

SX1CH-LED-G Series

Explosion Proof Dual Fixed Housing

Integrated with optical camera module with up to 8MP [4K] resolution + Thermal Camera (384x288 or 640x480) Module



SX1CH-LED-G

Main Features



Marine grade
AISI316L Stainless
Steel material



Ex II 2 G Ex db op pr IIC T6 Gb
/ Ex II 2 D Ex tb op pr IIIC
T80°C Db



IP 66 / 68



Option for IEEE
802.3at PoE+



Option for optical
camera with up to
8MP [4K] resolution



Option for thermal
camera available

Technical Data

General	
Certification	Ex II 2 G Ex db op pr IIC T6 Gb / Ex II 2 D Ex tb op pr IIIC T80°C Db
Protection Level	IP 66 / 68, TVS 6000V Lightning Protection, Surge Protection and Voltage Transient Protection
Operating Temperature	-40°C to 60°C
Relative Humidity	≤95%
Mechanical	
Body Material	AISI316L Stainless Steel
Sight Glass Material	Window with hardened mineral clear tempered glass
	Window with Germanium glass (for thermal housing)
Overall Dimension (WxHxD)	<i>Please refer to overall dimension drawings of each model.</i>
Cable Entry	2 x M25
Weight	Approximate 30KG
Electrical	
Operating Voltage	AC110-240V (0.5A - 1.10A), 50/60Hz Optional: IEEE 802.3at PoE+
Power Consumption	Max 110W (110V), Max 120W (240V)
Thermostatically Controlled Heater	T°C on: <10°C, T°C off: >10°C
Optional	
Built in Fiber Optic Module	Single Mode or Multi Mode (-SM or -MM model, please refer to below ordering info)
Accessories	
Standard	Sunshield, Swivel Joints
Optional	Wall Bracket

IP Camera/Lens

	8MP, IP	5MP, IP	2MP, IP
Camera			
Sensor	1/2.8" CMOS		
Focal Length	2.8mm / 4.0mm	4.0mm	2.8mm
Focus	F1.6		
Horizontal Angle of View	97.8° (2.8mm) / 87.8° (4.0mm)	77.9°	92°
Illumination Requirement	Color: 0.002Lux B/W: 0Lux with IR		
Day/Night	Dual IR Cut Filter with Auto Switch		
Effective Pixels (HxV)	3840x2160	2592 × 1944	1920 x 1080
Main Stream	PAL: 20fps (3840x2160, 3072x2048), 25fps (2560x1440, 2304x1296, 1920x1080, 1280x720)	PAL: 25fps (2592x1944, 2592x1520, 2560x1440, 2304x1296), 50fps (1920x1080, 1280x720)	PAL: 25fps (1920x1080, 1280x720, 704x576, 640x480)
	NTSC: 20fps (3840x2160, 3072x2048), 30fps (2560x1440, 2304x1296, 1920x1080, 1280x720)	NTSC: 30fps (2592x1944, 2592x1520, 2560x1440, 2304x1296), 60fps (1920x1080, 1280x720)	NTSC: 30fps (1920x1080, 1280x720, 704x480, 640x480)
Sub Stream	PAL: 25fps (704x576, 704x288, 352x288, 640x360)	PAL: 25fps (704x576, 704x288, 640x480, 352x288)	PAL: 25fps (704x576, 704x288, 640x480, 352x288)
	NTSC: 30fps (704x480, 704x240, 352x240, 640x360)	NTSC: 30fps (704x480, 704x240, 640x480, 352x240)	NTSC: 30fps (704x480, 704x240, 640x480, 352x240)
Third Stream	PAL: 25fps (704x576, 704x288, 352x288, 640x480)	PAL: 25fps (1920x1080, 1280x720, 704x576, 704x288, 640x480, 352x288)	PAL: 25fps (704x576, 704x288, 352x288)
	NTSC: 30fps (704x480, 704x240, 352x240, 640x480)	NTSC: 30fps (1920x1080, 1280x720, 704x480, 704x240, 640x480, 352x240)	NTSC: 30fps (704x480, 704x240, 352x240)
On-board Storage	Built-in Micro-SD card slot, up to 512 GB		
Network			
Protocols	HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, DHCP, DNS, DDNS, Easy DDNS, NTP, SSL, 802.1X, QoS, IPV4, IPV6, PPPoE, SSH, Unicast, Multicast, RTCP, ARP		
System Compatibility	ONVIF (PROFILE S/T/G), P2P		
Mobile Viewer Apps	Android and iOS		
Feature			
Supported Video Analytics Events	Tripwire, Perimeter	Tripwire, Perimeter	Tripwire, Perimeter
	Support detection and classification of specific target types (people or vehicle) to remove false alarm caused by animals, leaves etc		

