SIDUS Solutions

SS511 Low-Light HD Full-Color Camera System

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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.

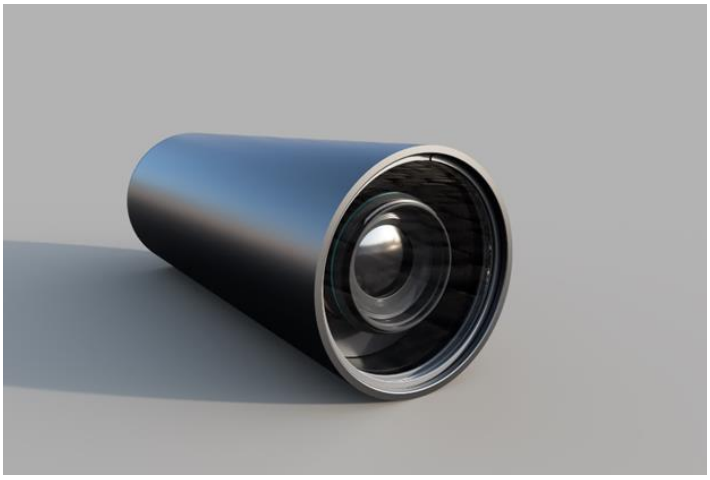
Original manufacturer source

https://www.sidus-solutions.com/wp-content/uploads/2025/02/SS511_Low_Light_HD_Color_Video_Camera_Datasheet.pdf

Manufacturer pages follow unchanged. Local distribution copy.

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SS511 ~ Low Light Color Video Camera Specifications



The SS511 low-light, high definition, full color day/night video camera is a cutting-edge imaging solution specifically designed for operation in the most demanding environments, offering exceptional performance in the lowest light conditions in place of the limited capabilities of thermal cameras. The SS511 camera features a remarkably low-light sensor with 0.0005 lux minimum subject illumination. Single-Shot auto focus, manual or automatic Iris, and digital zoom are available through the remote TCP/IP connection.

The SS511 contains a high sensitivity full HD 35mm full frame equivalent CMOS sensor. This brings great noise reduction compared to previous generation technology when shooting in low light. The camera can shoot color in dim environments with little video noise. All camera options are adjustable via the Remote-Control IP address. The video stream can be viewed through the IP interface using the ONVIF standard in H.264/H.265 and MJPG. Supported streaming formats are MPEG-2 TS (UDP), RTP, RTSP, RTSPS, RTMP, RTMPS, SRT, and TSRTP.

Features:

- Full color, high definition
- Temperature range of -4°F to 122°F (-20°C to 50°C)
- Integrates seamlessly with a range of platforms, including autonomous underwater vehicles (AUVs), unmanned surface vessels (USVs), and manned systems, providing flexible deployment options for both above- and below-water operations.
- Digital zoom can be used to achieve 2x, 3x and 4x zoom
- Long-range lens options increase capabilities in low light
- Low Latency IP video streaming using the ONVIF standard in H.264/H.265 and MJP
- Output resolution, both streams 1920 x 1080 pixels, 30FPS
- 2 separate IP interfaces run parallel through one ethernet connection
- Up to 100m Depth Rating
- Auto Focus, Auto White Balance, Auto Iris/Exposure, Auto Gain

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IMAGE SPECIFICATIONS:

Image Sensor	35mm full-frame equivalent CMOS sensor Rolling Shutter
Pixel Size	19um x 19um
Color Filter Array	Bayer RGB
System Frequency	59.94 Hz, 50.00 Hz
Max Frame Rate	30 fps
Effective Pixels	~2.07M
Total Pixels	3.02M
Maximum Gain (ISO)	75 dB (4,560,000)
Exposure	AE Shift, standard light metering
White Balance	Automatic white balance, preset A, preset B, Daylight, and Incandescent lighting
Iris	Manual, Automatic
Focus	One-Shot Auto Focus, Far, Near
Gamma	Standard presets, Wide Dynamic Range, Logarithmic, Linear
Image Processing	DIGIC DV4
Optical Filter	Low Pass
Digital Zoom	2x, 3x, 4x [center focused]
Full Well Charge	61,000 e @ gain x 1
Dark Random Noise	2.2 e rms @ gain x 16, room temperature

IMAGE CONTROL

Focus Control	Motor-Driven Control
Resolution/Frame Rate	1920 x 1080 resolution, Max 30fps
Shutter Speed	9.51 to 1/24000

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ENVIRONMENTAL:

