The given maintenance manual is intended for people who are to install, adjust and operate Microlight outdoor cameras. This document covers all video cameras' models given in the table below. Video camera installation should be carried out by a professional in accordance with this manual.

Product purpose

Microlight outdoor camera is designed for continuous video surveillance in different weather conditions as part of CCTV.

Specification

Model	B&W				Color			
	MLB 420 12DC/IR60	MLB 420 E 12DC/IR60	MLB 600 12DC/IR60	MLB 600 E 12DC/IR60	MLC 400 12DC/IR60	MLC 400 E 12DC/IR60	MLC 500 12DC/IR60	MLC 500 E 12DC/IR60
CCD array	1/3″ Sony							
Resolution, TVL	420		600		400		500	
Sensitivity, lux (F2)	0,01	0,005	0,1	0,01	0,2	0,06	0,2	0,1
Signal/noise, dB	>48 (AGC is off)							
Lens (focus/horizontal field of view, mm/º)	Build-in zoom lens (4-9/65-30)							
Video output:	Composite video signal 1V, 75 Ohm							
IR illuminator emission wavelength, nm	880±20							
Illumination angle $2\theta_{0,5}$,º	60±6							
Illumination range, m	35	45	30	40	25	30	25	30
DC supply voltage, V	12±10%							
Direct current not more than, A	1,35							
Operating temperature range at continuous running, ° C	-30… +40							
Dimensions, mm	240x206x134							
Weight, kg	1,65							
IP Protection Standard	IP66							

Delivery set.

Outdoor camera -1 pc., IR illuminator – 1 pc., bracket- 1 pc., socket head cap screw M6x12 – 1 pc., tool kit – 1 pc., technical datasheet – 1 pc., packing – 1 pc..

Test certificate

Serial number_____

IR camera has been tested and is ready for operation.

QC (Quality Control) stamp _____

Test date _____

Commercial organization _____
(Stamp here)

Date of sale _____

Customer's signature _____

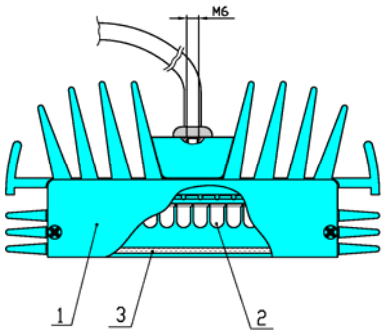

Fig. 2 Illuminator.
1 – case, 2 – LEDs, 3 – light filter

IR camera power supply is carried out from an external stabilized source of 12 V (not included in the delivery set).

Installation and connection

All outdoor camera installation and connection works should be carried out when the power supply is turned off.

Join IR illuminator to the housing. By turning off the screws, take off the back cover. Put the IR illuminator cable into the video camera cable input by extending it through the cable input cap. Fix the cables into the terminal block by releasing the clips by means of a screwdriver. Pull 15 cm of the cable out and form a loop inside the housing. Tighten the screw of a cable input for a firm cable fixation. Install the back cover by tightening up the fixing screws.

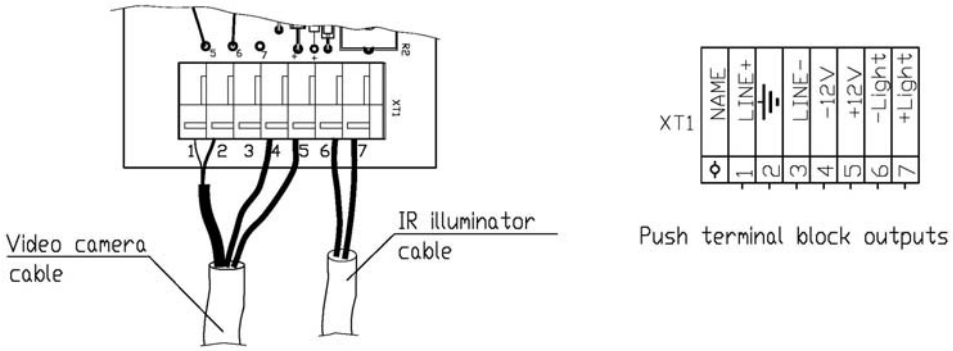

Fig.3. Terminal block connecting diagram.
Terminals: 1 – VIDEO, 2 – GND, 4 – «-» 12VDC, 5 – «+» 12VDC, 6 – «-»IR, 7 – «+»IR

