortion lens
080	82.3	52.9	1.2m to Infinity	Low-distortion lens
090	89.1	61.0	0.5m to Infinity	Low-distortion lens

Environmental Resistance**S** - Standard Corrosion Resistant**C** - Highly Corrosion Resistant**Illumination****N** - None**V** - Visible LEDs**Special Designations****NR** - Not Rated for Explosive Environments**SW** - Sapphire Window**Local Video Storage****N** - Not Loaded**L** - Loaded Onboard Video Storage Capability (128GB)



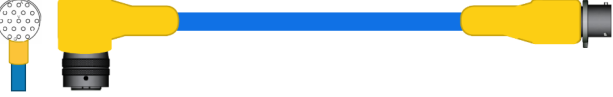
100	90.9	60.0	1.3m to Infinity
120	118.7	84.0	0.2m to Infinity

Low-distortion lens



ACCESSORIES

CABLE LIST

Main Cable - IP [MC17-SC-xxM-X-IP]	Main cable can be used in all ToughEye-1700 installations. The analog cable includes a 75-ohm coaxial cable for CVBS transmission. The IP cable includes a shielded Cat-5e cable for 10/100 Base-T signal transmission. Available in: 10m, 20m, 30m, 40m lengths	
Main Cable - Dual Output [MC17-SC-xxM-X-DU]		
Main Cable - Analog [MC17-SC-xxM-X-AN]		
Extension Cable - IP [EC17-DC-xxM-X-IP]	Extension cables can be used to increase the length of existing cables. Available in: 3m, 10m lengths	
Extension Cable - Dual Output [EC17-DC-xxM-X-DU]		
Extension Cable - Analog [EC17-DC-xxM-X-AN]		
Extension Cable - Dual Output, 90deg TE17 connector overmold (downward) [EC17R1-DC-xxM-X-DU]		
Extension Cable - IP, 90deg TE17 connector overmold (downward) [EC17R1-DC-xxM-X-IP]		
Programming Adapter, IP Output [PA-TE17-USB-A]	Programming adapter is used to modify configurable device parameters, retrieve cleaning cycle data, and update internal microcontroller firmware. Suitable for inline connection to TE-1700	



RJ45 Adapter Cable [AC17-RJ45-K]	The RJ45 adapter kit provides a waterproof RJ-45 connection using the IP67 inline coupler, which accepts an RJ-45 plug. When connected to a IEEE802.3at compliant PSE (e.g. PoE+ injector or switch), it is the simplest way to power and operate the camera.	
RJ45 Adapter Cable, 90deg Downward Camera-side Overmold [AC17R1-RJ45-K]		
M12 X-coded Adapter Cable, with 90-deg M12 Overmold, Clocked SW [AC17-M12XR2-xxM-IP]	The M12 adapter cables enable TE1700 connection to a panel-mount X-coded M12 female receptacle. This cabling is compatible with the IP output of the camera.	
M12 X-coded Adapter Cable, with 90-deg M12 Overmold Clocked SW, and 90deg Downward Camera-side Overmold [AC17R1-M12XR2-xxM-IP]		
TE3100 to TE1700 Adapter Cable, Dual Output [AC17-TE31]	The TE31 to TE17 adapter cable is suitable for adapting the TE17 camera to a TE31-style cabling system. It enables full functionality to the TE17, including DC input, PoE+ input, IP and CVBS outputs, self-clean trigger, and RS-232 communication.	
Analog Video Adapter Cable, GX12 to BNC [AC-GX12-BNC]	The standard video connector to BNC plug adapter cable is suitable for adapting the Standard Analog Monitor Kit [AM-4C-7IN-MB-S] to 3rd-party video hardware (e.g. DVR) which accept a 75-Ohm BNC connection.	

Harness Drawings

Detailed electrical drawings for each cable harness shown above are available [here](#).



