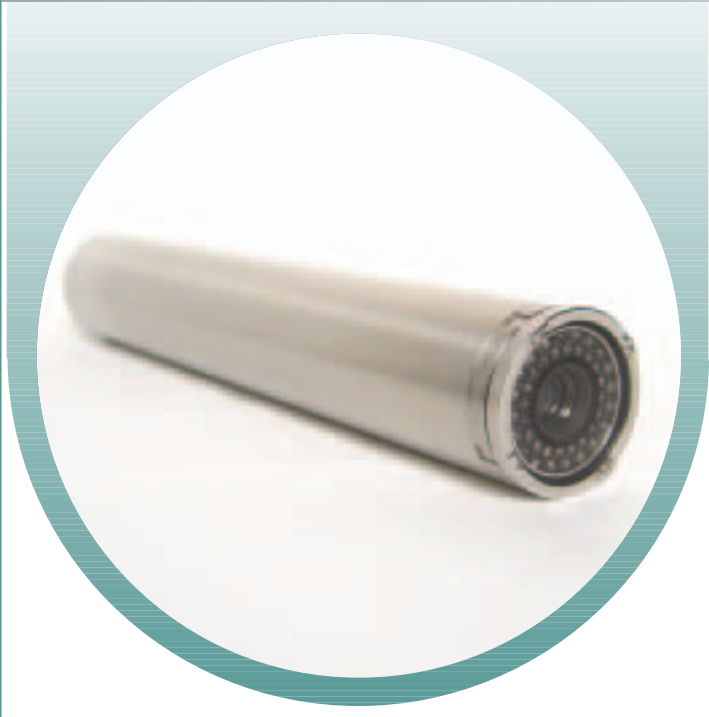


D40

RADIATION TOLERANT SPLIT-HEAD CAMERA SYSTEM



Wide range of interchangeable lenses and viewing heads

Withstands irradiation dose up to 2×10^8 RAD without sacrificing video quality

Premium quality video with 5:1 optical zoom, 2X analog zoom and auto-iris



A configurable radiation tolerant split-head video camera for inspection in highly radioactive environments.

The D40 radiation tolerant monochrome video camera is one of the most sophisticated and versatile cameras in the world. The non-browning optical components and remotely located electronics allow this camera to withstand irradiation dose up to 2×10^8 RAD without sacrificing video quality. In addition, with a diameter of just 40 mm, the camera can be maneuvered into confined spaces for inspection.

The D40 is available with a wide range of interchangeable viewing heads and lenses for various inspection tasks. Options include frontal or right angle viewing lenses equipped with or without integrated LED lights, a continuous rotation unit and a 5:1 optical zoom lens.

Other camera features include: a 2X analog zoom lens, auto-iris, auto-exposure, and edge enhancement. The analog zoom allows the operator to see small details of the inspected object without the pixelation effects of digital zoom. Auto-iris provides optimum contrast of the image while auto-exposure optimizes light intensity, camera iris and AGC. Edge enhancement function enhances the sharpness of the small and low contrast details. These features act in unison to create the highest quality video possible for many different applications.

The D40 is ideally suited for nuclear related applications. The underwater camera's stainless steel housing is corrosion resistant and completely sealed for use in air and up to 40 m (130 feet) depth underwater. It is built with smooth surfaces to allow for easy decontamination. The D40 is designed with a quick and simple tube replacement methodology that includes only three potentiometer adjustments with a screwdriver at the CCU.

The D40 is designed and manufactured to meet stringent quality standards. All stages of the production cycle are rigorously controlled from component receipt to factory acceptance test. The result is a rugged, robust and reliable radiation tolerant camera system.

