



**OPTOGAMA**



IR-viewers ABRIS M

**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
- PC connection via video adapter

High performance image conversion 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.



**OPTOGAMA**

## Miniature IR-viewer SM-3R



### Main features

- Spectral region 350 - 2000 nm
- Compact
- Battery powered
- Hand-held / tripod fixed
- Up to 100 hours continuous working
- IR cut-off filter, batteries, case and more are included

### Miniature IR-viewer SM-3R series specifications

Resolution (centre) 50 Lp/mm

Working distance of lens 12.5 (+/-0.2) mm

Battery 2xLR44 or CR1/3N

Non-uniformity of screen <20%

Non-uniformity of response <15%

Distortion of image <18%

Battery life (continuous) 10 hours (up to 100 hours with AAA batteries adapter)

External power supply -

Weight 0.3kg

### Application examples

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

The SM-3R is a miniature infrared viewer that fits comfortably in the palm of a hand or on a face-mask for hands free operation. This viewer is suitable when size and weight are more important.

(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.

Model	Spectral range	Resolution	Field of view	Magnification
1700-1	350-1700 nm	50 Lp/mm	25°	1,8X
1700-2	350-1700 nm	50 Lp/mm	12°	3,4X
2000-1	350-2000 nm	50 Lp/mm	25°	1,8X
2000-2	350-2000 nm	50 Lp/mm	12°	3,4X

(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.

#### IR-viewer 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 0.4kg

Dimensions 140x78x52 mm

Temperature range -10°C...40°C

Tripod or handle connection R"1/4"

## Application examples

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

Model	Spectral range	Resolution	Field of view	Magnification	Objective lens	Focus	Adjustable iris
1700-1	350-1700 nm	60LP/m	40°	1X	F1,4/26 mm	0,15m (0,05m) to inf. (with distance ring)	Available
1300-1	350-1300 nm	60LP/m	40°	1X	F1,4/26 mm	0,15m (0,05m) to inf. (with distance ring)	Available
2000-1	350-2000 nm	60LP/m	40°	1X	F1,4/26 mm	0,15m (0,05m) to inf. (with distance ring)	Available
1300-2	350-1300 nm	60LP/m	20°	2X	F1,8/50 mm	0,5m (0,15m) to inf. (with distance ring)	Included
1700-2	350-1700 nm	60LP/m	20°	2X	F1,8/50 mm	0,5m (0,15m) to inf. (with distance ring)	Included
2000-2	350-2000 nm	60LP/m	20°	2X	F1,8/50 mm	0,5m (0,15m) to inf. (with distance ring)	Included



**OPTOGAMA**

Contour M CCD camera with display



**Main features**

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

**Application examples**

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

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 and 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.

6.5(h)x6,25(w)  $\mu$ m

Display 4 inch TFT-LCD 480x234

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 12V, 400mA stabilized

Temperature range +5... +40°C

Weight 0,77kg

Dimensions (LxWxH) 160x95x100 mm

Model	Spectral range	Resolution	Field of view	Magnification	Objective lens
CONT-M	400-1700nm	300 TV lines	10°	1X	F1.4/26mm, C-mount



**OPTOGAMA**

## Contour IR CCD camera



Contour IR CCD camera

### 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

### 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...14V, 150mA



Temperature range +5... +40°C

Weight 0,23kg

Dimensions (LxWxH) 90x50x58 mm

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.

Model	Spectral range	Resolution	Field of view	Magnification	Objective lens	Sensor Size
CONT-IR	400-1700nm	570 TV lines	10°	1X	F1.4/26mm, C-mount	1/3 inches, 6.0mm x 4,96mm



**OPTOGAMA**

## Contour IR digital CMOS camera



### Main feature

- 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, case and more are included

### Application examples

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

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.

Contour IR digital CMOS camera specifications

Sensor CMOS 1/3" 1280(h)x960(w)

Pixel size 3,75x3,75  $\mu\text{m}$

Dynamic range 60 dB

Ratio signal-to-noise 54 dB

Format 1 1280x960 (4, 8, 12.5, 16, 25, 30 Hz)

Format 2 1280x720 (5, 10, 15, 20, 30, 40 Hz)

Format 3 800x600 (6.25, 12.5, 20, 30, 40, 50 Hz)

Format 4 640x480 (8, 16, 25, 32, 50, 64 Hz)

Range of exposure  $3,4 \times 10^{-5}$ – $3,4 \times 10^{-2}$  s

Weight 0,2kg

Dimensions (LxWxH) 55x55x75 mm