



640px
THERMAL
RESOLUTION

30mK
SENSITIVITY

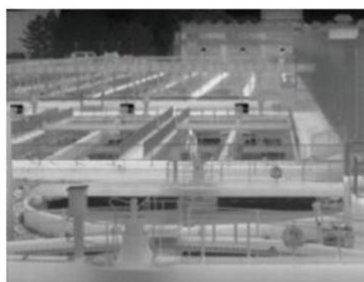
60Hz
FRAME RATE

**OPTICAL
ZOOM**

**ONVIF
RTSP**

WORKSWELL WEOM ZOOM BLOCK

ITAR-FREE THERMAL OPTICAL ZOOM BLOCK CAMERA MODULE



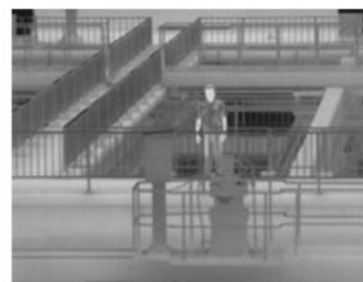
Optical zoom 35mm



Optical zoom 50mm



Optical zoom 70mm



Optical zoom 105mm



Datasheet

Release date: 9th of April 2025

Version: 250409

WEOM ZOOM BLOCK THERMAL MODULE

WEOM ZOOM BLOCK THERMAL MODULE - continuous optical zoom ONVIF thermal camera module

ITAR-free thermal imaging camera block with motorized optical zoom & focus designed and produced in Europe with unmatched quality suitable for all types of demanding applications such as an unmanned vehicle (UAV/UGV), thermal fixed industrial and security cameras, maritime thermal cameras, machine vision thermal cameras, monitoring and intelligent systems, defence, and many more.

Advanced FPGA processing provides outstanding image quality and scene visualization with high performance detector **sensitivity of 30mK and resolution of the detector 640 x 480 px**. WEOM ZOOM BLOCK offers compact dimensions, weight, Ethernet RJ45 ONVIF camera communication and PELCO-D RS485 PTZ interface.

Main technical specification and key features

Detector type	Uncooled LWIR sensor
Spectral band	8 – 14 µm
Detector resolution	640 x 480 px, microbolometer
Detector pixel size	17 µm (up to 30% higher sensitivity than 12 µm detectors)
Detector sensitivity	<30 mK or <50 mK
Image frame rate	9 Hz (non-dual-use) or 60 Hz full frame rate
Scene temperature range	High Gain mode -50 °C to +160 °C, Low Gain mode -50 °C to 600 °C)
Non-uniformity correction (NUC)	Integrated, factory calibrated
Optical zoom 35 – 105 mm Motorized optical zoom & focus	Zoom ratio: 3x; object distance: minimum 7 m, maximum 3 083 m Sealing rated at IP67 (front lens) with DLC coating, F number: f/1.6 Horizontal FOV 18° to 5.9° Vertical FOV 14.3° to 4.8°
Image palettes	14 image color palettes Palette inversion
Image orientation	Invert (Flip the image vertically), Mirror (Flip the image horizontally)
Image gain control	Automatic Image Gain Control function Manual Image Gain Control function (Brightness, Contrast)
Communication interface	Ethernet, RJ45 (PoE), 1Gb/s (100Mb/s compatible) 2-pin power supply connector Harting 14110213001000 8-pin AUX connector Phoenix 1780837 (DI, DO, RS485, Termination)
Temperature drift compensation	Factory calibrated for temperature drift compensation
Spatial image filter	Median full frame 60Hz spatial filter for improved image quality
Temporal image filters	Time-domain 2x, 4x moving average filter for improved image quality
Additional digital zoom	1x, 2x, 4x additional digital zoom function



Video stream, camera control and PTZ control interface	
Video stream	RTSP, H264 encoded video via Ethernet Real-time stream in web-client
Camera control	ONVIF compliant for third party software inter-compatibility Webserver camera interface ONVIF and webserver is fully synchronized
PTZ control	PELCO D protocol via RS485 Baud rate and address configurable via webserver Relative and absolute positioning Continuous movement with speed control Presets
Network settings	Static IP or DHCP functionality MAC Address configuration HTTPS (importa self-signed/authority certificate)
User management	Login and password 3 different user roles
Remote update	Available via webserver, customized
Physical attributes	
Dimensions	82 mm (3.23 in) x 85 mm (3.35 in) x 165 mm (6.5 in)
Weight	< 760 g (26.8 oz)
Power supply	
Independent input voltage	9 - 36 VDC, 2-pin connector
PoE	Power over Ethernet function available, RJ45 connector
Power dissipation	11 W average, max. 1.8 A at 9VDC
Environmental data	
Operating temperature	-20 °C (-4 °F) to +70°C (+149 °F), wider range on request optional
Storage temperature	-40°C (-40 °F) to +80°C (+176 °F)
Humidity	5% to 95% non-condensing
Housing material	Durable aluminum and metal body
ROHS, REACH, WEEE, CE	Compliant

* The maximum object distance (detection) is a theoretical value calculated for seeing human sized objects based on Johnson's criteria based on VGA-17µm pixel pitch sensor. It is not an actual measured value.



DRI information for WEOM BLOCK THERMAL CAMERA MODULE

The calculations are based on the "Johnson Criteria" that is used for DRI (Detection, Recognition, and Identification). According to the Johnson Criteria, the minimum resolution, pixels on target, required to achieve a 50% probability for an observer to discriminate an object are:

(D) Detection:

If a target is found in the field of view, the image of the target must account for more than 1.5 pixels in the critical dimension direction.

(R) Recognition:

The target is classified to identify whether the target is a car, truck or person, which means that the image of the target must occupy more than 6 pixels in the critical dimension direction.

(I) Identification:

The definition of identification is that the model and other characteristics of the target can be distinguished. The image of the target must occupy more than 12 pixels in the critical dimension direction.

Lens	Human (1.8 m x 0.5 m) (5.90 ft x 1.64 ft)			Vehicle (2.3 m x 2.3 m) (7.54 ft x 7.54 ft)			Drone (0.5 m x 0.5 m) (1.64 ft x 1.64 ft)		
	D	R	I	D	R	I	D	R	I
35 mm	1 300 m	330 m	160 m	3 160 m	790 m	390 m	690 m	170 m	90 m
105 mm	3 910 m	980 m	490 m	9 470 m	2 370 m	1180 m	2 060 m	510 m	260 m



Contact information

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