irvi infrared viewers

CATALOGUE

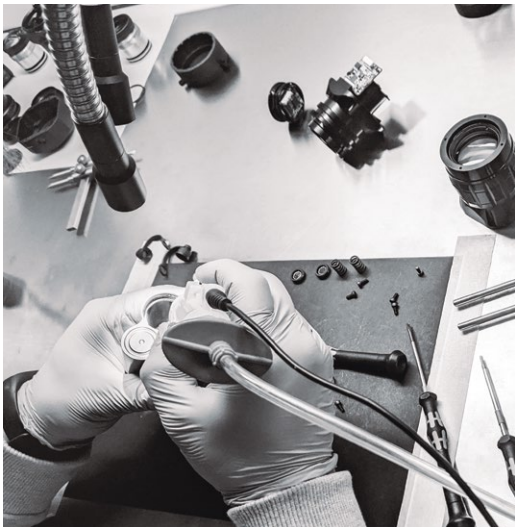
INFRARED VIEWERS AND CAMERAS

irvi infrared viewers

Who we are?

ADOS-TECH is hi-tech company based in Europe, Lithuania. Our engineer team have more than 10 years of experience in research, development, prototyping and production of various infrared optical devices including thermal, night vision imagers. IRVI brand holds scientific portfolio consisting of infrared viewers and cameras allowing to observe IR laser radiation in dark as well bright room conditions.

Our company being able to substitute the currently used highly expensive semiconductor technologies (such as InGaSb/GaAs), which are quite expensive with reliable solutions. IRVI devices offers great performance in infrared region at more accessible prices. It is an attractive goal worth our professional team sees working for.



Company address: Mokslininku st. 2A, Vilnius, Lithuania, EU.

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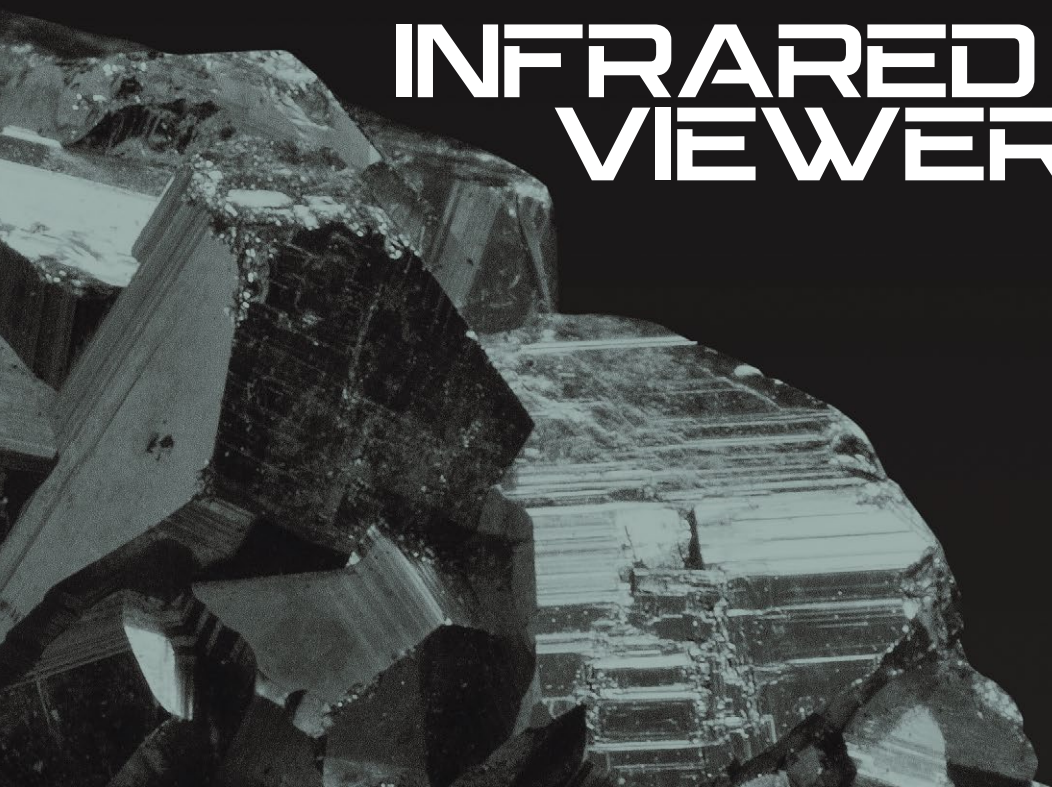
INFRARED VIEWERS



