



MIRION
TECHNOLOGIES

RADIATION TOLERANT CAMERA

R981TM Compact

System Camera

The R981 Compact camera range builds on the success of the standard R981TM but offers a full 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 R981 Compact can be configured into multi camera configurations, or a single camera system can be supplied.

Mirion is the world's most experienced supplier of large turnkey television surveillance systems to the nuclear industry.



FEATURES

- ✓ Class leading radiation tolerance
- ✓ Pan, tilt, zoom, video and power over three twisted pairs
- ✓ Radiation tolerant telemetry
- ✓ High resolution monochrome picture
- ✓ One 19" sub-rack to control up to 8 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

APPLICATIONS

- ✓ Process monitoring
- ✓ Safe guard surveillance
- ✓ In-containment viewing
- ✓ Waste management
- ✓ Guidance and posting

R981 COMPACT SYSTEM CAMERA

SPECIFICATIONS AND PERFORMANCE

Camera Outstation:

- Housing Material: Stainless steel
- Operating Dose Rate: 1 kGy/hour (Chalnicon tube)
- Operating Temperature in Air: 0 to 55 °C (35 to 131 °F) (Chalnicon tube)
- Radiation Tolerance: 1 MGy [⁶⁰Co] (H₂O); 10⁸ Rad [⁶⁰Co] (H₂O)
- Operating Temperature in Water: 0 to 70 °C (32 to 158 °F)
- Weight: 4.7 kg (10.4 lbs) without lights or microphone
- Maximum Operating Depth: 20 m (66 ft)
- Cable Connection: 18-way remote handling LEMO or 12-way Fischer
- Maximum Submersion Depth: 60 m (197 ft)
- Pan and Tilt:
Speed: 6° per second
Travel: ±180° (adjustable)
- Size with Pan and Tilt: 221 mm (H) x 162 mm (W) x varying 220 mm to 280 mm (D) (8.8" x 6.5" x varying 8.8" to 11.2")
- Sealing: IP68 (IEC529) 60m water depth (W.W. Fischer stainless steel connector type SE105Z069-27) IP66 (IEC529) fully washable (LEMO stainless steel remote handling cable connector type FZJ3N318TLMY)

Camera Channel Performance (Camera and CCU Combined):

- Horizontal Resolution: 550 HTV lines
- Sensitivity (faceplate): 1 lux (Chalnicon tube)
- AGC Range: -6 dB to 20 dB
- Signal to Noise Ratio: 43 dB (CCIR weighted, AGC at 0 dB)
- Geometric Distortion: 2% maximum

R981 Non-Browning Lens Options:

- Lens: Viewing Angle: In Air
- 6:1 12 mm-72 mm zoom: 40° wide; 7° narrow
- 6:1 24 mm-144 mm zoom: 21° wide; 3.5° narrow
- 3:1 8 mm-24 mm zoom: 58° wide; 21° narrow

Eight 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: 150VA for a fully populated 8-channel CCU
- Outstation Cable Length: 300 m (984') maximum CCU to camera (consult Mirion)
- Operating Ambient Temperatures:
Fully populated, convection cooling: 0 to 40 °C (32 to 104 °F)
Up to 6 channels, convection cooling: 0 to 50 °C (32 to 122 °F)
Fully populated, forced air cooling at 500 litres (132 gallons)/minute: 0 to 50 °C (32 to 122 °F)
- Relative Humidity: 80% for temperatures up to 31 °C decreasing linearly to 50% at 40 °C
- Size: 134 mm (H) x 483 mm (W) x 300mm (D) (5.3" x 19" x 11.8") (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 D type 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 D type plug
- Serial Control Loop Through: 9-way D type socket

Optional Accessories:

- Camera Attachments: Camera allows for up to 4 attachment positions for a combination of microphone and lights
- Lights for Underwater: Up to 200W using 100W lamps
- Lights for Air: Up to 150W using sealed 50W lamps
- Lighting Sub-rack: 8 Channel
- Microphone: For in-air use only
- Microphone Sub-rack: 8 Channel



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