



FOR MORE
INFORMATION



inVIZ[®] DE 2.4 / DE 4.0

The world's slimmest, most versatile heat exchanger / steam generator video inspection system

Employing only the latest LED illumination technology, breaking glass fibres are obsolete history for INVIZ[®] customers. 25 lumen + light turbo mode is enabling to illuminate even 4" / 100mm ID round pipes. Two optimized (light sensitive) optics (100° FOV and 60° FOV) will make your probe to the best possible inspection tool for your facility. Benefit from colorful and high contrast, forget about annoying noise in the image. At only 2.4 mm thick, the INVIZ[®] DE 2.4 inspection camera can maneuver through the narrow tube lanes created by the space saving arrangement of the tubes in nuclear steam generators (incl. Siemens KWU style) and

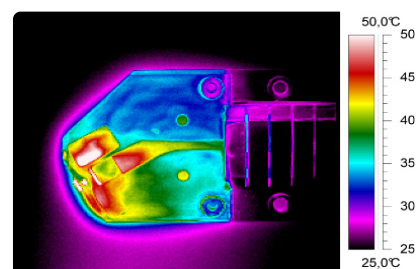
conventional heat exchangers. The world's slimmest INVIZ[®] DE 2.4 camera allows to make a wide range of special narrow (gap) inspections, in spaces which have never been reached by high resolution optics before. Our engineering team has made a great effort to offer camera solutions which may be operated with delivery tools or operated by hand. Alternatively the even higher resolved INVIZ[®] DE 4.0 style can be adjusted in image sharpness and direction of view (+/-30°), while allowing custom made probes of up to 15 Meter – not forgetting the working channel preparation for foreign part retrieval tools.

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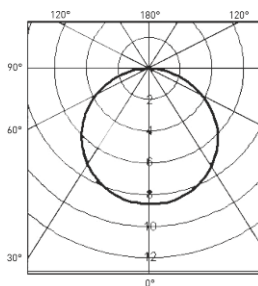
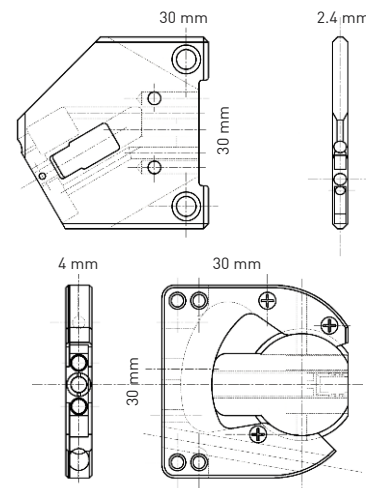


INVIZ® DE 2.4		INVIZ® DE 4.0	
Control unit / Processor			
Power requirements	96 - 256VAC, 50/60Hz		
Dimensions in mm (inch)	Standard: (W) 260 x (L) 205 x (H) 45		
Operation	Light adjustment, White balance setting (color adjustment)		
Output	Composite VBS and S-VHS (Y/C) out, NTSC or PAL (depending on camera)		
Option	Outlet for digital INVIZ LCD image and movie recorder		
Other	19" housing available CCU can only serve DE 2.4 or DE 4.0		
Camera head			
Video	PAL 360 TV lines, 290.000 Pixel NTSC 330 TV lines, 250.000 Pixel		PAL 470 TV lines, 440.000 Pixel NTSC 460 TV lines, 380.000 Pixel
Optical system	100° FOV standard optic, 3 mm to 200 mm fix focus field of depth Option: 60° 'tele' lens system, fix-mounted, non interchangeable.		Focus adjustable 60° FOV, range 3mm to infinity, typical depth of field 8 mm to 100 mm. Direction of view adjustable +/- 30°.
Magnification example	Usage with 14" CRT monitor 100° FOV: 10x / 20 mm distance.		Usage with 14" CRT monitor 60° FOV: 18x / 20 mm distance.
Illumination	Two high power white LED's, individually dimmmable, protected electric circuit, illumination distribution: view chart. Option: optical fibres (Fibre + LED) available to boost illumination range.		As INVIZ® DE 2.4, no fibre illumination option available.
Dimensions	Thickness 2.4 mm (-0.03 mm), other dimensions see chart, custom designed (down-) sizing is available (custom shape).		Thickness 4.0 mm (+/-0.05 mm), other dimensions view chart, custom designed (down-) sizing is available (custom shape).
Water tightness	1 bar / 15 psi		0.5 bar / 7.5 psi
Other	-		2.1 mm hole for attachment of non-included retrieval tools prepared.
Video probe			
Working length	Standard 2 m, extension option available. Max. 6.5 m probe.		
Umbilical cord	2.5 m PU coated, protected cable, extension option available, max. up to 10 m (INVIZ® DE 2.4) or 15 m (INVIZ® DE 4.0) total combination length.		
Probe construction	Open frame 2.4 mm insertion belt, stainless steel, high flexible design for (not included) delivery tool operation. Option internal glass fibre push rods for manual operation available.		
Operating / storage environment			
Camera operation range	-25°C to 65°C [-13°F to 150°F] LED operation -25°C to 80°C [-13°F to 175°F] Non-LED operation		
CCU operation range	-20°C to 45° C [-4°F to 115°F]		
Gamma / neutron dose rating	Not specified due to wide, random lifetime deviations; within average of semiconductor specs.		

All specifications are subject to change without notice due to technical progress.



Innovative heat management limiting emission from LED's



Optimized illumination for 60° and 100° FOV



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