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INFRARED VIEWERS

High performance image conversion 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.

SPECTRAL RANGE

350 - 2000 nm

How does it work?

IR 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 phosphor with maximum of luminescence at 550nm.

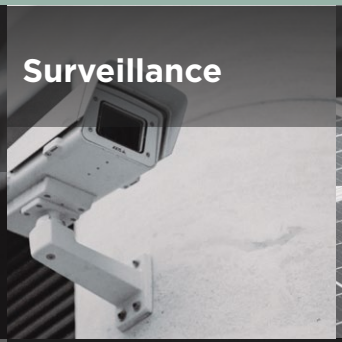
The infrared image is focused by means of optical objective onto photocathode of the tube which converts incident radiation into electrons. These electrons are electrostaticaly accelerated by 16-18kV voltage and focused onto the fluorescent screen. The image produced in the viewing screen may be viewed through an optical magnifier.

APPLICATIONS

IRVI production is used to observe, register, and record both indirect and direct radiation of IR sources.

IR-laser beam alignment and inspection

Surveillance



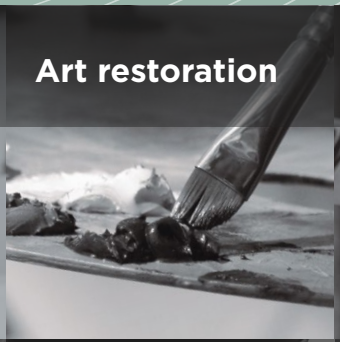
Solar panels inspection and electroluminescence

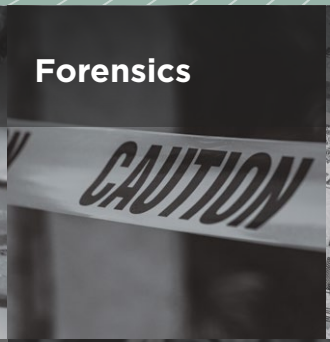
Biophysics and medicine

Optical fiber alignment

Semiconductors and telecommunications inspection

Photo processing


Art restoration


Forensics
CAUTION

Print, packaging inspection

Agriculture

Infrared microscopy

Food and beverage inspection

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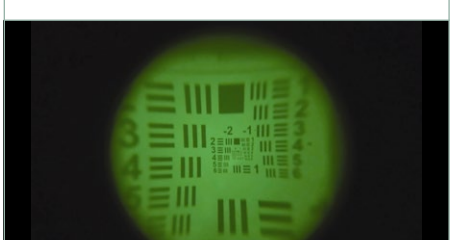
INFRARED VIEWERS

ABRIS M SERIES

HIGH SENSITIVITY

– +

2 YEARS WARRANTY



The ABRIS-M is a higher performance infrared conversion viewer compared to its counterparts. It is most suitable where sensitivity and resolution are crucial.

When an optical image is focused on the cathode, electrons are emitted with a density at each point proportional to the incident light. These electrons are accelerated by an electric field between the cathode and receptor, and, by virtue of their gain in energy, each electron can cause the emission of many more photons from the green phosphor screen. The observer can then see image of infrared object.

