EXCELSENSE

ToughCam-1000™ Spec Sheet

Version 2.0

ToughCam-1000™ features the same build quality, reliability, vibration/shock resistance, and resilience to extreme weather as the ToughEye-1700™ family of cameras except it does not feature ToughEye-1700™'s self-cleaning capabilities. ToughCam-1000™ would be a good choice for applications with harsh environments that are not necessarily dirty. You can mix and match ToughCam-1000™ and ToughEye-1700™ in the same installation, as the cables are interchangeable.

ExcelSense can customize ToughCam-1000™ installations for almost any application.

SPECIFICATIONS

GENERAL

Dimensions	68mm dia x 126mm [2.677in x 4.962in]
Weight	0.65kg [1.433lb] - 1.1kg [2.425lb] with Bracket and Sunshield
Power	PoE (IEEE802.3af/at, Class 4)
Thermal	-40°C to 60°C (operation and storage)
IP Rating	Designed to IP69
Vibration	11g

ELECTRICAL

Parameter	Min	Typ	Max
Input Voltage (Active PoE), V_{IN}	36V		57V
Power Consumption, P_{IN}	4W (Idle)		10.5W (Heating)
Max Cable Length[2], L_{MAX}			100m

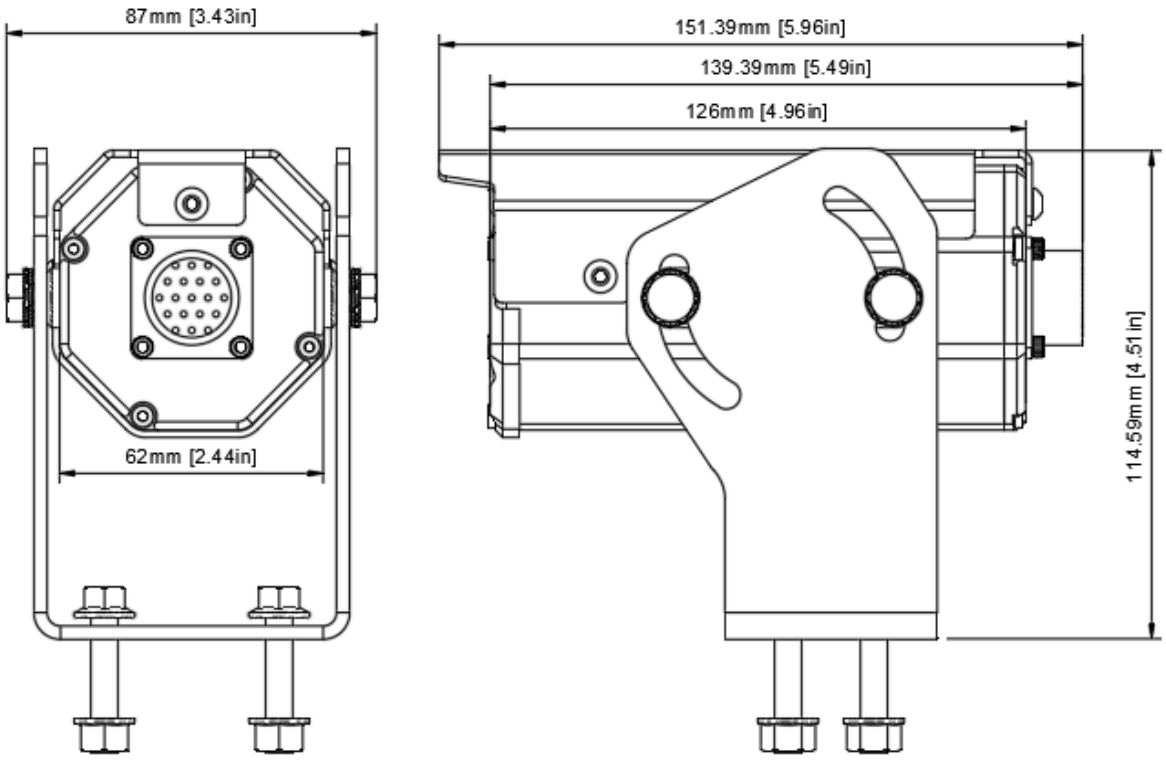
CAMERA

Image Sensor	2.1 MP
Effective Pixels	1920 (H) x 1080 (V)
Horizontal FoV	Approx. 20°, 60°, 80°, 100°, 125°
Min Illumination	Color: 0.001 Lux @ (F1.2, AGC ON) B/W: 0.0001 Lux @ (F1.2, AGC ON)

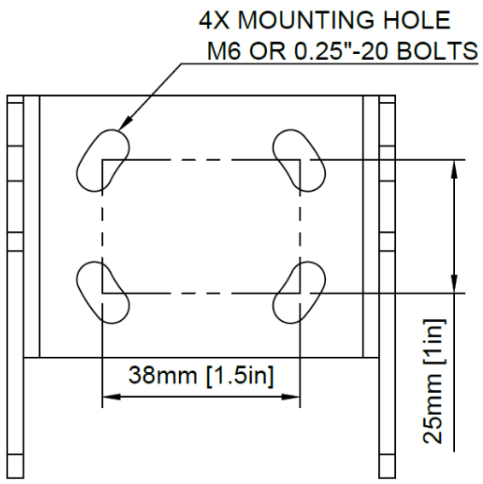
ES France - Mobilité & Systèmes Embarqués
127 rue de Buzenval BP 26 - 92380 Garches
Tél. 01 47 95 99 80
Fax. 01 47 01 16 22
e-mail : mse@es-france.com
Site Web : www.es-france.com

Wide Dynamic Range	True WDR (>120dB)
IP Video	H.265 (1920x1080) | H.264 (1920x1080) | MJPEG (1280x720)
