Laser accessories

4Lasers offers variety of laser accessories designed and dedicated to enhance your capabilities to visualize, guide and to monitor near infrared (NIR) and ultraviolet (UV) laser beams parasitic reflections or losses in the fibers.

Infrared (IR) viewers ABRIS M

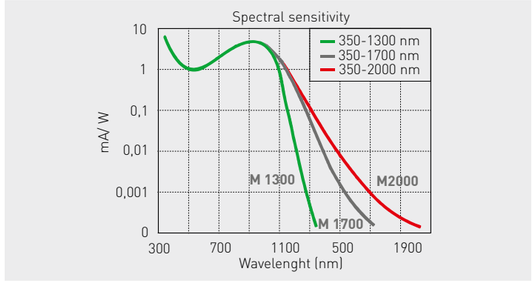
Contour M near infrared (NIR) CCD camera with

Compact infrared (IR) viewers SM-3R

Contour near infrared (IR) digital CMOS camera

UV-NIR laser beam visualizers

Infrared (IR) viewers ABRIS M



Infrared (IR) viewers are used to observe, register and record both indirect and direct radiation of IR lasers, light emitting diodes (LED's), dye and other IR-sources. It is ideal for IR-laser beam alignment and inspection, optical fiber alignment, telecommunications, solar panel inspection, photo processing, surveillance and investigation in botany, biophysics, medicine, forensics and art restoration, infrared microscopy, fluorescence etc.
High performance image conversion infrared (IR) viewers based on high-grade image converter are designed to observe indirect radiation of infrared laser, light emitting diodes (LED), dye and other IR-sources in 350–2000 nm spectral range.

(IR) Infrared viewer is based on a first-generation high-grade image converter that has an electro-static focusing system, photocathode S-1+ with increased concentration of oxygen and screen of type P-20 with maximum of luminescence at 550 nm.
Infrared viewer focus emitted or reflected light from a chosen subject into the image tube where electron image is generated. When powered (with battery or power supply) the 16-18 kV voltage is generated required to accelerate the electron image into the output phosphor screen. The fluorescent green light output (550 nm) is observed via an adjustable eyepiece lens.

Main features

- Spectral region 350-2000 nm
- Resolution 60 Lp/mm
- Hand-held / post mounted
- Battery + DC powered
- Up to 35 hours continuous working
- Pulsed and CW light detection

Application examples

- Laser alignment and safety
- Semiconductor inspection
- Forensics and art restoration
- Photo processing
- Thermal imaging

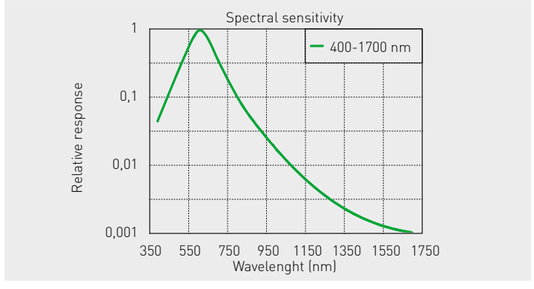
Specifications

IR-VIEWERS ABRIS M SERIES SPECIFICATIONS	
Resolution (centre)	60 Lp/mm
Working distance of lens	12,5 (+/-0,2) mm
Battery	1,5V, 1x "AAA" size
Non-uniformity of screen	< 20 %
Non-uniformity of response	< 15 %
Distortion of image	<18 %
Battery life (continuous)	35 hours
External power supply	DC 3V, 30 mA
Weight	0,4 kg
Dimensions	140 x 78 x 52 mm
Temperature range	-10 °C … 40 °C
Tripod or handle connection	R"1/4"

Standard products

SPECTRAL SENSITIVITY	FIELD OF VIEW	MAGNIFICATION	OBJECTIVE LENS	ADJUSTABLE IRIS	FOCUS	SKU
350-1300 nm	40°	1X	F1,4/26 mm	Available	0,15m (0,05m) to inf, (with distance ring)	7654
350-1300 nm	20°	2X	F1,8/50 mm	Included	0,5m (0,15m) to inf, (with distance ring)	7656
350-1700 nm	40°	1X	F1,4/26 mm	Available	0,15m (0,05m) to inf, (with distance ring)	7404
350-1700 nm	20°	2X	F1,8/50 mm	Included	0,5m (0,15m) to inf, (with distance ring)	7657
350-2000 nm	40°	1X	F1,4/26 mm	Available	0,15m (0,05m) to inf, (with distance ring)	7655
350-2000 nm	20°	2X	F1,8/50 mm	Included	0,5m (0,15m) to inf, (with distance ring)	7658