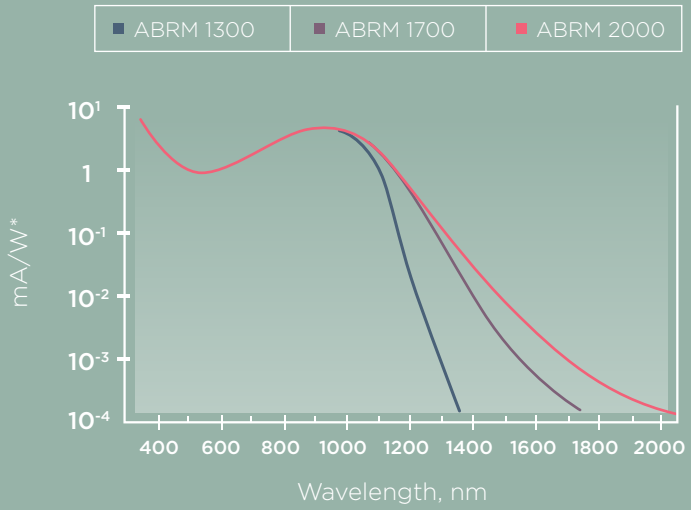
CE
RoHs

Technical information

	MODEL 1X	MODEL 2X
SPECTRAL SENSITIVITY	ABRM-1300-x (350-1300nm) ABRM-1700-x (350-1700nm) ABRM-2000-x (350-2000nm)	
FIELD OF VIEW	40°	20°
MAGNIFICATION	1X	2X
FOCUS	0.1m to ∞	0.5m (0.15m)* to ∞
Objective lens	F1.4/25mm	F1.8/50mm
Resolution (center)	60 Lp/mm	
Adjustable iris	Included	
Non-uniformity of screen	<20%	
Non-uniformity of response	<15%	
Distortion of image	<18%	
Battery	35 hours	
Battery life (continuous)	1.5V, 1x “AAA” size	
External power supply	DC 3V, 30 mA	
Weight	0.38kg	0.42kg
Dimensions	140x78x52 mm	145x78x52 mm
Tripod or handle	R”1/4”	

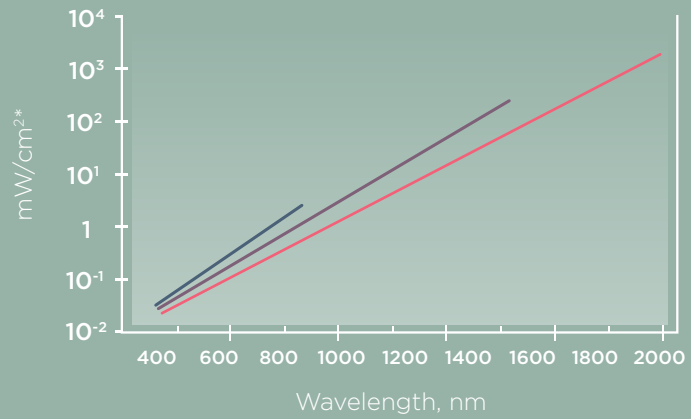
* with macro ring

SPECTRAL SENSITIVITY



POWER DENSITY

Approximate minimum of power densities required to view an infrared laser beam from a one meter distance:



*y axis represents log scale

PHOTOSENSITIVITY

The minimum detectable signal for a near-infrared viewer depends on:

- Power density;
- Wavelength of incident radiation;
- Effective aperture of the objective lens;
- Distance between observed target and the viewer;
- Time duration of the signal (pulsed or continuous);
- Reflectivity of the diffusing surface;
- Sensitivity of human eye or device used in viewing the output of the IR viewer.

Approximate minimum of power densities required for observing an infrared laser source from a distance of one meter:

20 $\mu W/cm^2$ for a 1060 nm | 500 $\mu W/cm^2$ for a 1300 nm

The IR viewer with sensitivity 350-2000 nm has the photocathode S-1+ type which contains the increased concentration of oxygen. It increases sensitivity of the photocathode. IR viewer can be used to view 2.0 µm laser beam at minimum power density 2 W/cm2. When operated in the 1500-2000 nm range, IR viewer has a low spectral response, therefore observations can be performed when the following requirements are met:

- Use an IR cut-off filter or interference filter and darken the room to reduce external background;
- Use a metallic surface for observation reflected radiation, as any other material might absorb infrared radiation.

