SIDUS Solutions

SS550 DarkCrystal CAM Subsea Camera

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Manufacturer / system supplier: SIDUS Solutions

Document type: manufacturer specification

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Applies to the named models and revision only. Housing, interface and performance differences must follow the individual model tables. Source discrepancies are recorded on the ROVITEC product pages; request the approved specification before integration.

Original manufacturer source

https://www.sidus-solutions.com/wp-content/uploads/2025/12/SS550-DarkCrystal-CAM-Datasheet.pdf

Manufacturer pages follow unchanged. Local distribution copy.

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SS550 DarkCrystal CAM Subsea Camera Assembly Specifications

- Resolution: 1920 x 1080, 1280 X 1024, 1280 X 960, 1280 X 720, 1024 X 768, 640 X 480, 320 X 240
- Lens: 2.8mm, fixed focus (100mm to infinity)
- FOV in Water: 68º Diagonal x 63º H x 42º V (16:9 aspect ratio)
- Low-Light Performance: Down to 0.0008 lux (Sense-Up On)
- Dynamic Range: 120 dB True WDR
- Video Compression: H.264, MJPEG; 3 simultaneous streams, independent frame rate & Bandwidth control for each video stream
- Storage: 256 GB (SDHC), (Micro SD Card), 512 BG (optional)
- Depth Rating: 3000m
- Housing Options: Titanium or Anodized Aluminum
- Power: 8-36VDC, 3W typical (HBLED Off), max 17W



The SS550 is a compact, high-performance HDR IP video camera engineered for demanding subsea environments. Featuring a 2MP CMOS sensor with High Dynamic Range (HDR) imaging or CVBS analog video output, it delivers exceptional image clarity and low-light performance, making it ideal for subsea inspection, monitoring, and research applications.

Ideal for ROVs, AUVs, underwater vehicles, and harsh marine environments. Available with bulkhead connector or integrated loose wire penetrator.

Item Description	Material	Depth Rating
SS550 HDR IP	Titanium (std), Anodized Aluminum	3000m
SS550 HDR CVBS ANALOG	Titanium (std), Anodized Aluminum	3000m
SS550 BULKHEAD [Subconn]	Titanium (std), Anodized Aluminum	3000m

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IMAGE SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Image Sensor	1/2.8" CMOS, progressive scan, 2MP	
Sensor Resolution	1920x1080 1280x1024 1280x960, 1280x720 1024x768, 640x480, 320x240	CVBS: 1280H—1000TVL AHD, TVI, CVI: 1920X1080
Minimum Illumination **f/2.4, 1/30 sec**	0.05 lux, Sense-Up Off 0.005 lux, Sense-Up On	0.05 lux, Sense-UP Off (color) 0.008 lux, Sense-UP Off (B&W) 0.005 lux, Sense-UP On (color) 0.0008 lux, Sense UP On (B&W)
Electronic Shutter	Auto (1/30~1/30,000) ANTI-SAT_ON / AE SPEED	Auto (1/30 ~1/50,000)
Day & Night	AUTO, PRESET, MANUAL	AUTO, B&W, MANUAL
Sense-Up	OFF, X2, x4, x6, x8, x16, x32	OFF, AUTO, X2, x4, x8, x10, x15, x20, x25, x30
Signal to Noise Ratio	52dB	
Dynamic Range	120dB, True WDR, HLC, BLC	
Noise Reduction	2D DNR, 3D DNR, HDR	
Image Settings	Day & Night / Brightness, Contrast, Sharpness, Saturation, White Balance, Motion Detect, Exposure Control, Image Flip & Mirror, Privacy Masking, BLC, AGC, WDR, 3DNR, Sense-Up, De-Fog, Shading, Gamma, Automatic Contrast Enhancement	
White Balance	Auto (Indoor & Outdoor) / Push / User	
OSD Display	Text, Date, Time, Event, On/Off SMTP Time Server Supported	
Image Mirror	Normal / Mirror (H) / Flip (V) / Both (HV)	

VIDEO SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Video Compression	H.264, MJPEG	
Bit Rate Control	VBR, CBR, CVBR	
Bit Rate	H.264: 128Kbps ~ 20 Mbps MJPEG: 1 ~ 50 Mpbs	
Latency	H.264: 200 mS Typical MPEG:N/A	
Video Streaming	Three Simultaneous Streams: 2x H.264, 1x MJPEG Independent Frame Rate & Band Width Control for each Video Stream	
Max Frame Rate	30 FPS	
Integrated Recording	HD MPEG Video, HD JPEG Stills Time Stamped	
Onboard Storage	256 GB (SDHC), (Micro SD Card), 512 GB (Optional)	

