Waygate Technologies
a Baker Hughes business

Mentor Visual iQ UV VideoProbe

Fluorescent penetrant testing with UV light

The Mentor Visual iQ Video Borescope, combined with a UV light source, integral quartz light fibers and correct UV optics and filters, presents the optimal solution for fluorescent penetrant inspections. This solution delivers maximum UV light levels, with low reflection, and the ability to access small remote areas of equipment.

Functional principle of the fluorescent penetrant test

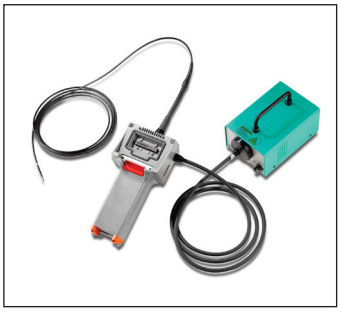
The surface is first cleaned, then wetted with a fluorescent penetrant. The penetrant is drawn into small surface defects by capillary action. After a rinse step, the penetrant remains only in the defect, which can be seen and measured using the UV light.

Scope of application

The compact size of the integrated probe and UV light makes new applications possible. Difficult to access components such as turbine blades or weld seams can be examined insitu. In automotive manufacturing, some manufacturers add UV fluorescent substance to auto body sealing wax to inspect and verify the coating process. The Mentor Visual iQ system with UV is available from 3.9 mm to 8.4 mm diameter probes, so inspections are possible in equipment with access of only 4.0mm!

UV light source

In order for UV-versions of the Mentor Visual iQ system to meet[1] ASTM Specification E1417/E1417M – 16, it is recommended that the UV light source used to supply UV-light energy to the Mentor Visual iQ system be GEIT P/N ELS-50LEDUV. This is a White-Light/UV-Light switchable light source that when used with the Mentor Visual iQ UV probes allows conformance with ASTM E1417/E1417M – 16 UV and white light specifications. See product specification data sheet for the ELS-50LEDUV for full technical specifications.



Quartz Fiber QuickChange™ probe with quartz light guide and LED UV/White Light Source PN: ELS-50LEDUV. Olympus and ACMI style light source connector

Mentor Visual iQ UV QuickChange probe and UV light source standard case and accessories

[1] Mentor Visual iQ UV probe has been tested using Labino Apollo 1.0 to meet UV and visible light outputs as specified in ASTM E1417/E1417M – 16

Mentor Visual iQ UV QuickChange™ Probes

Model number	Diameter	Length	Illumination fibers	Optical tips
MVIQAP3920-9167	3.9 mm (0.15″)	2.0 m (6.6 ft.)	Quartz	Standard
MVIQAP3930-9168	3.9 mm (0.15″)	3.0 m (9.8 ft.)	Quartz	Standard
MVIQAP4020-8947	4.0 mm (0.15″)	2.0 m (6.6 ft.)	Quartz	Standard
MVIQAP4030-8890	4.0 mm (0.15″)	3.0 m (9.8 ft.)	Quartz	Standard
MVIQAP4035-9021	4.0 mm (0.15″)	3.5 m (11.5 ft.)	Quartz	Standard
MVIQAP6120-8948	6.1 mm (0.24″)	2.0 m (6.6 ft.)	Quartz	Custom
MVIQHP6120-9255 *(New HD)*	6.1 mm (0.24″)	2.0 m (6.6 ft.)	Quartz	Custom
MVIQAP6130-8889	6.1 mm (0.24″)	3.0 m (9.8 ft.)	Quartz	Custom
MVIQAP6160-9101	6.1 mm (0.24″)	6.0 m (19.7 ft.)	Quartz	Custom
MVIQAP61100-8960	6.1 mm (0.24″)	10.0 m (32.8 ft.)	Quartz	Custom
MVIQAP8420-8949	8.4 mm (0.33″)	2.0 m (6.6 ft.)	Quartz	Standard
MVIQAP8430-8937	8.4 mm (0.33″)	3.0 m (9.8 ft.)	Quartz	Standard
MVIQAP8445-8956	8.4 mm (0.33″)	4.5 m (14.8 ft.)	Quartz	Standard
MVIQAP84100-8982	8.4 mm (0.33″)	10.0 m (32.8 ft.)	Quartz	Standard

6.1mm UV-Optimized Tips

Optical tips	Color	FOV (deg)	DOF mm	(in)
Forward view				
XLG3T61UV-8528	White	50	12-200	(.47-7.87)
XLG3T61UV-8553	Orange	80	3-20	(.12-.79)
XLG3T61UV-8581	Black	120	5-120	(.20-4.72)
XLG3T61UV-8593	Yellow	90	20-inf	(.79-inf)
Side view				
XLG3T61UV-8535	Green	50	9-160	(.35-6.30)
XLG3T61UV-8582	Blue	120	4-100	(.16-3.94)
XLG3T61UV-8554	Red	80	1-20	(.04-.79)

The 6.1 mm diameter Mentor Visual iQ uses custom optical tips with superior UV transmitting material to optimize UV output performance.

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