STANDART KIT FOR MODEL 1X:

- IR viewer
- lens 1X
- C-mount ring
- IR filter
- handle
- battery and case

STANDART KIT FOR MODEL 2X:

- IR viewer
- lens 2X
- macro ring
- IR filter
- handle
- battery and case

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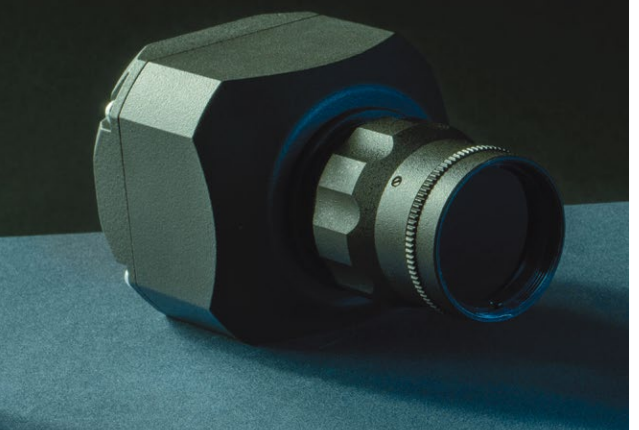
INFRARED CAMERAS

CONTOUR SERIES



We are offering CCD and CMOS based IR cameras which are designed for observation, registration, and recording radiation of infrared sources in **400 - 1700 nm** spectral region.

SPECTRAL RANGE

400 - 1700 nm

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We offer
TWO TYPES OF CAMERAS:

CCD CAMERA which is based on high-sensitivity, 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.

CMOS CAMERA with the newest technology CMOS sensor, micro lenses, and intensifying cascades in each element. These features allow operating cameras in much wider spectral region from 400nm to 1700nm. Usually, other CCD and CMOS cameras can be used only up to 1100nm.

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INFRARED CAMERAS

CONTOUR M CCD

Unlike conventional CCDs Contour M have much higher infrared sensitivity which is achieved by optimizing photodiode surface area and depth as well placing proprietary micro lens on each diode to better capture and focus the light. It gives higher saturation signal, lower smear, lower noise and higher quantum efficiency in lower light situations.

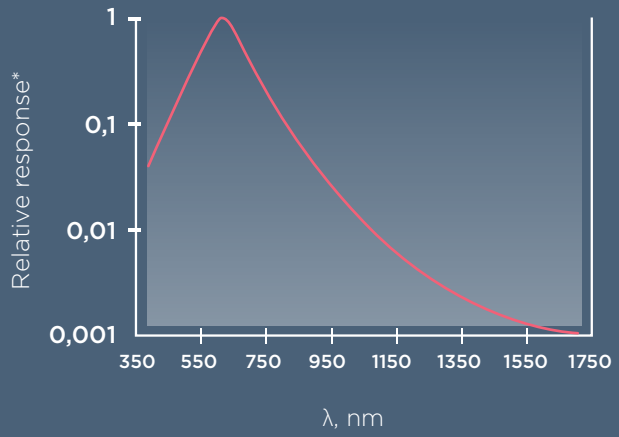
The use of a four stage automatic gain control system together with an automatic accumulation time control system allows camera to operate confidently in a wide range of illumination of objects for observation. The system of automatic control of the contrast of the image provides the possibility of increasing the contrast up to 20 times.