TYPICAL INSTALLATIONS

Installation Best Practices

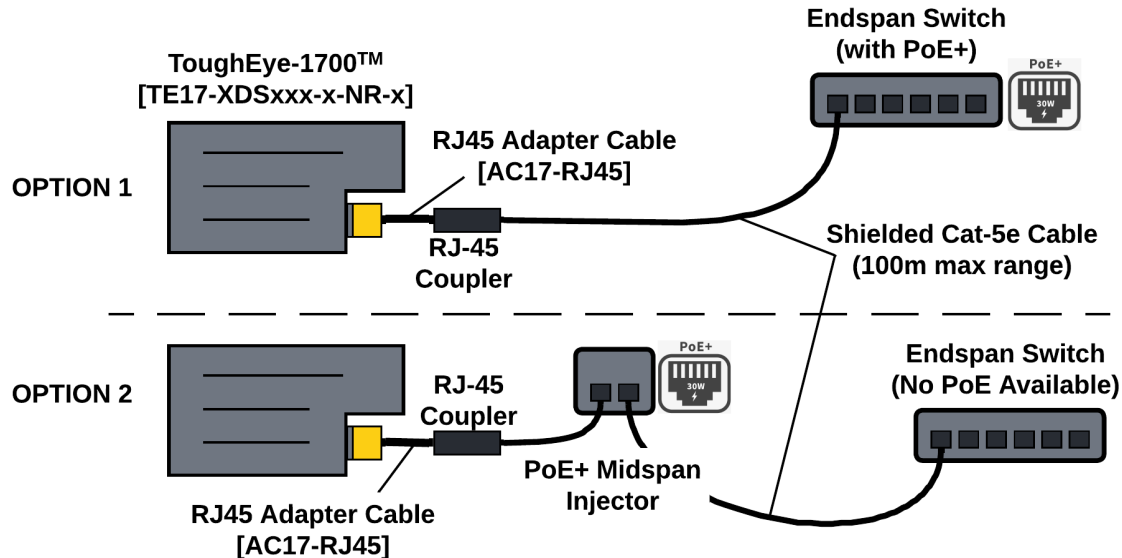
When installing the ToughEye-1700™, it is critical to follow the recommendations found in the Mechanical Installation Best Practices document, found [here](#), to avoid premature failure of the camera.

Network Configuration

The installations shown below illustrate the two main methods of powering and connecting to the ToughEye-1700™: through PoE+ or 24VDC.

Power and Stream with PoE+

This configuration allows any Cat-5e cable to be used to power and communicate with the ToughEye-1700™ camera. No custom cabling is required to be routed, as the Cat-5e cable plugs into the custom short adapter cable for plug and play functionality. As seen in the diagram below, either a PoE+ compliant power sourcing equipment or a non-compliant switch with a PoE+ injector can be used to power the camera.

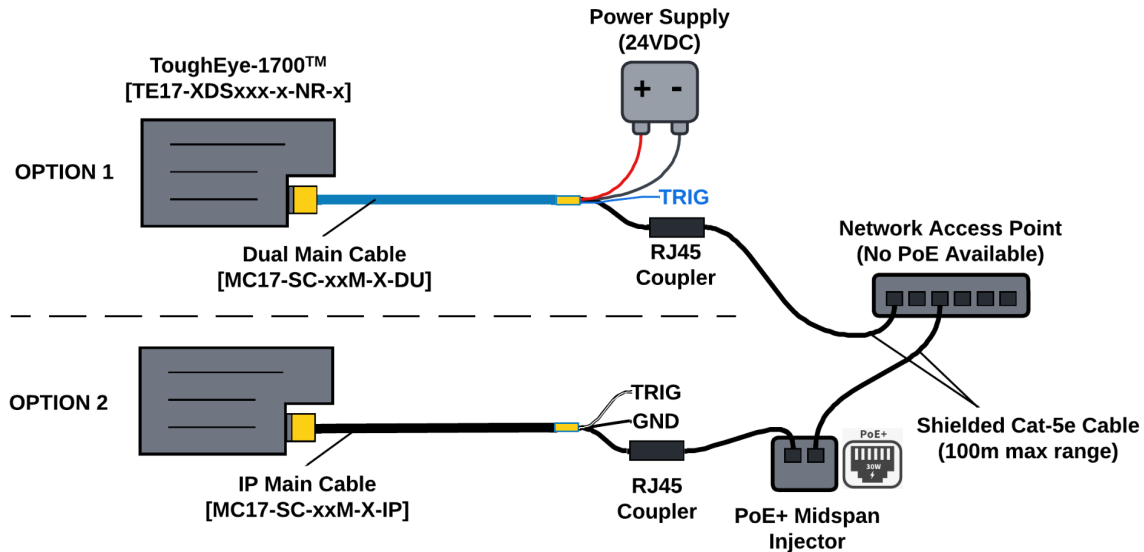




Power with PoE+ or DC Supply



This option is preferred when an extremely rugged cable is required. As seen below, the camera can be powered via a suitable 24V PSU or a suitable PoE+ source.



Analog Configuration

ExcelSense 7" Monitor Kits

ExcelSense has two offerings for analog monitor systems: the Standard Monitor series and the Extreme Monitor series.

The standard monitor series kit documentation can be found [here](#), and the extreme-series kit documentation is available [here](#).

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