Streaming Capability	Stream 1: 1920×1080/1280×720 @50/60fps Stream 2: D1/VGA/640×360/CIF/QVGA @25/30fps Stream 3: VGA/CIF/QVGA @25/30fps
Network	IPv4/IPv6, 802.1x, HTTP, HTTPS, TCP/IP, UDP/IP, RTSP, DHCP, NTP, RTCP/RTP, PPPoE, SMTP, DNS, UPnP, FTP, ARP, SNMP
ONVIF	Profile S, Profile G
Recording *(Loaded onboard storage variant only)*	128GB max storage - Continuous, Motion, Pre/Post Alarm

MECHANICAL DRAWING



ES France - Mobilité & Systèmes Embarqués
127 rue de Buzenval BP 26 - 92380 Garches
Tél. 01 47 95 99 80
Fax. 01 47 01 16 22
e-mail : mse@es-france.com
Site Web : www.es-france.com



ORDERING OPTIONS

TC10	-	X	P	N	080	S	-	N	-	NR	-	N

Temperature Rating
X - Extreme

Cycle Rating
S - Standard
N - Not applicable

Camera Type
P - IP

Lens Angle
020 - 20° HFoV
060 - 60° HFoV
080 - 80° HFoV
100 - 100° HFoV
120 - 120° HFoV
Low-Distortion

Environmental Resistance
S - Standard Corrosion Resistant
C - Highly Corrosion Resistant

Illumination
N - None

Hazardous Certification
NR - Not Rated for Explosive Environments

Local Video Storage
N - Not loaded
L - Loaded Onboard Video Storage Capability (128GB)

TC10 - ToughCam-1000™ camera

Temperature Rating
X - Extreme: -40ºC to 60ºC

Environmental Resistance
S - Standard Corrosion Resistant
C - Highly Corrosion Resistant

Illumination
N - No Illumination

Camera Type
P - IP: IP Camera

Lens Angle (customization available)
020 - Approx. 20° Horizontal FoV
060 - Approx. 60° Horizontal FoV
080 - Approx. 80° Horizontal FoV
100 - Approx. 100° Horizontal FoV
120 - Approx. 120° Horizontal FoV
(Low-Distortion Lens option)