Contour M CCD camera with display



The near infrared Contour M camera has a built in 4-inch display. Camera is designed for observation, registration and recording radiation in near infrared zone emitted by infrared sources such as GaAs IR LED, diode or solid-state lasers as well as for use in infrared microscopy, infrared luminescence, examination of documents, forensics, art restoration etc.
The Contour M is ideal for the alignment of infrared beam and optical components in infrared systems in the 400-1700 nm spectral region. With Built-in 12V external charger and battery compartment ensures longer and comfortable operation of device.
The CCD camera is based on a high-sensitive low-noise silicon CCD sensor and two-photon absorption phenomenon. Superior image quality is obtained with micro lens system and special coating layer on a silicon. The four-stage system of automatic control and superior anti-blooming feature allows operation in a much wider spectral range. The device can be used hand-held or with tripod.

Main features

- Spectral region 400-1700 nm
- Built in display
- Battery + DC powered
- Up to 2,5 hours continuous working
- High sensitivity
- IR cut-off filter, batteries, AC/DC adapter and case included

Application examples

- Laser alignment and safety
- Semiconductors inspection
- Forensics and art restoration
- Photo processing
- Thermal imaging

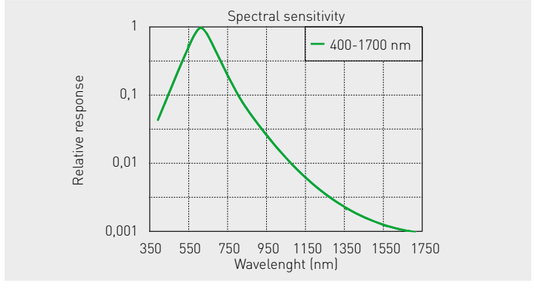
Specifications

CONTOUR M CCD CAMERA WITH DISPLAY SPECIFICATIONS	
Focusing range	0,2 m (or 0,1 m with distance ring) to inf
Sensor size	1/3 inches, 6,3 x 4,7 mm
Pixel size	6,5(h) x 6,25(w) µm
Display	4 inch TFT-LCD 480×234
Maximum resolution	300 TV lines
Resolution at maximum sensitivity	135 TV lines
Ratio signal-to-noise	46 dB
Video output/input	CCIR Standart composite video
Functions	Brightness, Contrast
Power supply	4x "AA" type rechargeable batteries, DC 12 V, 400 mA stabilized
Temperature range	+5… +40 °C
Weight	0,77 kg
Dimensions	160 x 95 x 100 mm

Standard products

ITEM MODEL	SPECTRAL SENSITIVITY	VISUAL MAGNIFICATION	LENS	FIELD OF VIEW	SKU
CONT-M	400-1700nm	1X	F1,4/26mm, C-mount	10°	7659

Contour near infrared (IR) CCD camera



The near infrared Contour-IR camera is designed for observation, registration and recording radiation in near infrared zone in 400-1700 nm spectral region emitted by infrared sources such as GaAs IR LED, diode or solid-state lasers as well as for use in infrared microscopy, infrared luminescence, examination of documents, forensics, art restoration and etc.

The camera is based on a high-sensitive low-noise silicon CCD sensor and two-photon absorption phenomenon. Superior image quality is obtained with micro lens system and special coating layer on a silicon.

Main features

- Spectral region 400-1700 nm
- High sensitivity CCD camera
- Small and compact
- Tripod fixed
- Cost-effective
- Video output

Application examples

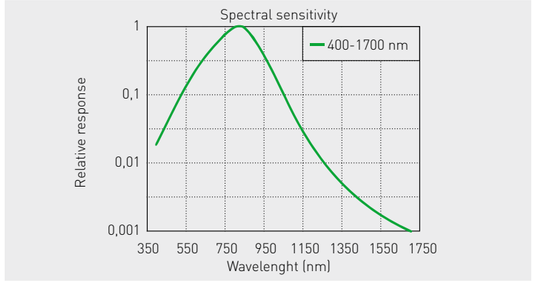
- Laser alignment and safety
- Semiconductors inspection
- Forensics and art restoration
- Photo processing
- Thermal imaging
- Technical information

