WORKSWELL®
INFRARED CAMERAS AND SYSTEMS

1280 PX
THERMAL RESOLUTION

50MK
SENSITIVITY

30HZ
FRAME RATE

INTEL FPGA

MADE IN EU
EU
QUALITY GUARANTEED

TÜV SÜD
ISO 9001

WORKSWELL WEOM HD

ITAR-FREE THERMAL IMAGING CAMERA CORE

Preliminary - Datasheet

Release date: 16th of September 2025

Version: 250916

WORKSWELL®
INFRARED CAMERAS AND SYSTEMS

WEOM HD thermal imaging core specification

WEOM HD thermal imaging camera core key features description

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

Advanced FPGA processing provides outstanding image quality and scene visualization with high performance **sensitivity better than 50mK and resolution of the detector 1 280 x 1 024 px at 30fps**. WEOM HD offers small dimensions, weight, variety of lenses and exchangeable interfaces (HDMI, USB, Ethernet PoE) for integrators.

Technical specification

Detector type	Uncooled LWIR detector, microbolometer
Spectral band	8 – 14 µm
Detector resolution	1 280 x 1 024 px
Detector pixel size	12 µm
Detector sensitivity	<50 mK
Image frame rate	<9 Hz or 30 Hz full frame rate
Scene temperature range	High Gain mode -50 °C to +160 °C, Low Gain mode -50 °C to 600 °C) High Gain mode -58 °F to +320 °F, Low Gain mode -58 °F to 1 112 °F)
Non-uniformity correction (NUC)	Integrated, factory calibrated
Fixed focus lenses (M34)	FOV 34° (H) x 27° (V), focal length 25 mm FOV 24° (H) x 19° (V), focal length 35 mm FOV 17° (H) x 13° (V), focal length 50 mm FOV 10° (H) x 8° (V), focal length 83 mm
Version without the lens	Delivery of WEOM is available without lens (M34 lens thread)
Image orientation	Invert (Flip the image vertically), Mirror (Flip the image horizontally)
Control software	Control desktop software WEOM GUI
Spatial image filter	Median full frame 30Hz spatial filter for improved image quality
Temporal image filters	Time-domain 2x, 4x moving average filter for improved image quality
AGC	Automatic Image Gain Control (Plateau Histogram equalization)
MGC	Manual Gain Control function (Brightness, Contrast)
Temperature drift compensation	Factory calibrated for temperature drift compensation
Image palettes	14 image palettes available in total (2 definable by the user)
Dead Pixel Correction	User Dead Pixel correction wizard

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Video outputs and control	
Video and data plugins	WEOM HD provides a variety of exchangeable plugins
Micro-HDMI plugin (digital video)	1x micro-HDMI connector for video output 1x JST connector for AUX signals 1x JST control & power supply 1x USB-C connector for camera control & power supply
USB plugin	1x USB-C connector for video UVC output & power supply 1x JST connector for AUX signals Video format Pre-IGC MONO 14bit, Post-coloring YCbCr
Ethernet (PoE)	Ethernet, RJ45 (PoE), 1Gb/s (100Mb/s compatible) 2-pin power supply connector Harting 14110213001000 8-pin AUX connector Pheonix 1780837 (DI, DO, RS485, Termination)
Video stream via Ethernet	RTSP, H264 encoded video, real-time stream in web-client
Thermal core control via Ethernet	ONVIF supported for the third-party software inter-compatibility Web server camera interface
PTZ control	PELCO D protocol via RS485 Baudrate 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-signated/authority certificate)
Serial communication	UART serial communication channel for WEOM control
Time to start	< 5 sec
Physical attributes	
Mounting holes	4 x M2 mounting holes
Dimensions	43 (h) x 42 (w) x 51 (l) mm (1.69 x 1.65 x 2.0 in) without the lens/plugin
Weight	< 85 g (3 oz) without the lens
Power supply	
Input voltage	5 VDC
Power dissipation	Typically 2.9 W
Environmental data	
IP rating (Encapsulation)	IP67 (at front of lens)
Operating temperature	-32 °C to +70 °C (-22 °F to 158 °F) according to MIL
Storage temperature	-50 °C to +90 °C (-58 °F to 194 °F)
Humidity	5 % to 95 % non-condensing

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Housing material	Durable aluminum body
ROHS, REACH, WEEE, CE	Compliant

DRI information for WEOM lenses

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
25 mm	1 320 m	330 m	160 m	3 190 m	800 m	400 m	690 m	170 m	90 m
35 mm	1 850 m	460 m	230 m	4 470 m	1 120 m	560 m	970 m	240 m	120 m
50 mm	2 640 m	660 m	330 m	6 390 m	1 600 m	800 m	1 390 m	350 m	170 m
83 mm	4 380 m	1 100 m	500 m	10 610 m	2 650 m	1 330 m	2 310 m	580 m	290 m

* Real values may vary based on environmental conditions and integration.

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