Hazardous Locations Certification
NR - Not Rated for Explosive Environments

Local Video Storage
N - Not Loaded
L - Loaded Onboard Video Storage Capability (128GB)

ES France - Mobilité & Systèmes Embarqués
127 rue de Buzenval BP 26 - 92380 Garches
Tél. 01 47 95 99 80
Fax. 01 47 01 16 22
e-mail : mse@es-france.com
Site Web : www.es-france.com

ACCESSORIES

External Harness Options

The following table lists standard cables available. Detailed drawings for each cable harness shown below are available here. Note that if a variant is required that cannot be found in this table, please contact an ExcelSense representative.

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]**	This cable is compatible with TE-1700.	
M12 X-coded Adapter Cable, with 90-deg M12 Overmold, Clocked SW **[AC17-M12XR2-xxM-IP]**	The M12 adapter cables enable TC-1000 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]**	This cable is compatible with TE-1700.	

The following harnesses are also compatible with ToughCam-1000™, however they have additional wires and cables within the harness which, although not used in ToughCam-1000™, allow for compatibility with other products such as the ToughEye-1700™ products.

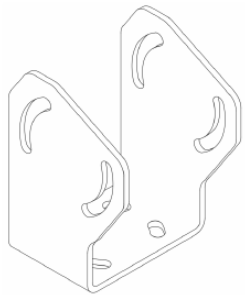
Main Cable - IP **[MC17-SC-xxM-X-IP]**	Main cable can be used in all ToughCam-1000 installations. The IP cable includes a shielded Cat-5e cable for 10/100 Base-T signal transmission. The dual-output cable includes a 75-ohm coaxial cable for CVBS transmission. This cable is recommended if compatibility with the TE-1700 camera's analog video feed is desired (note: TC-1000 does not have an analog video output). This cable is compatible with TE-1700. Available in: **10m, 20m, 30m, 40m** lengths	
Main Cable - Dual Output **[MC17-SC-xxM-X-DU]**		
Extension Cable - IP **[EC17-DC-xxM-X-IP]**	Extension cables can be used to increase the length of existing cables. This cable is compatible with TE-1700. Available in: **3m, 10m** lengths	
Extension Cable - Dual Output **[EC17-DC-xxM-X-DU]**		
Extension Cable - Dual Output, 90deg TC10 connector overmold (downward) **[EC17R1-DC-xxM-X-DU]**		
Extension Cable - IP, 90deg TC10 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 TC-1000. This cable is compatible with TE-1700.	

ES France - Mobilité & Systèmes Embarqués
127 rue de Buzenval BP 26 - 92380 Garches
Tél. 01 47 95 99 80
Fax. 01 47 01 16 22
e-mail : mse@es-france.com
Site Web : www.es-france.com

Power Supply Options

Part Number	Description	Preview	Datasheet
INJ-POE-S	Commercial-grade PoE+ injector, ideal for areas protected from the environment, and benchtop testing and demonstration, Input:100-240V AC		TPE-115GI (v2.1)
INJ-POE-N	Industrial-grade PoE+ injector, with integrated DIN-rail mount. Suitable for field deployment with a wide temperature range: -40C to 65C. Input: 10-30 VDC		POE-24
INJ-POE-N48	Industrial-grade PoE+ injector, with integrated DIN-rail mount. Suitable for field deployment with a wide temperature range: -40C to 75C. Input: 48-56 VDC		TI-IG30 (v1.0R)

Mounting Options



MB - TC10 - S

Standard mounting bracket. Suitable for installations requiring +15° to -60° down camera orientations. The MB-TC10-S comes standard with the ToughCam-1000™.

TYPICAL INSTALLATIONS

Network Configuration

The installations shown below illustrate the two main methods of powering and connecting to the ToughCam-1000™: 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 ToughCam-1000™ 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.