Thermal Camera/Lens

	384	640
Video		
Type	Uncooled FPA microbolomete	
Resolution	384x288	640x480
Pixel pitch	17μm	
NETD	≤50mK@f1.0, 300K, 30Hz	
Field Frequency	50Hz	
Spectral range	8 ~ 14 μm	
Lens		
Focal Length Options	Motorized focus lens: 4.8mm, 8mm(f0.8), 12mm, 20mm, 35mm, 50mm, 75mm	
Focus Control	Motorized focus by pressing "focus +/-" button	
Operational		
OSD	Off / On (English: 20 characters, 5 Lines)	
Pan & Tilt Control	Yes	
Frame Frequency	25 / 30Hz	
Brightness	Manual adjustment (0~100)	
Gain Control	Manual adjustment (0~100)	
Image Enhancement	On / Off (Edge enhancement only)	
Digital Noise Reduction (DNR)	SSNR (2D) Noise Filter (Off / On)	
Rotate Image	Flip: On / Off, Mirror: On / Off	
Intelligent Video Analytics	Motion Detection	
Alarm Triggers	Temperature Alarm, Motion Detection	
Built-in Motion Detection	Off / On (3 Zones, Rectangular)	
Temperature Alarm Events	Up to 10 rectangular ROIs, temperature setting in each ROI in max., min., or average	
Built-in Motion Detection	Off / On (3 Zones, Rectangular)	
Detection Mode (Thermal Core)	Normal Temperature Range	-20 °C ~ 120 °C
	High Temperature Range	0 °C ~ 500 °C
Measurement accuracy in lab condition	±2°C or ±2% of temperature reading (Thermal camera with normal temperature detection mode has better accuracy than camera with high temp. mode)	
Application	Fire prevention, Preventive maintenance, Intrusion detection (human, animal) and other general analysis application	

Network	
Ethernet	RJ45 (10/100BASE-T)
Video Compression Format	H264 (MPEG-4 Part 10/AVC) : Main/Baseline/High Motion JPEG
Resolution	720x756, 640x480, 584x288, 720x480, 520x240
Max. Frame Rate	[H264] Max 30fps at all resolutions, [MJPEG] Max 15fps@640x480
Bitrate Control Method	CBR or VBR, Motion JPEG: VBR (Bitrate Range: 128K ~ 1M)
Streaming Capability	Multiple Streaming (Up to 3 profiles) Max. Users Number: 10 (total bitrate), Max. Profile Count: 4, Fixed Profile (Default): 2
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, ICMP, IGMP, ARP, DNS, DDNS, SMTP
Security	IP Address Filtering User access Log HTTPS(SSL) Login Authentication, Digest Login Authentication, 802.1X Authentication
Streaming Method	Unicast / Multicast
Max. User Access	Max. 10 users access
API	ONVIF Profile S Ver 2.4
Web Language (17)	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Dutch, Portuguese, Turkish, Polish, Czech, Hungarian, Greek
Web Viewer	Supported OS: Windows XP / VISTA / 7 / 8 / 8.1 / 10 Supported Browser: Microsoft Internet Explorer (Ver. 9~11)

Thermal Camera Lens FOV and DORI Comparison

Measured max. range for **human** detection, recognition, and identification with 0.5m width x 1.8m height:

Resolution	Lens (mm)	FOV	Detection (m)	Recognition (m)	Identification (m)
640x480	4.8	97.15° x 80.73°	178.58	44.64	22.32
	8	68.43° x 54.04°	297.63	74.41	37.20
	12	48.77° x 37.56°	446.44	111.61	55.80
	20	30.43° x 23.06°	744.07	186.02	93.01
	35	17.67° x 13.30°	1302.11	325.53	162.76
	50	12.42° x 9.33°	1860.16	465.04	232.52
	75	8.30° x 6.23°	2790.24	697.56	348.78
384x288	4.8	68.43° x 54.04°	178.58	44.64	22.32
	8	44.39° x 34.03°	297.63	74.41	37.20
	12	30.43° x 23.06°	446.44	111.61	55.80
	20	18.54° x 13.96°	744.07	186.02	93.01
	35	10.66° x 8.00°	1302.11	325.53	162.76
	50	7.47° x 5.61°	1860.16	465.04	232.52
	75	4.98° x 3.74°	2790.24	697.56	348.78

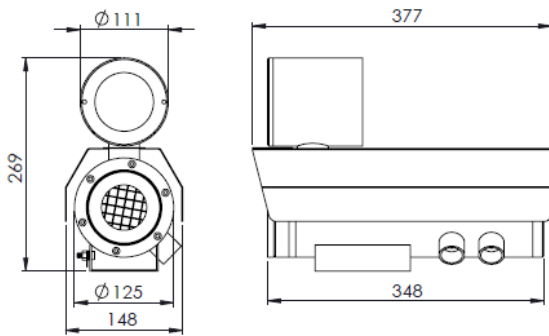
Measured max. range for **small vessel** detection, recognition, and identification with 4.5m width x 2.3m height:

