RADIATION-TOLERANT CAMERA

R981 COMPACT™

System Camera

The R981 Compact™ camera range builds on the success of the standard R981™ 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
- Guidence and posting

R981 Compact™ | SYSTEM CAMERA

SPECIFICATIONS AND PERFORMANCE

CAMERA OUTSTATION

Housing Material	Stainless steel	**Operating Dose Rate**	1k Gy/hour (Chalnicon tube)
Operating Temperature in Air	0 to 55 °C (35 to 131 °F) (Chalnicon tube)	**Radiation Tolerance**	1 MGy [^{60}Co] (H_2O); 10^8 Rad [^{60}Co] (H_2O)
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-BROWING LENS OPTION

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

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

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	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 lbs)

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

MIRION TECHNOLOGIES