

Manual

Infrared cameras Contour IR Digital



infrared viewers

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Safety requirements

- The customer is responsible for light source safety while using a camera as a standalone device or integrated into system.
- The customer must consider protective measures if necessary.
- While assembling or operating camera, do not stare at the direct laser (or other source) light even with safety goggles.
- This device will not protect you from direct or high light radiation. Use camera with caution and appropriate attenuation
- Electrical safety requirements must be complied while operating this device.

About

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.

Operation

CAUTION! Do not use direct powerful laser radiation on a sensor.

CAUTION! Use filters, attenuators or beam splitters to decrease of laser radiation.

1. Install the camera driver and software from CD.
2. Connect camera to PC.
3. Start software on PC.
4. Open EVScap program.
5. Observing the image on monitor, focus the objective lens of the camera. If necessary, switch on/off automatic control, arrange parameters of the camera (brightness, contrast, saturation, factor of scale - correction)



Figure 1. Contour IR Digital camera

in properties of software (see “help” files), and also if it is required to change a format of the image (1280x1024 or 640x480) or refresh rate (7Hz, 15Hz, 30Hz and 60Hz). To get a direct values characteristic for photometric measurements, adjust scale-correction and switch ON Scale to 1 (scale=1).

6. For low power infrared illumination observation decrease any external light background to increase noise to signal contrast. Use cut-off or interference filters for better contrast.

PC requirements

- Processor Pentium-3 at least 1 GHz, or Pentium-4 at least 1.6 GHz.
- At least 256 MB RAM
- USB 2.0 (USB 3.0) port
- OS Microsoft WIN/ME (USB 2.0 Host, root concentrators and Direct-X drivers shall be installed), or WIN/XP (Service Pack 2).

Software set and features

- WDM driver suitable for Windows XP/7 (32, 64bit).
- Use EVSCAP software for single picture capture and AMCAP software for video recording.
- The Contour-IR digital camera is supplied with software controlling following functions: exposure time, gain factor, gamma correction and etc.
- The electronic shutter is in the Rolling Shutter. The operation in pulse mode with short exposures is useless – there will be visible just one or several lines of the entire frame.
- Gain factor is 30 dB.
- Gamma correction can be deactivated from the driver bookmark.
- There is no external synchronisation.
- Uncompressed video record function is available.

Applications development by the customer

The Contour-IR digital camera is supplied with the WDM driver that implements the Microsoft Direct Show technology, which is the Windows SDK (Microsoft Direct X) component.

>> [Download Windows SDK here](#)

(<https://www.microsoft.com/en-us/download/details.aspx?id=24826>)

It allows working with a large array of commercial and free-ware software, supports technology, such as Ulead Video Studio, Adobe Premier, AmCap, VirtualDub and etc.

For personal applications development, the customer has to use Microsoft Windows SDK or SDK catalogue available in the supplied CD.

The Maintenance instruction

- Keep device away from mechanical damage and moisture.
- Protect the lenses from dirt. If necessary, clean them with clean soft cloth; remove oiled spots or deposit with cotton wool slightly wetted in alcohol.

Spectral sensitivity

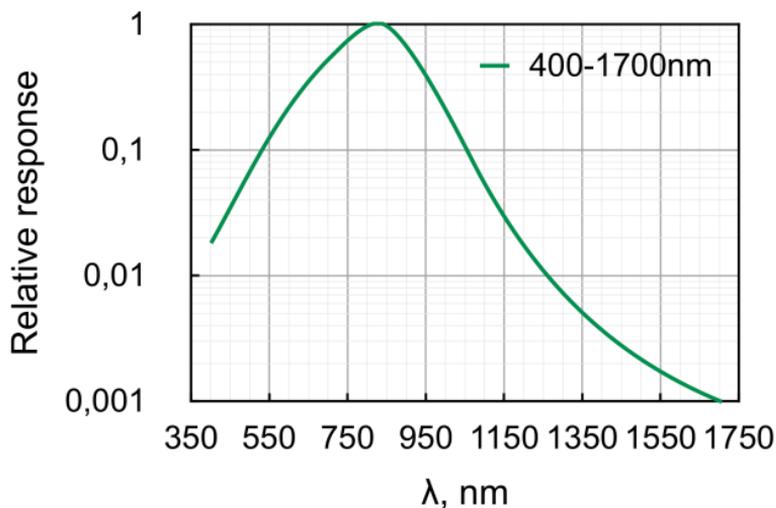


Figure 2. Spectral sensitivity (Contour IR digital camera)

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:

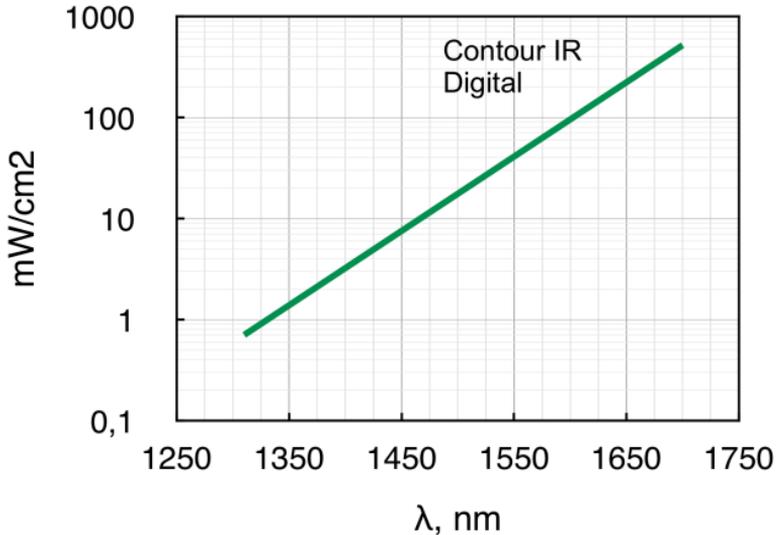


Figure 3. Power density (Contour IR digital camera)

Technical information

Spectral sensitivity	400-1700nm
Sensor size	1/3 inches, 6.0mm x 4,96mm
Lens	F1.4/26mm, CS-mount
Field of view	10°
Focusing range	0.15m (or 0,1m)* to inf
Sensor	CMOS 1/3" 1280 (h) x 960 (w)
Size of pixel	3,75 x 3,75 µm
Dynamic range	60 dB
Relation 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	34µs - 34ms
Temperature range	+5... +40°C
Weight	0,2 kg
Dimensions	55x55x75 mm

* with the distance ring

Standard kit includes:

- IR camera;
- distance ring;
- IR cut-off filter;
- Software and drivers;
- manual;
- case.

Accessories available upon request;

- Iris diaphragm
- Neutral density filter for lens 1X(3-5% @ 1064nm)
- Neutral density filter for lens 2X(3-5% @ 1064nm)
- Microscope adapter
- Lens 2X (F1.8/50mm)
- Lens 1X(F1.4/26mm)
- Distance ring
- C-mount ring for any CCD lenses

Warranty

Infrared viewing device CONTOUR-IR Digital meets specifications of the manufacturer and declared operation.

The warranty period of the device is 24 months from the date it was sold to the consumer.

Claims not accepted, and warranty repair are not made, because of the improper use or incorrect service and maintenance of product instructions. The company shall not accept warranty claim:

- non-authorized alteration,
- disassembling of device,
- mechanical or any external damages,
- if 2 year warranty term has expired.

Serial No.

Version No.

Spectral range

Date of Issue

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