With the help of self-tapping screws fix the bracket on the vertical surface, join the housing with the ball stud by means of screws (included) using an allen key 3 mm., loosen the bracket screw by means of an allen key 5 mm., point the camera on the surveillance object, fix it firmly by tightening up the screw. By means of M6x12 screw fix the IR illuminator on the ball stud.
Connect the outdoor camera as it is shown on the connecting circuit. **Follow polarity connection: (+) of supply – red or brown; (-) of supply – black or blue.**

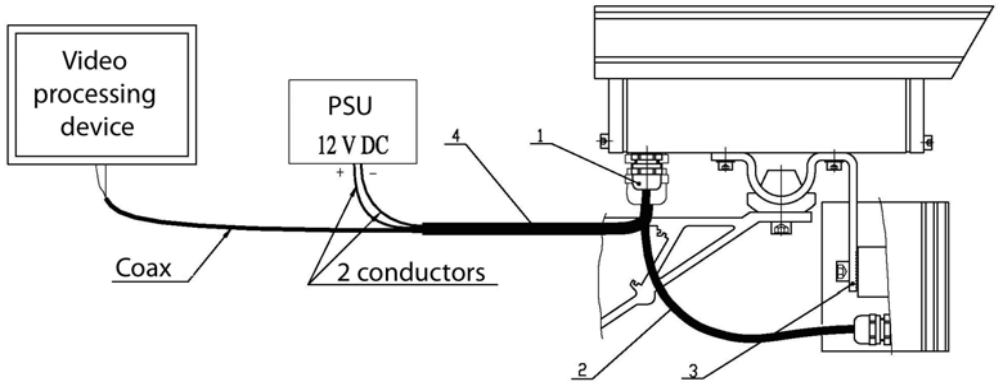

Fig.4. Microlight IR camera. Connecting circuit.
1 – cable input, 2 – IR illuminator cable, 3 – ball stud, 4 – video camera composite cable.

Safety precautions

The Illuminator of an IR camera is made in compliance with EN60065:2001+Amd1: Audio-, video-equipment and analogous electronic equipment: Safety requirements and Maximum permissible action limits are in accordance with IEC60825-1. The product meets the requirements of EMC directive 89/336/EEC with amending directives 92/31/EEC and 93/68/EEC.

Caution! IR LED invisible radiation! Do not look directly into the illuminator using optical devices (optical lenses). Class 1M LED item.
Follow polarity connection: (+) of supply – red or brown; (-) of supply – black or blue.
Illuminator operation is prohibited at parameters exceeding maximum permissible values.

Operating rules

Before installing, the device should be kept at temperature from +15º C at least an hour.
Microlight IR camera is designed for continuous work at parameters not exceeding overload capacities. It is not recommended to switch off the power supply for a long period of time at temperature lower than -20º C.
During the device maintenance it is necessary to clean dark-room filter and fin of radiator when dirty.
Radiator cleaning from dust is carried out by a brush. If necessary it is possible to use water.
Dark-room filter cleaning is carried out by a wet cotton cloth with continuous change of cloth contact surface in order to avoid filter surface damage by abrasive.