D40 - Radiation Tolerant Camera Heads



17 mm lens
:: Radiation tolerant non-browning glass
:: Standard viewing angle
:: High sharpness image
:: Best for standard application



6 mm lens
:: Radiation tolerant non-browning glass
:: Wide viewing angle
:: Increased depth of field
:: Best for pipeline inspection



15-72 mm zoom lens
:: Radiation tolerant non-browning glass
:: 5:1 optical zoom
:: Macro focusing capability
:: Camera module is installed inside zoom lens housing



Plain frontal head w/o lights
:: Radiation tolerant non-browning glass
:: 40.5 mm (1.6") - diameter
:: To be used with either 6 mm and 17 mm lens



Frontal view head with LED lights for 17 mm lens
:: Radiation tolerant non-browning glass
:: LED lights
:: 40.5 mm (1.6") - diameter



Frontal view head with LED lights for 6 mm lens
:: Radiation tolerant non-browning glass
:: LED lights
:: 40.5 mm (1.6") - diameter



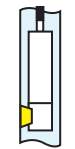
Frontal view head with extra LED lights for 6 mm lens
:: Radiation tolerant non-browning glass
:: LED lights
:: 65 mm (2.56") - diameter



Radial view head with far and near field lights
:: Radiation tolerant non-browning glass
:: LED lights
:: 40.5 mm (1.6") - diameter



Radial view head with near field lights
:: Radiation tolerant non-browning glass
:: LED lights
:: 40.5 mm (1.6") - diameter



RADIAL VIEW



Rotation Unit
:: 40.5 mm (1.6") - diameter; 166 mm (6.5") length without connectors
:: 360° - rotation angle
:: 7 degrees/second - rotation speed
:: To be installed between camera and cable
:: To be used for pipe inspection in conjunction with radial view head

D40 - Radiation Tolerant Camera Specifications

Head installed on camera Characteristic	17 mm Lens	6 mm Lens	Frontal Head	17 mm Frontal Head w/ Lights	6 mm Frontal Head w/ Lights	6 mm Frontal Head w/ Extra Lights	Radial Head w/ Near and Far Field Lights	Radial Head w/ Near Field Lights	15-72 mm Zoom Lens
Light-sensitive element	Enhanced Chalnicon tube 2/3"								
Resolution (in center) ¹	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines	600 TV Lines
Sensitivity ¹	16 lux	32 lux	-	-	-	-	-	-	24 lux
Signal/Noise Ratio	46 dB	46 dB	46 dB	46 dB	46 dB	46 dB	46 dB	46 dB	46 dB
Zoom ²	2x	2x	2x	2x	2x	2x	2x	2x	10x (5x2)
Viewing angle (in air)	34°	82°	-	-	-	-	-	-	5° - 43°
Viewing angle (in water)	26°	59°	-	-	-	-	-	-	4° - 32°
Iris range	1.4 - 16	2.8 - 16	-	-	-	-	-	-	2.2 - 16
Focusing distance (air)	50mm - ∞	20mm - ∞	-	-	-	-	-	-	50mm - ∞
Length with head ³	-	-	246 mm	246 mm	245 mm	250 mm	343 mm 533 mm ⁴	297 mm 487 mm ⁴	371 mm
Diameter	-	-	40.5 mm	40.5 mm	40.5 mm	65 mm	40.5 mm	40.5 mm	74.5 mm
Camera weight with installed head	-	-	1 kg	1 kg	1 kg	1.2 kg	1.5 kg	1.3 kg	2.7 kg
Dose rate of γ -irradiation	up to 10 ⁶ Rads/h (10 ⁴ Gy/h)								
Integral dose of γ -irradiation	2x10 ⁸ Rads (2x10 ⁶ Gy)								
Operating environment	Air, Water, Boric Acid								
Max. Temperature (air)	55° C (130° F)								
Max. Temperature (water)	65° C (140° F)								
Depth Rating	40 m (130 ft)								

¹ When analog zoom is switched off.

² 15-72 mm zoom lens: 5x – optical zoom, 2x – analog zoom. Total – 10x.

