



RADIATION TOLERANT CAMERAS

C981™

Compact System Camera



FEATURES

- High performance color picture
- Pan, tilt, zoom, video and power over three twisted pairs
- One 19 in. sub-rack to control up to eight cameras
- 8-channel lighting and microphone sub-racks
- RS-485 control of sub-racks
- Change camera outstation without adjustment
- Software protocol and hardware can address up to 128 channels of cameras and lighting
- Simple cable
- Ability to update any channel to a high radiation tolerant channel as required

APPLICATIONS

- Process monitoring
- Safeguard surveillance
- In-containment viewing
- Waste management
- Guidance and posting

DESCRIPTION

The C981 Compact camera range builds on the success of the standard C981 camera but offers a low radiation tolerant pan, tilt and zoom camera with a smaller sized envelope. Ideal for locating in areas where space is at a premium, we have combined the camera and pan and tilt into an integral unit and provided three positions for additional lights and microphone. The color CCD compact can be configured into multi-camera configurations, or a single camera system can be supplied.

Mirion is an experienced world-leading supplier of large turnkey television surveillance systems to the nuclear industry.

SPECIFICATIONS AND PERFORMANCE

Camera Outstation	
Housing Material	Stainless steel
Operating Temperature in Air	0 to 40 °C (32 to 104 °F)
Operating Temperature in Water	0 to 50 °C (32 to 122 °F)
Radiation Tolerance	100 Gy [⁶⁰ Co] (H ₂ O) 10 ⁴ Rad [⁶⁰ Co] (H ₂ O)
Operating Dose Rate	100 Gy/hour (10 ⁴ Rad/hr)
Sealing	IP68 (IEC529) 60 m water depth (W.W. Fischer stainless steel connector type SE105Z069-27) IP66 (IEC529) fully washable (LEMO stainless steel remote handling cable connector type FZJ3N318TLMY)
Maximum Operating Depth	20 m (66 ft)
Maximum Submersion Depth	60 m (197 ft)
Cable Connection	18-way remote handling LEMO or 12-way Fischer
Pan and Tilt	Speed: 6° per second Travel: ±180° (adjustable)
Size with Pan and Tilt	221 x 162 x v160 mm (H x W x D) (8.8 x 6.5 x 6.3 in.)
Weight	3.2 kg (7 lb) without lights or microphone

Camera Channel Performance	
Effective Pixels	1945 (H) x 1097 (V)
Illumination	0.5 lux @ f1.6
Signal-to-Noise Ratio	>52dB (weighted)

Optics	
Zoom Lens	33x optical (60.1° - 2.1°), 12x digital
Iris	auto f1.6
Electronic Shutter	Auto: 1/60 to 1/300000 NTSC 1/50 to 1/300000 PAL

8-Channel Camera System Sub-rack	
Nominal Power Supply Input	100–120/200–240 V (auto-ranging); 50/60 Hz
Operation Range	85–132/170–264 V (auto-ranging); 47–440 Hz
Power Requirement	150 VA for a fully populated 8-channel CCU
Outstation Cable Length	300 m (984 ft) maximum CCU to camera (consult Mirion)
Operating Ambient Temperatures	Fully populated, convection cooling: 0 to 40 °C (32 to 104 °F). Up to six channels, convection cooling: 0 to 50 °C (32 to 122 °F) Fully populated, forced air cooling at 500 liters (132 gallons)/minute: 0 to 50 °C (32 to 122 °F)
Relative Humidity	20%-75% non-condensing
Size	134 x 483 x 300 mm (H x W x D) (5.3 x 19 x 11.8 in.) (excluding handles and connectors)
Weight	7 kg (15.4 lb)

CCU Connector Types	
AC Power	IEC 320 plug (fitted with T4A fuse)
Camera Inputs (8 off)	15-way Type D socket
Video Outputs (8 off)	75R BNC
Genlock Input	75R BNC (with 75R termination switch)
Sync Pulse Output	75R BNC
Serial Control Input	9-way Type D plug
Serial Control Loop Through	9-way Type D socket

Optional Accessories	
Camera Attachments	Camera allows for up to three attachment positions for a combination of microphone and lights
Lights for Underwater	Up to 200 W using 100 W lamps
Lights in Air	Up to 150 W using sealed 50 W lamps or 75 W vented lamps
Lighting Sub-rack	8-Channel
Microphone	For in-air use only
Microphone Sub-rack	8-Channel

SPC-48-EN-B_DMD – 01/2022

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