Main features:

SPECTRAL RANGE 400 - 1700 nm	BUILT IN 4” DISPLAY
UP TO 2,5 HOURS CONTINUOUS WORKING	BATTERY + DC POWERED
LIGHTWEIGHT	HAND-HELD / TRIPOD FIXED

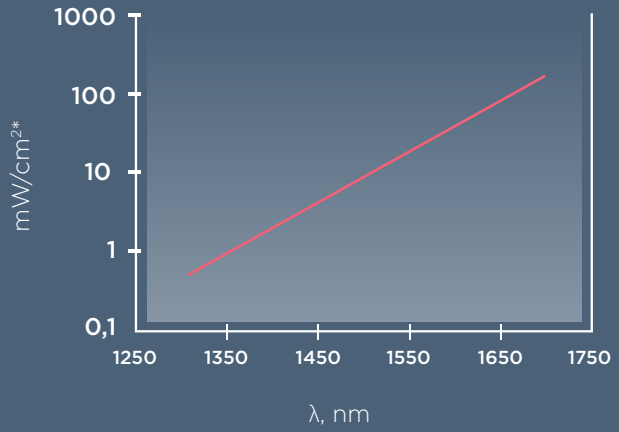
400-1700 nm

SPECTRAL SENSITIVITY



POWER DENSITY

The approximate minimum of power density of radiation on an object at the signal-to-noise ratio=10 (20dB) on a 0,15m distance:



*y axis represents log scale

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Technical information

SPECTRAL SENSITIVITY	400-1700nm

CUSTOMIZED UPON REQUEST

Lens	F1.4/26mm, CS-mount
Field of view	10°

Focusing range	0,2m (or 0,1m)* to inf
Sensor	6 mm x 4.96 mm (1/3), 537x597 px, 9.8 µm x 6,3 µm
Display	4 inch TFT-LCD 480x234
Max. resolution	300 TV lines
Resolution at max. Sensitivity	135 TV lines
Signal-to-noise ratio	46 dB
Gamma	0.45
Video output/input	CCIR Standard composite video
Functions	Brightness; Contrast; Video out
Power supply	4x “AA” type rechargeable batteries, DC 12V, 400mA stabilized
Weight	0.77 kg
Dimensions	160x95x100 mm

* C-mount adapter included

STANDART KIT FOR MODEL 1X:

- IR camera
- Macro ring
- C-mount ring
- IR filter
- 4x AA rechargeable batteries
- AC/DC adapter
- tripod
- manual and case

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INFRARED CAMERAS

CONTOUR IR DIGITAL CMOS

The Contour IR digital CMOS camera with an active–pixel array of 1280 (H) × 960 (V). It captures images in either linear or high dynamic range modes, with a rolling–shutter readout. It includes sophisticated camera functions such as auto exposure control, windowing, and both video and single frame modes. It is designed for both low light and high dynamic range scene performance. Camera produces extraordinarily clear, sharp digital pictures, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications.

Main features:

