



640px
THERMAL
RESOLUTION

30mK
SENSITIVITY

60Hz
FRAME RATE

**INTEL
FPGA**



WORKSWELL WEOM

ITAR-FREE THERMAL IMAGING CAMERA CORE

Datasheet

Release date: 29th of June 2024

Version: 290624

WEOM thermal imaging core specification

WEOM thermal imaging camera core key features description

ITAR-free thermal imaging camera core designed and produced in Europe with unmatched quality suitable for all types of demanding applications such as 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, 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 sensors)
Detector sensitivity	<30 mK or <50 mK
Image frame rate	60 Hz or 30 Hz full frame rate (< 9 Hz version available for export)
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
Fixed focus lenses (M25)	FOV 42° (H) x 32° (V) - 52° (diagonal), focal length 14 mm f/1.20 FOV 24° (H) x 18° (V) - 30° (diagonal), focal length 25 mm f/1.20 FOV 17° (H) x 13° (V) - 22° (diagonal), focal length 35 mm f/1.10
Fixed focus lenses (M34)	FOV 91° (H) x 75° (V) - 104° (diagonal), focal length 7,5 mm f/1.20 FOV 44° (H) x 34° (V) - 54° (diagonal), focal length 14 mm f/1.20 FOV 25° (H) x 19° (V) - 31° (diagonal), focal length 25 mm f/1.20 FOV 18° (H) x 13° (V) - 22° (diagonal), focal length 35 mm f/1.20
Version without the lens	Delivery of Weom is available without lens (M25 or M34 lens holder)
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 interchangeable plugins
CVBS plugin (analog video NTSC)	1x MCX (micro coaxial connector) for video output 1x JST connector for AUX signals 1x JST control, power supply & video output
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
USB3 plugin	1x USB-C connector for video UVC output & power supply 1x JST connector for AUX signals
GigE plugin	1x RJ-45 connector for video output & power supply 14-bit RAW data available via SDK
CMOS	14-bit parallel video
Serial communication	UART serial communication channel for Weom 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	< 5 sec
Physical attributes	
Mounting holes	6 x M2 mounting holes
Size (CMOS version)	40.1 (h) x 37.8 (w) x 42.6 (l) mm (1.57 x 1.48 x 1.67 in) without the lens
Weight	< 65 grams (2.29 oz) without the lens
Power supply	
Input voltage	5 VDC
Primary electronic interface	CMOS (50-pin Hirose)
Power dissipation	1.9 W
Environmental data	
IP protection (Encapsulation)	IP67 (at front of lens)
Operating temperature	-40°C to +80°C (-40 °F to 176 °F)
Storage temperature	-50°C to +90°C (-58 °F to 194 °F)
Humidity	5% to 95% non-condensing
Housing material	Durable aluminum body
ROHS, REACH, WEEE, CE	Compliant



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