CONTOUR IR CCD CAMERA SPECIFICATIONS	
Field of view	10°
Focusing range	0,2 m (or 0,08 m with distance ring) to inf
Ration signal-to-noise	48 dB
Video output	CCIR Standard composite video
Power supply	DC 10 … 14 V, 150 mA
Temperature range	+5 … +40 °C
Weight	0,23 kg
Dimensions	90 x 50 x 58 mm

Standard products

SPECTRAL SENSITIVITY	SENSOR SIZE	MAXIMUM RESOLUTION	RESOLUTION AT MAXIMUM SENSITIVITY	LENS	SKU
400-1700 nm	1/3 inches, 6,0 mm x 4,96 mm	570 TV lines	135 TV lines	F1,4/26 mm, C-mount	7660

Contour near infrared (IR) digital CMOS camera



The near infrared Contour IR Digital camera is designed for observation, registration and recording radiation in near infrared zone in 400-1700 nm spectral region emitted by infrared sources such as GaAs IR LED, diode or solid-state lasers as well as for use in infrared microscopy, infrared luminescence, examination of documents, forensics, art restoration and etc.

The camera is based on the newest technology CMOS sensor with increased sensitivity, micro lenses on photo cells and intensifying cascades in each element. Camera is connected to PC via USB 2.0 (USB 3.0) cable.

Main features

- Spectral region 400-1700 nm
- Newest technology CMOS sensor with micro lenses
- Controlled from a computer via USB2.0 and USB3.0
- High sensitivity
- IR cut-off filter and case included

Application examples

- Laser alignment and safety
- Semiconductors inspection
- Forensics and art restoration
- Photo processing
- Thermal imaging

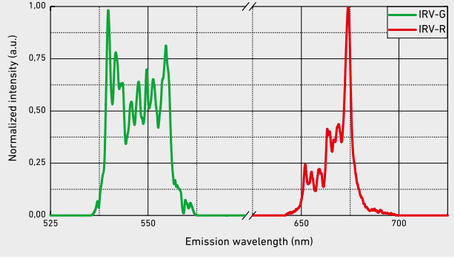
Specifications

CONTOUR IR DIGITAL CMOS CAMERA SPECIFICATIONS	
Sensor	CMOS 1/3" 1280 (h) x 960 (w)
Pixel size	3,75 x 3,75 µm
Dynamic range	60 dB
Ratio signal-to-noise	54 dB
Format 1	1280 x 960 (4, 8, 12.5, 16, 25, 30 Hz)
Format 2	1280 x 720 (5, 10, 15, 20, 30, 40 Hz)
Format 3	800 x 600 (6.25, 12.5, 20, 30, 40, 50 Hz)
Format 4	640 x 480 (8, 16, 25, 32, 50, 64 Hz)
Range of exposure	$3{,}4\times10^{-5}$–$3{,}4\times10^{-2}$ s
Weight	0,2 kg
Dimensions	55 x 55 x 75 mm

Standard products

SPECTRAL SENSITIVITY	SENSOR SIZE	LENS	FIELD OF VIEW	FOCUSING RANGE	SKU
400-1700 nm	1/3 inches, 6,0mm x 4,96mm	F1,4/26mm, CS-mount	10°	0,15m to infinity	7663

UV-NIR laser beam visualizers



Laser beam visualizers are designed to detect UV and IR both CW and pulsed laser light radiation.
These visualizers are fabricated from aluminum with an organic polycrystal photosensitive region, which enables easy location of UV-VIS-NIR light beams and focal points. As it is not necessary to charge the active region both CW and pulsed laser light will be detected even in darkened room conditions.

Main features

- Wavelength detection from UV to NIR
- Suitable for CW and pulsed laser light
- High sensitivity to laser radiation – 0,1 mW/mm^2
- Damage threshold for pulsed laser – 1 J/cm^2, 10 ns
- Both sides active

Application examples

- Laser alignment
- Research

Standard products

CLEAR APERTURE	ITEM MODEL	DETECTION SPECTRAL RANGE	EMISSION COLOR	THRESHOLD SENSITIVITY	SKU	PRICE
35 mm	IRV-R-1	190-1090 + 1470-1600 nm	Red	0,01 W/cm^2	7662	89 €
	IRV-G-1	880-1070 nm	Green	0,02 W/cm^2	7661	75 €

Notes