SPECTRAL RANGE

400 - 1700 nm

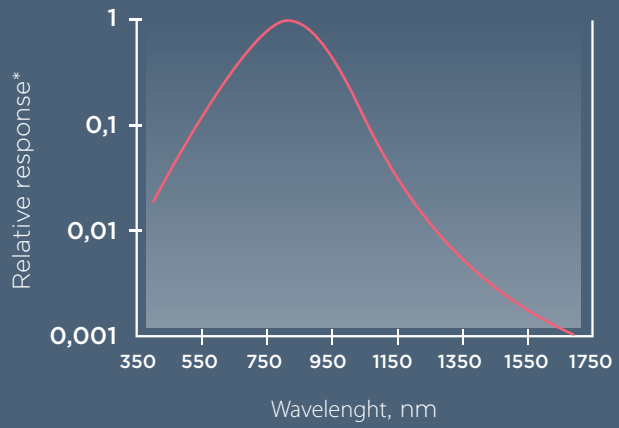
NEWEST TECHNOLOGY CMOS SENSOR WITH **MICRO LENSES AND INTENSIFYING CASCADES**

CONTROLLED FROM A **COMPUTER VIA USB CABLE**

HIGH SENSITIVITY

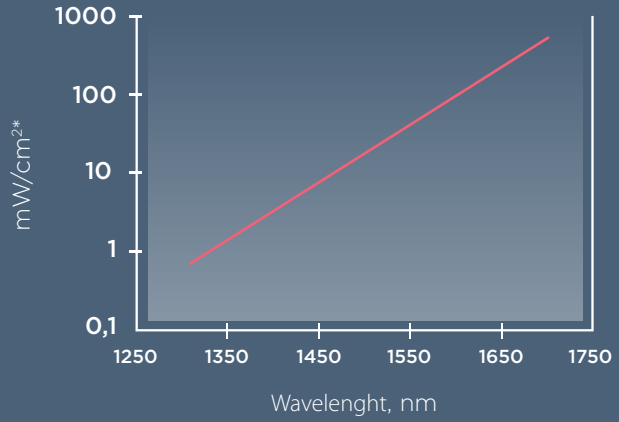
400-1700 nm

SPECTRAL SENSITIVITY



POWER DENSITY

The approximate minimum of power density of radiation on an object at the signal-to-noise ratio=10 (20dB) on a 0,15m distance:



*y axis represents log scale

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IR CAMERA WITH F1.4/25MM WITH INTERNAL IRIS:

- C-mount adapter
- Mounted IR cut-off filter
- USB cable
- USB key with software and drivers
- Manual
- Tripod
- Case

Technical information

SPECTRAL SENSITIVITY	400-1700nm

CUSTOMIZED UPON REQUEST

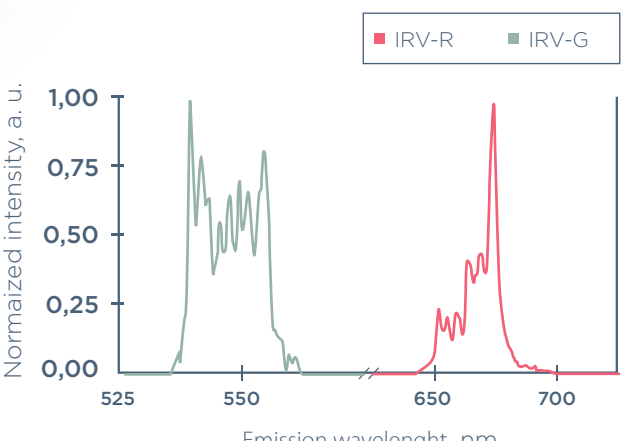
Lens	F1.4/25mm with iris, CS/C-mount*
Field of view	10°

Focusing range	0.05m to inf
Sensor	1/3, 1280 x 960 px, 3,75 µm
Dynamic range	60 dB
Signal-to-noise ratio	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	34µs - 34ms
Weight	0.2 kg
Dimensions	55x55x75 mm

* C-mount adapter included

IR BEAM VISUALIZERS

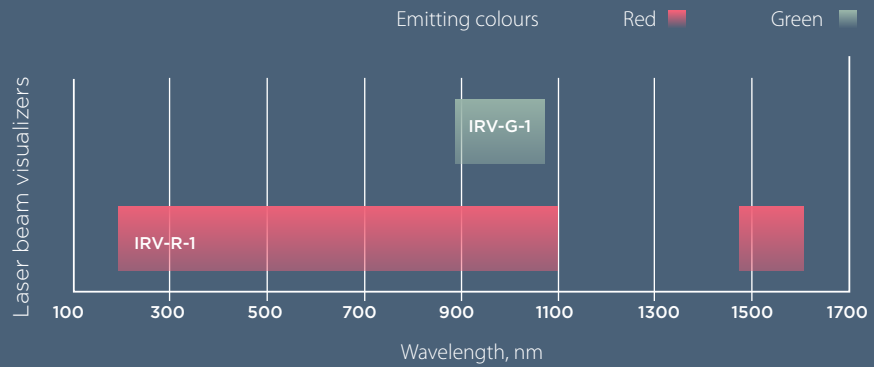
Laser beam visualizers are designed to detect UV and IR both CW and pulsed laser light radiation. These visualizers are fabricated from aluminium with a organic polycrystal photosensitive region, which enables easy location of UV-VIS-NIR light beams and focal points. As it is not necessary to charge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



Effective shifting of a infrared light is an urgent task in many fields of science and technology. IR visualizers are particularly popular in photonics field. Downshifting and emission is accomplished generally due to the photoluminescence of organic polycrystal molecules doped by rare earth materials. To shift the spectrum of incident light, a luminophore must absorb an incident electromagnetic radiation which leads to the minimum optical losses due to self absorption because of high luminophore concentration therefore IR visualizers feature high extinction coefficients and high luminescence quantum field.