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OPTICAL SPECIFICATIONS: HDR IP VIDEO

	IP Configuration	CVBS Configuration
Lens	2.8mm, F/2.4	
Focus	Fixed, 100mm ~infinity	
FOV in Water	68° D x 63° H x 42°V (16:9 aspect ratio)	

ENVIRONMENTAL SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Depth Rating	3000 msw	
Operating Temperature	-20°C to +50°C (-4°F to 122°F)	14ºF ~ 122ºF (-10ºC ~ +50ºC)
Storage Temperature	-30°C to +60°C (-22°F to 140°F)	-4ºF ~ 140ºF (-20ºC ~ +60ºC)

ELECTRICAL SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Voltage	8~36VDC	
Power	3W Typical (HBLED Off) 17W Maximum	1.6W Typical (HBLED Off) 15W Maximum

NETWORK SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Supported Protocols	TCP/IP, UDP/IP, DHCP, AUTO-IP, JGMP, ICMP, HTTP, UPnP, FTP, SMTP, SNTP, DNX, RTP, RTSP, RTMP, HTTPS, ONVIF	CVBS, AHD, HD-TVI, HD-CVI NTSC or PAL
Interface	Ethernet, 10/100 Base-TX, ONVIF, RTSP Internal Web Browser & TCP/IP Password Protected	Analog Video RS-485 Serial Port
Date & Time	Manual Setting or Sync to SNTP Server	
Configuration Settings	Google Chrome Internet Explorer 11 or above (Active X) ONVIF Profile S	

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MECHANICAL SPECIFICATIONS:

	IP Configuration	CVBS Configuration
Housing	Titanium (Standard) Anodized Aluminum (Optional)	
Port	Sapphire	
Outer Diameter	02.125” [54 mm]	
Overall Length	3.50” [88.9 mm]	
Weight in Air	1.1 lbs [498.9g]	
Weight in Water	0.82 lbs [371.9g]	
Default Connector	Miniature Whip Cable, Extra Flexible, 2m long, 10-conductor SubConn DBH8M [IP Configuration] SubConn MCBH8M [CVBS Configuration] *Contact Sales Representative for options*	
Default Pinouts [Connectorized Configurations]	Subconn DBH8M Contact Sales Representative for Options	Subconn MCBH8M Contact Sales Representative for Options
Pin 1	GND	GND
Pin 2	+9-36VDC	+9-36VDC
Pin 3	I/O #1	I/O #1
Pin 4	I/O #2	I/O #2
Pin 5	RX-	RS485A [D-]
Pin 6	RX+	RS485B [D+]
Pin 7	TX-	VIDEO GND
Pin 8	TX+	VIDEO
Default Connections [Loose Wires Configuration]	Ø3/8” Polyurethane Whip Cable, Extra Flexible, 1m long, 5xUTP	Ø3/8” Polyurethane Whip Cable, Extra Flexible, 1m long, 5xUTP
BRN [BRN/ORG Pair]	GND	GND
ORG [BRN/ORG Pair]	+9-36VDC	+9-36VDC
WHT [BLU/WHT Pair]	I/O #1	I/O #1
BLU [BLU/WHT Pair]	I/O #2	I/O #2
WHT [GRN/WHT Pair]	RX-	RS485A [D-]
GRN [GRN/WHT Pair]	RX+	RS485B [D+]
WHT [ORG/WHT Pair]	TX-	VIDEO GND
ORG [ORG/WHT Pair]	TX+	VIDEO
WHT [BRN/WHT Pair]	I/O #3	I/O #3
BRN [BRN/WHT Pair]	I/O #4	I/O #4

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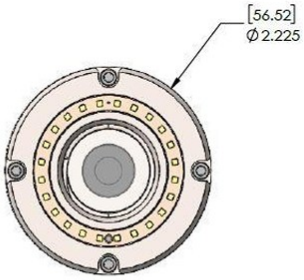
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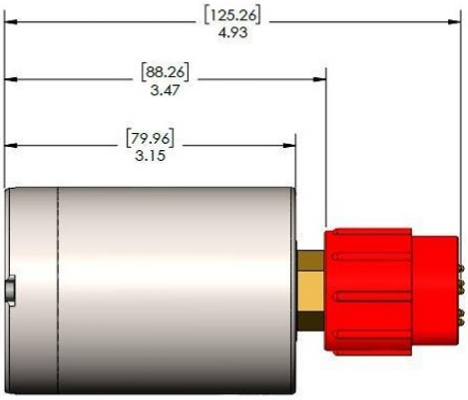
NOTES:

