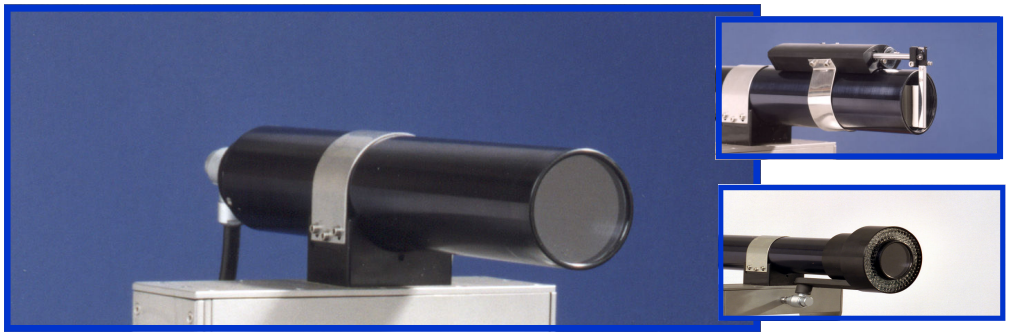
CR2225 Single Piece Radiation Tolerant TV Camera



The CR2225 is a single piece radiation tolerant camera. It will operate in dose rates up to 10^6 Rads/hr and accumulated dose of $2x10^8$ Rads. High quality tubes are used to ensure maximum picture quality. The cameras are light and easy to handle. They are typically used for surveillance and viewing in radiation areas, such as waste management and vitrification facilities. Close inspection of components can also be performed using the macro-focus facility. The CR2225 cameras operate fully automatically, i.e. power in, video out.

Construction

The cameras can be supplied with a range of lenses with different field angles. Two housings can be provided, aluminium or stainless steel. Both offer protection against dust and water ingress. The stainless steel case offers the greatest protection, to IP68 standard, meaning it is submersible in up to 50m of water. Typically an aluminium housing offers protection up to IP65.

The cameras are certified to operate in temperatures up to 50°C in air (aluminium case), although they can work in temperatures up to 100°C if cooled with an additional jacket. LED or quartz halogen lights can be fitted externally to provide illumination.

For surveillance purposes the cameras can be mounted on pan and tilt units, also supplied by Centronic Ltd.

Control

Centronic Ltd can supply controls systems. Large suites of cameras can be controlled using Centronic supplied radiation tolerant telemetry. This telemetry can also be used to control lenses, pan-tilts, lights and wipers.

CR2225 Camera
Technical Specification

Video Signal	Composite to EIA or CCIR standard (factory set); peak white limit at +0.7V; sync pulses -0.3V (Direct output from camera or output from control unit).
Video Processing	Black level clamp, variable gamma correction, aperture correction.
Scanning Format	525 line, 60 fields/second, 2:1 interlace (EIA) or 625 line, 50 field/second, 2:1 interlace (CCIR)
Sync system	Crystal controlled.
Image Format	2/3 inch.
Resolution (limiting)	650 TV lines per picture height (centre field).
Scene illumination	200 lux for top quality pictures, 20 lux for usable pictures (when fitted with f2 lens) - Vidicon.
Spectral Response	400-650 nm (50%) vidicon
Dimensions & Weight of Camera	63mm dia. X 172mm long. 725gm without lens
Typical Length with lens fitted	16 - 96mm zoom: 368mm long 8 - 24mm zoom: 238mm long 4.5mm fixed focus: 198mm long 9mm fixed focus: 200mm long 15mm fixed focus: 232mm long 25mm fixed focus: 195mm long
Focus range	Varies with lens, e.g. with 9mm lens, 500mm to infinity. Closer focus possible with optional motorised internal focus.
Environmental tolerance	Operates in water to depths of 50m (stainless steel case). Operating temperature: 0 - 45°C (in air), (up to 60°C in water).
Power Supply	12 Vdc (11.5 → 13.5V), (700 - 750 mA).
Radiation Tolerance (gamma)	Total dose > $2x10^8$ Rads Dose rate > 10^6 Rads/hour
Camera housing	IP65 Black hard anodised aluminium, washable by spraying from all angles. IP68 304 stainless steel submersible to 50m in water.
Connectors	Latching environmental Fischer connectors Jupiter FET type Both can be configured for telemanipulator connectable/disconnectable applications.
Control Unit option	For single camera: 2U high 19 inch rack mounted version unit with front panel controls. Provides control and power to camera, pan-tilt, lights and wiper. For multiple cameras: Control systems can be supplied for up to 256 cameras.

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