Technical information

Product code	IRV-R-1	IRV-G-1 0.02
Threshold sensitivity W/cm2 (mW/mm2)	0.01 (0.1)	0.02 (0.2)
Spectral absorption, nm	190-1090 + 1470-1600	880 - 1070
Emission	Red	Green
Active sides	one	
Laser beam size, Ø mm	35	



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ACCESSORIES

All infrared devices can be assembled with optional accessories to increase the capability to observe and monitor point of interest.

FACE-MASK

This accessory is designed for ABRIS hands-free operation. The mask is fully adjustable with flip mechanics and left/right eye rail adjustment.

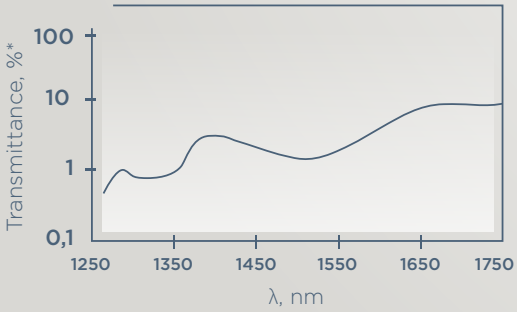
NEUTRAL DENSITY FILTERS FOR 1X, 2X LENSES

ND filters possess level spectral transmittance characteristics in the infrared region and attenuate light by absorption with minimal reflection.

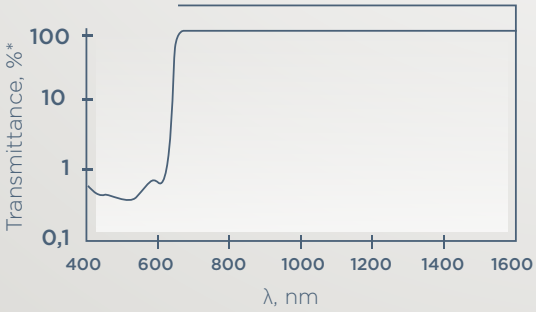
LONG PASS IR FILTERS FOR 1X, 2X LENSES

ADOS-TECH provides customized IR filters for wavelengths starting from 650nm.

TRANSMISSION OF ND FILTER



TRANSMISSION OF LONG PASS IR FILTER



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*y axis represents log scale

VIDEO ADAPTER - VA-1

VA-1 adapter designed for observation in near infrared spectrum on the screen rather than eyepiece. It allows hands-free operation. Image is transmitted from the screen of image converter (IR viewer) to high resolution CCD camera (570TV lines, 1/3"). Analog display is required for viewing.

LENS 2X F1.8/50MM AND LENS 1X F1.4/25MM

Are standard interchangeable lenses supplied for ABRIS viewer.

IR ILLUMINATORS

IR illuminators 940 nm or 800 nm are designed to increase the contrast of infrared images. It could be used with IR cameras and viewers.

RELAY LENS ADAPTER

Designed to relay an image with ratio of 1:1 to any CCD or CMOS camera.

C-MOUNT RING

C-mount uses standard 1.00" - 32 thread and have a flange-sensor distance of 17,526mm.

WARRANTY

All products are covered by a limited 2 year warranty from time of sale. The warranty is valid only for the original purchaser. The manufacturer warrants its products to be free from defects in material and workmanship during the warranty period. If the product proves to be defective during this period, the manufacturer will repair the original product or replace it with a like product at the sole discretion of the manufacturer.

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Interested? Contact us!

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