1. IP VERSION
2. DEPTH RATING: 3000M
3. MATERIALS: ANODIZED ALUMINUM, 6AL4V TITANIUM
4. AOV IN WATER: 68°D X 63° H X 42° V
5. MAXIMUM RESOLUTION: 1920X1080P
6. MIN ILLUMINATION: 0.05 LUX, 0.005 LUX SENSE-UP
7. COMPRESSION: H.264, MJPEG
8. RECORDING: 256 OR 512 GB SD CARD
9. POWER: 8~36VDC 3W LEDs OFF, 17W LEDs MAXIMUM
10. SUPPORTED PROTOCOLS: RTSP, ONVIF, TCP/IP
11. WEIGHT: 1.1 LBS IN AIR, 0.83 LBS IN WATER

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
A	ECO#00883: INITIAL RELEASE M.COOK	11/11/2025	S.HUDSON



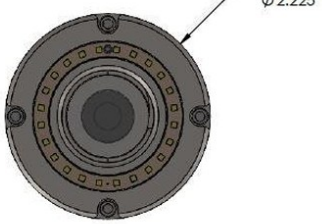


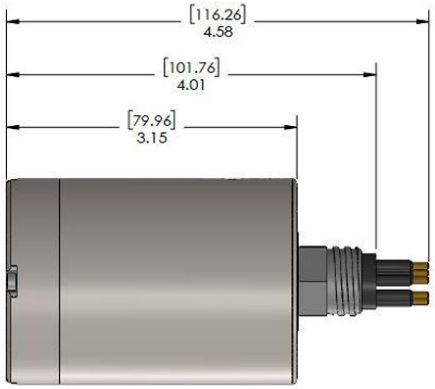


CVBS CONNECTORIZED CONFIGURATION:

1. CVBS VERSION
2. DEPTH RATING: 3000M
3. MATERIALS: ANODIZED ALUMINUM, 6AL4V TITANIUM
4. AOV IN WATER: 68°D X 63° H X 42° V
5. MAXIMUM RESOLUTION: 1000TVL
6. MIN ILLUMINATION: 0.05 LUX, SENSE-UP OFF (COLOR)
   0.008 LUX, SENSE-UP OFF (B&W)
   0.005 LUX SENSE-UP ON (COLOR)
   0.0008 LUX, SENSE-UP ON (B&W)
7. POWER: 8~36VDC 1.6W LEDs OFF, 15W LEDs MAXIMUM
8. SUPPORTED PROTOCOLS: CVBS, RS485
9. WEIGHT: 1.1 LBS IN AIR, 0.83 LBS IN WATER

REV.	DESCRIPTION	DATE	APPROVED
A	ECO#00883: INITIAL RELEASE M.COOK	11/11/2025	S.HUDSON

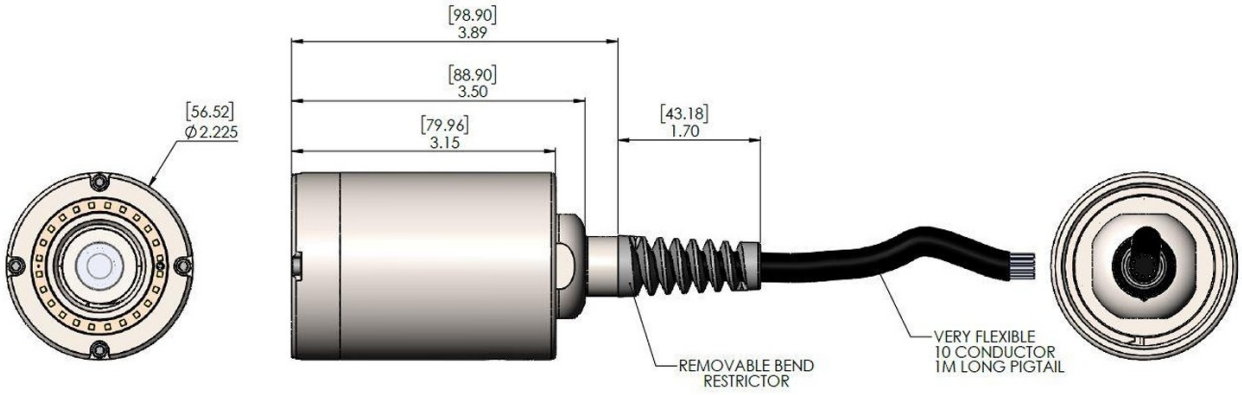






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LOOSE PIGTAIL IP OR CVBS CONFIGURATION:



DESIGN:

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