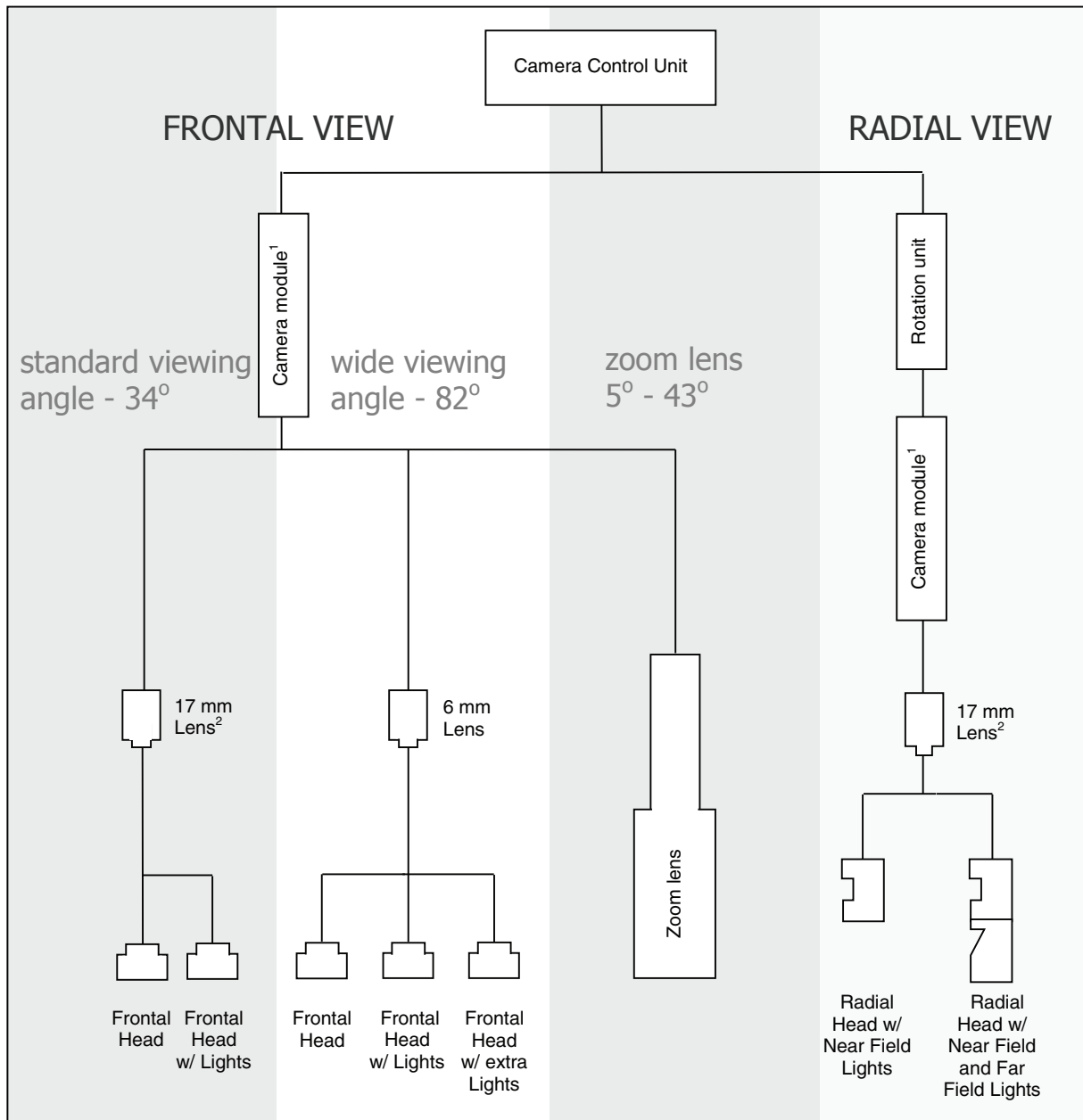
³ Without cable connector. Length of cable connector: 131 mm.

⁴ Without cable connector. Rotation angle of the rotation unit - 360°, rotation speed – 7 degrees/s.

* Standard mode: 1m – to ∞, macrofocusing mode: 50 mm – 1 m.



D40 - Radiation Tolerant Camera System Configurations



¹ The same camera module, cable and camera control unit are used in all the configurations

² When configuration is changed from frontal view to radial view the same lens is used



5618 Copley Drive
San Diego, CA 92111 USA
Tel (858) 565-8500
Fax (858) 565-8808
East Coast Office (804) 754-3936

www.rosys.com
sales@rosys.com