RadCam®

RADCAM® IS A COLOR SENSOR CAMERA WHICH IS DESIGNED FOR INSTALLATION WITHIN THE REACTOR CONTAINMENT BUILDING AND OTHER RADIOACTIVE AREAS

- High resolution color sensor camera
- New patented design – for excellent protection of camera and electronics
- Integrated radiation sensors
- Pan / Tilt / Zoom with variable speed
- 28x optical zoom
- Focus: Auto / Manual
- Iris: Auto / Manual
- 2x halogen lamps, spot & wide
- Video output: Coax and 2-wire
- Audio output: FM audio via 2-wire
- Communication ports
  - LONWORKS® with protocol for AVISS
  - RS-485 with protocol to other systems
- Advanced self diagnostics
- Trouble-free installation and service
- Custom adopted to existing
- Cable connector and bracket
- Option: Rugged Microphone Kit

LEADING RADIATION TOLERANT CAMERA SYSTEMS

The RADCAM® is a proven standard when it comes to advanced audiovisual process surveillance within NPPs.

With its patented neutron absorbing outer body, its high tolerance to gamma radiation, and an effective on board cooling system, the RADCAM® from ISEC is a camera that is designed to survive within the harshest of environments.

The RADCAM® is the first of a new series of cameras developed for the specific needs and environment in the NPPs. All camera models are adapted to be integrated with the AVISS system and they can also easily be integrated with other control systems. RADCAM® incorporates a new patented camera shielding and cooling technology that will protect the CCD camera and its control logic. The result is a camera that is very reliable in the environment of the reactor containment building and other radioactive areas.

The RADCAM® also has additional qualities that are requested in a modern control room by the reactor and turbine operators - high availability, brilliant picture and sound quality, auto focus, 28x optical zoom, low light sensitivity, high temp tolerance (up to 90°C) and easy maintenance (replacement of spare parts in less than 5 minutes) makes RADCAM® the ideal camera for nuclear power plants.

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“Nothing Goes Undetected”
### Camera module

- **Sensor**: 1/4" day/night color sensor w/ 670 TVL, 0.7 lux at F1.6, 1/50s and 50 IRE
- **Optical zoom**: 25x f=3.5mm (Wide) to f=91mm (Tele)
- **Viewing horizontally**: 42°-1.6° from wide to tele
- **S/N ratio**: 75 dB due to thermoelectric cooling
- **Focus**: Yes, auto and manual
- **Iris**: Yes, auto and manual
- **Signal output**: PAL or NTSC

Utilizes the same camera module as used in the RADCAM

### Microphone (optional)

- **Microphone element**
- **Characteristics**
- **Frequency Response**: Designed to withstand radiation, Omni directional
  - 20 – 20,000 Hz, ± 3 dB

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- 20 – 20,000 Hz, ± 3 dB

### Pan/Tilt unit

- **Pan**: ± 165°, .045° / step, full turn in 11 s
- **Tilt**: ± 90°, .045° / step, half turn in 7 s
- **Protected position**: Yes, Automatic in use with AVISS
- **Variable speed pan/tilt**: Yes, limits are set via internal keyboard
- **Manually adjustable pan limits**: 2x 35W following the Pan/Tilt

± 180°, .045° / step, full turn in 11 s
± 90°, .045° / step, half turn in 7 s
Yes, Automatic in use with AVISS
Yes, 0 – 45° / s
Yes, limits are set via internal keyboard
2x 35W following the Pan/Tilt

### Video output

- **Unbalanced for coax**: BNC Connector: 1 VPP / 75Ω
- **Balanced for 2-wire**: System connector: 1 VPP / 120Ω

BNC Connector: 1 VPP / 75Ω
System connector: 1 VPP / 120Ω

### Audio output

- **Modulation**: Frequency modulation, 400 kHz
- **Balanced for 2-wire**: Syst. Connector: FM-signal 1 Vpp/120Ω

Frequency modulation, 400 kHz
Syst. Connector: FM-signal 1 Vpp/120Ω

### Communication ports

- **LonWorks**: System Connector in use with AVISS
- **RS-422 / RS-485 /**: Optional: Different protocols installed

System Connector in use with AVISS
Optional: Different protocols installed

### Power requirements

- **Voltage and frequency**: Power: 230/110/100/24 VAC - 50/60 Hz
  - 200 VA
- **Effect**: Slow 2A/230 VAC and 5A/ 100-110 VAC

Power: 230/110/100/24 VAC - 50/60 Hz
200 VA
Slow 2A/230 VAC and 5A/ 100-110 VAC

### Physical characteristics

- **Size**: H: 430mm L: 460mm W: 350mm
- **Free space around unit**: Radius: 320mm, Height: 430mm
- **Weight**: 26.5 Kg (58.4 Lb.)

H: 394mm L: 410mm W: 300mm
Radius: 277mm, Height: 394mm
19.5 Kg (42.9 Lb.)

### Environment

- **IP class**: IP 65 (camera module)
- **Operational temperature °C**: 5 – 65°C, max 90°C for 8 hours
- **Operational temperature °F**: 40 – 150°F, max 195°F for 8 hours
- **Humidity**: 0 – 100% RH, non-condensing
- **Vibration**: 2 – 9 Hz 1.5mm, 9 – 200 Hz acc. 5m/s²
- **Pressure**: 5 Bar above normal atm. pressure

IP 65
5 – 60°C, max 85°C for 8 hours
40 – 140°F, max 185°F for 8 hours
0 – 100% RH, non-condensing
2 – 9 Hz 1.5mm, 9 – 200 Hz acc. 5m/s²
5 Bar above normal atm. pressure

### Radiation

- **Type of protection**: Neutron and gamma protection
- **Internal sensor(s)**: Internal radiation sensors

### EDP numbers

- **PAL**: 992-0334, 992-0335, 992-0336
- **NTSC**: 992-0340, 992-0341, 992-0342

### Options

- **Radiation hardened Microphone Kit**: 992-0310, 992-0304
- **Camera Module PAL**: 992-0305
- **Camera Module NTSC**: 992-0311
- **Control Module CPU w. cooling pod**: 992-0301
- **Spare Part Kit PAL**: 992-0300
- **Spare Part Kit NTSC**: 992-0301

* consists of 1 Camera Module, 1 Control Module, 2 fans and 2 halogen lamps