Attention!
Do not use dissolvent or chemicals for cleaning!

outdoor cameras
MICROLIGHT

MICROLIGHT IR CAMERA

Technical datasheet

Produced by Microlight Co., Ltd.
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Tel./fax +7(495)788-66-62
www.microlightcctv.com

Image adjustment

To adjust an image it is necessary:
- to move the sun visor;
- take off the front cover by turning off the screws;
- move out the housing board;
- loosen the retainer screw on the front part of the lens, set required focal distance, fix the lens ring;
- loosen the holder of the lens back part, focus the image and tighten up the retainer screw;
-push the board and the video camera into the housing firmly, fix the front cover, tighten up the screws;
- pull out the sun visor.

Attention! When fixing the front cover, tighten up the screws tightly and without jerks. This will ensure correct adjoining of a rubber edge and camera hermeticity.

Transport and storage regulations

Goods in the manufacturer's packing are transported by all types of covered transport in accordance with the State Standard 12297-84 and rules effective in relation to this type of transport.
IR camera storage is carried out in an enclosed space in acid and alkali fumes free environment. Ambient temperature is from -50° up to +50° C; upper relative air humidity is 80% at temperature +25°C in compliance with the State Standard 15150-69.

Warranty

The manufacturer or supplier guarantees Microlight IR camera's compliance to technical requirements given that consumers follow storage and maintenance requirements indicated in this document. Warranty life is 36 months since the day of sale. Warranty is expired in the case of consumer non-observance of installation, connection, storage or maintenance requirements, case crippling or unassisted repair, renovation, modernization etc.

Camera structure and principle of operation

Microlight IR camera consists of a modular black-and-white or color (depending on model) video camera fixed on a housing board, a housing with a sun visor, a bracket which enables to fix the IR camera in different directions and an infrared illuminator fixed on a ball stud of the bracket.

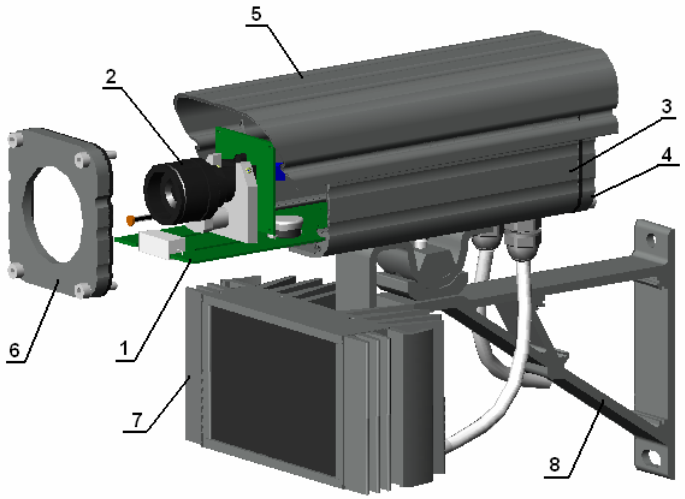

Рис.1. MICROLIGHT IR camera. General view.
1 – housing board, 2 - modular camera, 3 – casing, 4 – back cover, 5 – sun visor,
6 – front cover, 7 – IR illuminator, 8 – bracket.

The housing of an IR camera is made of aluminum alloy which protects the video camera from unfavourable climatic conditions. Heating of the inner space enables to use camera at low temperatures and saves it from fogging and glass frosting.
A photosensor built in a housing automatically switches the IR illuminator on and off, as well as sets the modular color camera to the black-and-white mode, depending on the illumination level.
Video camera CCD array generates a CCIR signal which is shown on equipment for video processing. It can be a monitor, a VCR, a video switch, a quad splitter, a multiplexer, a digital video recorder etc.
The IR illuminator is designed for hidden illumination of an observed object in low light conditions. Illuminator's case is made of aluminum alloy. Face of the case has LEDs covered by an infrared filter made of special plastic.
The back part of the case has cooling fins. Located on the illuminator's back panel in the space uncovered by radiator's fins there is an M6 screw-threaded fixation hole for a standard bracket. The bracket is fixed to an illuminator by means of a screw included in the delivery set.