Resolution	Lens (mm)	FOV	Detection (m)	Recognition (m)	Identification (m)
640x480	4.8	97.15° x 80.73°	605.58	151.40	75.70
	8	68.43° x 54.04°	1009.30	252.32	126.16
	12	48.77° x 37.56°	1513.95	378.49	189.24
	20	30.43° x 23.06°	2523.25	630.81	351.41
	35	17.67° x 13.30°	4415.68	1103.92	551.96
	50	12.42° x 9.33°	6308.12	1577.03	788.52
	75	8.30° x 6.23°	9462.18	2365.55	1182.77
384x288	4.8	68.43° x 54.04°	605.58	151.40	75.70
	8	44.39° x 34.03°	1009.30	252.32	126.16
	12	30.43° x 23.06°	1513.95	378.49	189.24
	20	18.54° x 13.96°	2523.25	630.81	351.41
	35	10.66° x 8.00°	4415.68	1103.92	551.96
	50	7.47° x 5.61°	6308.12	1577.03	788.52
	75	4.98° x 3.74°	9462.18	2365.55	1182.77

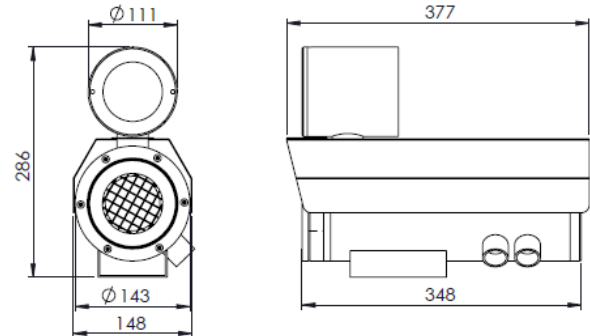
*Lens 35mm, 50mm and 75mm will need to use GL Housing Series only.

Lens Comparison Table

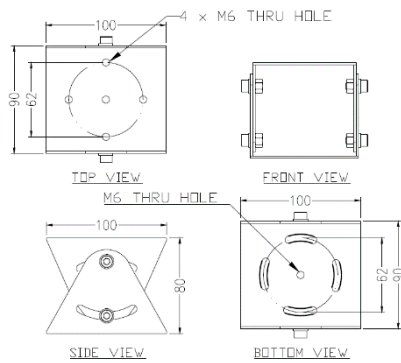
Outline Dimensions (mm)



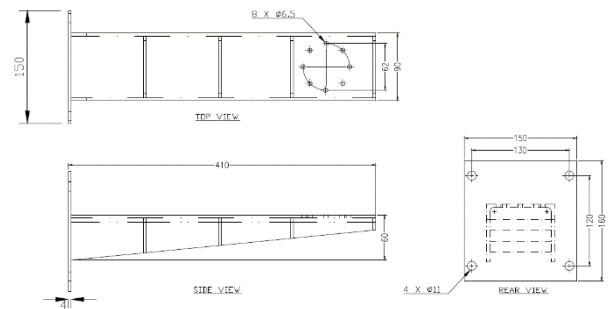
SX1-LED-G Outline Dimensions



SX1-LED-GL Outline Dimensions



SJ-SX1 - Swivel Joints Outline Dimensions



WB-SX1 - Wall Bracket Outline Dimensions

Model & Ordering Code

SX1CH-LED - X - X - X - X - X - X - X

Camera Station Options

G : With Germanium Window and Front Guard
 GL : Large Diameter (143 mm) with Germanium Window and Front Guard

Camera Module Options

8M (2.8) : 8MP (2.8mm), IP Camera
 8M (4) : 8MP (4.0mm), IP Camera
 5M : 5MP, IP Camera
 2M : 2MP, IP Camera

Thermal Camera Module Options

384 : 384x288 resolution
 640 : 640x480 resolution

POE Options

Blank : No additional option
 POE : POE+

Built-in Fiber Optic Module Options

Blank : No additional option
 SM : Single Mode
 MM : Multi Mode

Detection Mode Options

Blank : Normal Temperature
 H : High Temperature

Thermal Camera Focal Length Options

M4.8 : 4.8 mm motorized lens
 M8 : 8 mm motorized lens
 M12 : 12 mm motorized lens
 M20 : 20 mm motorized lens
 M35 : 35 mm motorized lens
 M50 : 50 mm motorized lens
 M75 : 75 mm motorized lens

**Please refer lens comparison table above.*

Standard Accessories

SCH-SX1CH : Sunshield for Camera Housing
 SJ-SX1CH : Swivel Joints

Optional Accessories

WB-SX1CH : Wall Bracket