



RADIATION TOLERANT CAMERA

C981™

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 cameras without adjustment
- Software protocol and hardware can address up to 128 channels of cameras and lighting
- Seismic qualification available
- Captions at the source
- Modular design for easy assembly/install
- Simple cable
- Integral version available
- Option available without pan and tilt
- Ability to update any channel to a high radiation tolerant channel as required

DESCRIPTION

Mirion Technologies is an experienced world-leading supplier of large turnkey television surveillance systems to the world's nuclear industry. Major multi-camera system installations are an essential part of the process monitoring requirements for nuclear power stations and waste handling facilities. New safety requirements relating to plant life extensions and new power plant construction demand the use of television systems to continuously monitor machinery and key plant areas within secondary containment.

The C981 camera range has been specifically designed to suit these large multi-camera configurations. Alternatively, single camera channels can be supplied as ideal inspection and surveillance tools.

APPLICATIONS

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

SPECIFICATIONS AND PERFORMANCE

Camera Outstation	
Housing Material	Stainless steel
Operating Temperature	0 to 40 °C (32 to 104 °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)
Camera Midpoint Connector	24-way
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	294 x 266 x 240 mm (H x W x D) (11.6 x 10.5 x 9.4 in.)
Weight	13 kg (28.7 lb) without lights or microphone

Optics	
Zoom Lens	33x optical (60.1° - 2.1°), 12x digital
Iris	auto f1.6
Electronic Shutter	Auto: 1/60 to 1/30000 NTSC 1/50 to 1/30000 PAL

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

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

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)

Optional Accessories	
Camera Attachments	Camera allows for up to four attachment positions for a combination of microphone and lights
In-air or Underwater Lights	Up to 300 W using 50, 75 or 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

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Mirion Technologies (IST) Ltd and Mirion Technologies (Imaging), LLC are ISO 9001:2015 certified companies (certificates available on request or at www.mirion.com).

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