Minimum subject illumination	0.0005 lx or lower* (ISO 4,000,000 equivalent)	
	* Under the following conditions: color, no light accumulations, f/1.2, shutter speed 1/30, 50 IRE, max gain 75db	
Angle of view	In Air	In Water
	35mm Lens: 63°	35mm Lens: 46°
	50mm Lens: 46°	50mm Lens: 34°
Window	Sapphire or acrylic optically corrected	
Housing material	Aluminum, stainless steel, titanium	
Housing Dimensions	35mm: 16” (excluding connector), 5.56” diameter	
	50mm: 14” (excluding connector), 5.56” diameter	
Weight	35mm: 16.5 lbs (7.50 kg) in air	
	50mm: 16 lbs (7.25 kg) in air	

FEATURES:

Communication	Ethernet
Iris	Automatic, manual
Focus	Auto Focus available via remote command

IMAGE CONTROL

Connector 1	MCBH-8
Connector 2	DBH13M

ELECTRICAL REQUIREMENTS

Power Requirements	12-24 VDC, 20W MAX

DESIGN:

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NOTES:
1. PERFORMANCE SPECIFICATIONS:
   a. 35MM FULL FRAME CMOS SENSOR W ROLLING SHUTTER
   b. ILLUMINATION REQS: < 0.0005 LUX
   c. FIXED 50MM LENS
   d. FOV WITH 50MM LENS: 46° IN AIR
   e. OPTICALLY CLEAR SAPPHIRE LENS
2. ENVIRONMENTAL REQUIREMENTS:
   a. OPERATING TEMPERATURE: -4°F TO 122°F (-20°C TO 50°C)
   b. OPERATING INTERNAL HUMIDITY: 20% TO 90% RH NON-CONDENSING
   c. STORAGE TEMPERATURE: -20°C TO +85°C
   d. STORAGE INTERNAL HUMIDITY: 10% TO 95% RH
   e. VIBRATION TOLERANCE: 10~500Hz, 2G 10min./1CYCLE, 60min. EACH ALONG X,Y,Z AXES.
   f. OPERABLE TO A DEPTH OF 100M
3. ELECTRICAL REQUIREMENTS:
   a. INPUT VOLTAGE: 12-24VDC
   b. 20W MAX
4. PRODUCT PART NUMBER IS A DERIVATION OF THE DOCUJMENT NUMBER, AS FOLLOWS:
   a. 904004302-XX, WHERE "XX" IDENTIFIES AS A PARTICULAR CONFIGURATION OF THE PRODUCT. SEE PART NUMBER/ CONFIGURATION TABLE FOR AVAILABLE CONFIGURATIONS.

REVISIONS			
REV.	DESCRIPTION	DATE	DRAWN
A	INITIAL RELEASE	12/20/2023	JW
B	REMOVED SUNSHIELD	2/28/2024	JW



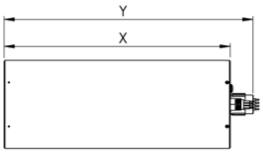


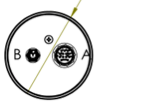
DETAIL B
SCALE 1 : 1





DETAIL A
SCALE 1 : 1





LENGTH TABULATION TABLE			
PART#	LENS SIZE	"X" LENGTH W/O BULKHEAD CONNS	"Y" LENGTH W/ BULKHEAD CONNS
904004304	35mm	16	17.8
904004303	50mm	14	15.8

PART NUMBER / CONFIGURATION TABLE			
DASH#	DESCRIPTION	MATERIAL	WEIGHT (LBS.)
904004302-01	ASSEMBLY, SS510 LOW LIGHT, AL HARD BLACK ANODIZE	ALUMINUM	11
904004302-02	ASSEMBLY, SS510 LOW LIGHT, TITANIUM	TITANIUM	16
904004302-03	ASSEMBLY, SS510 LOW LIGHT, 316SS ELECTRO-POLISH	STAINLESS STEEL	26

MATERIAL: N/A
FINISH:

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UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES AND MAYBE REFERENCED IN [MILLIMETERS].
TOLERANCES:
ANGULAR: MACH± 1° BEND±1°
X.XX ± .01 [.25]
X.XXX ± .005 [.125]
U.O.S.
DIMENSIONING AND TOLERANCING PER ASME Y14.5M & 84.3 APPLY

	NAME	DATE
DRAWN	J. WAITS	12/21/23
CHECKED	L. POOL	12/21/23
ENG APPR.	A. ALBARRAN	12/21/23

THIRD ANGLE PROJECTION

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TITLE: ASSEMBLY, OI, SS511 LOW-LIGHT CAMERA, FIXED LENS

SIZE	DWG. NO.	REV
B	9040043XX-XX OI	B

SCALE: 1:5 | WEIGHT: | SHEET 1 OF 1