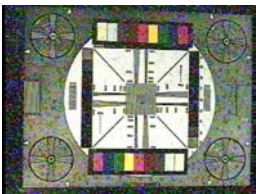


Radiation tolerant, Color, Simple to Operate

Designed for use in high radiation environment such as reactor inspection, spent fuel management, waste management, and other critical path applications where radiation tolerance, simple setup, and rapid deployment are required. The AquaRAD can also be used in air, mounted to remotely operated vehicles, or mounted to underwater pan and tilt mechanisms.

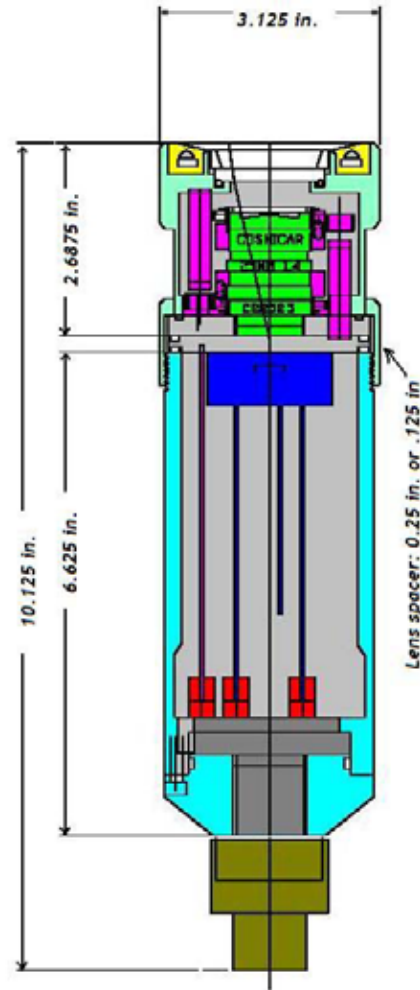
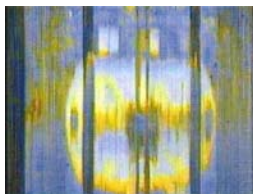
Why CID?

The Charge Injection Device is the world's most widely used radiation tolerant solid state imager. Unlike charge coupled devices, there is no "snow" from gamma, and no sudden failure of the imager after exposure. CID Imagers are designed to be radiation tolerant, not just shielded or modified. Our cameras use no lead shielding, and all electronics in the camera head are radiation tolerant.



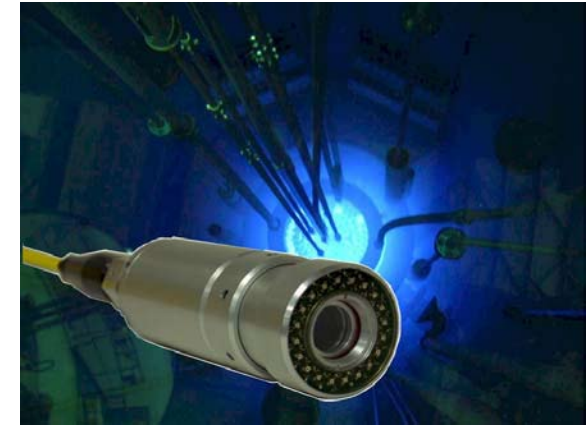
← CCD image at t=0, 100 Gy/hr Cobalt-60 source

CCD image after 1 hr., 100 Gy (0.01 MRad) →



symphotic Tii
corporation

Take A Closer Look



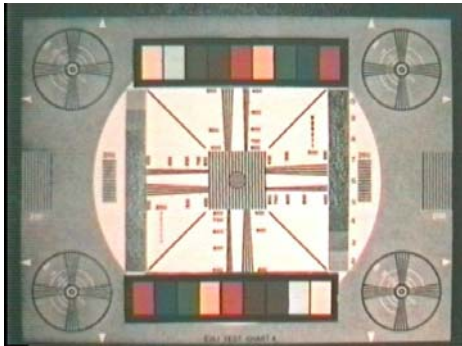
The Camera:AquaRAD

Radiation Tolerant Color Camera for Underwater Use.

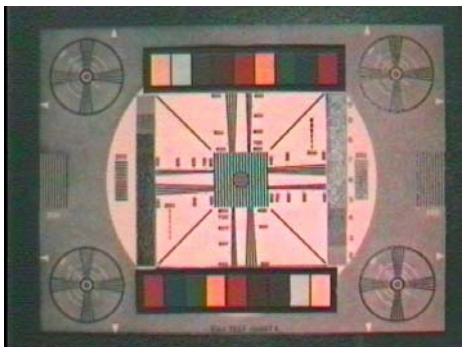
Roper Resources Ltd
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Facsimile: (250) 361-9115
Email: chris@roperresources.com
Web: www.roperresources.com

Radiation Tolerant Color Camera for Underwater Use

The Camera: AquaRAD is the first radiation tolerant solid state camera for color imaging underwater. Simple to operate, modular design, portable. The AquaRAD has resolution, color, and radiation tolerance for critical inspections and monitoring.



AquaRAD image under radiation, 10,000
Rad/hr (100 Gy/hr)



AquaRAD image under radiation: 10,000
Rad/hr (100 Gy/hr), after 45 hr .

The Camera: AquaRAD Specifications:

Submersible Charge Injection Device based solid state color camera system for use in high radiation environments such as nuclear power plant refueling operations, inspections, and spent fuel management.

Imager:

2/3 in optical format radiation tolerant charge injection device.

TE cooled.

Imager and electronics radiation tolerant to $>3 \times 10^6$ Rad(Si) total dose = 3×10^4 Gy.

Self-annealing for higher total dose.

>400 TVL Horizontal resolution, capable of resolving a 1/2 mil wire against an 18% gray card at 6 in.

Interchangeable Lens Systems:

25 mm f/1.4 standard lens for low radiation work. Shop replaceable.

25 mm f/1.4 Radiation tolerant lens (non-browning).

12 -72 mm f/1.8 Radiation tolerant zoom lens. (non-browning).

Close up lighting:

20 high intensity LEDs for close-up lighting.

Radiation tolerant materials

Variable intensity controller

Selectable lighting: off, full ring, left oblique or right oblique lighting

Camera, Lens and Lighting Control Unit:

Remote Control unit with focus, aperture and zoom control.

Rugged, water resistant housing.

The Camera: AquaRAD specifications (continued)

Camera Head dimensions (with 25 mm lens):

280 mm length x 80 mm diameter, 2160 g
10⁵/₈ in. length x 3¹/₈ in. diameter, 4³/₄ lbs.

Cable:

40 meter radiation tolerant pressure tested cable. 37 conductors.

16 VDC maximum voltage.

100-120 V 50/60 Hz

Video Output: NTSC Color video using standard coaxial cable with BNC connector.

Options Available:

Pan and Tilt Mechanism

Custom cable lengths

Custom connectors for penetration

Mounting hardware

Stainless steel housing

External lighting

For more information or a demonstration contact:

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