



640px
THERMAL
RESOLUTION

30mK
SENSITIVITY

60Hz
FRAME RATE

OPTICAL
ZOOM

INTEL
FPGA



WEOM CONTINUOUS OPTICAL ZOOM

ITAR-FREE THERMAL CAMERA MODULE



Optical zoom 35mm



Optical zoom 50mm



Optical zoom 70mm



Optical zoom 105mm



Optical zoom 150mm

Datasheet

Release date: 25th of November 2024

Version: 241125

WEOM continuous optical zoom

WEOM continuous optical zoom thermal imaging camera module key features description

ITAR-free thermal imaging camera module 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, security and many more.

Advanced FPGA processing provides outstanding image quality and scene visualization with high performance **sensitivity of 30mK and resolution of the sensor 640 x 480 px**. WEOM offers small dimensions, weight, variety of lenses and different standard industrial exchangeable interfaces directly attached on the thermal core (HDMI, CVBS, USB3, CMOS, GigE) for integrators that allow to use **WEOM in any desired application**.

Technical specification

Sensor type	Uncooled LWIR sensor
Spectral band	8 – 14 µm
Sensor resolution	640 x 480 px, microbolometer
Sensor 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), 30 Hz 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 (M34) Motorized optical zoom & focus	Zoom ratio: 3x; object distance: minimum 7 m, maximum 3 050 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°
Optical zoom 50 – 150 mm (M34) Motorized optical zoom & focus	Zoom ratio: 3x; object distance: minimum 7 m, maximum 4 400 m Sealing rated at IP67 (front lens) with DLC coating, F number: f/1.6 Horizontal FOV 12° to 4.1° Vertical FOV 10° to 3.3°
Active Athermalization	Yes
Image orientation	Invert (Flip the image vertically), Mirror (Flip the image horizontally)
Control software	Control software Thermal Core GUI
Temperature drift compensation	Factory calibrated for temperature drift compensation
AGC	Automatic Gain Control function
MGC	Manual Gain Control function (Brightness, Contrast)
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



Video outputs and control	
Video and data plugins	WEOM provides a variety of exchangeable plugins
CVBS plugin (analog video NTSC)	1x MCX (micro coaxial connector) for video output 1x JST control, power supply & video output
Micro-HDMI plugin (digital video)	1x micro-HDMI connector for video output 1x JST control & power supply 1x USB-C connector for camera control & power supply
USB3 plugin	1x USB-C connector for video UVC output & power supply
CMOS	14-bit parallel video
Serial communication	UART serial communication channel for WEOM and lens control
Image palettes	14 image palettes available in total (2 of them definable by the user)
Dead Pixel Correction	User Dead Pixel correction wizard
Time to start	< 6 sec
Physical attributes	
Dimensions (CMOS version)	Optical zoom lens 35 – 105 mm: barrel size ø 82 mm, length 164 mm (6.456 in) Optical zoom lens 50 – 150mm: barrel size ø 114 mm, length 198 mm (7.795 in)
Weight	< 555 g (19.57 oz) with Optical zoom 35 – 105 mm < 1 235 g (43.56 oz) with Optical zoom 50 – 150 mm
Power supply	
Input voltage	12 - 24 VDC
Primary electronic interface	CMOS (50-pin Hirose)
Power dissipation	9.5 W
Environmental data	
Operating temperature	-10°C to +65°C (-4 °F to 149 °F)
Storage temperature	-40°C to +80°C (-58 °F to 194 °F)
Humidity	5% to 95% non-condensing
Housing material	Durable aluminum 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.



Contact information

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SALES DEPARTMENT

Website: www.workswell.eu

E-mail: sales@workswell.eu

Mobile: +420 737 547 622

COMPANY CONTACT

Website: www.workswell.eu

E-mail: info@workswell.eu

Mobile: +420 725 877 063

OFFICE LOCATIONS

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