



640px
THERMAL
RESOLUTION

30mK
SENSITIVITY

60Hz
FRAME RATE

INTEL
FPGA



WORKSWELL TADAS

THERMAL ADVANCED DRIVING ASSISTANCE SYSTEM

Datasheet

Release date: 5th of June 2025

Version: 250605

TADAS Thermal Advanced Driving Assistance system

Workswell TADAS key features description

ITAR-free thermal advanced driving assistance system (TADAS) designed and produced in Europe with unmatched quality suitable for all types of demanding applications for unmanned vehicles (UGV), heavy trucks, defence vehicles, safety patrols and fire trucks for easy operation of a vehicle deployed in the field. Workswell TADAS helps, with other technologies, increasing the car and road safety during the mission.

Advanced FPGA processing provides outstanding image quality and scene visualization with high **sensitivity of 30mK and resolution of the detector 640 x 480 px**. TADAS offers small dimensions in the robust IP67 housing including extended vibration resistance, low weight, variety of lenses and interfaces for integration.

TADAS Technical specification

Detector type	Uncooled LWIR detector, microbolometer
Spectral band	8 – 14 µm
Detector resolution	640 x 480 px
Detector pixel size	17 µm (up to 30% higher sensitivity than 12 µm detector)
Detector sensitivity	<30 mK
Image frame rate	9 Hz, 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) 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 available	FOV 91° (H) x 74° (V), focal length 7.5 mm, f/1.2 or FOV 42° (H) x 32° (V), focal length 14 mm, f/1.2
Image orientation	Invert (Flip the image vertically), Mirror (Flip the image horizontally)
Control software	Control software WEOM GUI
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
AGC	Automatic Image Gain Control (Plateau Histogram equalization)
MGC	Manual Gain Control function (Brightness, Contrast)
Temperature drift compensation	Factory calibrated for temperature drift compensation

TADAS video output and control

Circular MIL connector	MIL-KPT02E10-6P connector with 6 wires - CVBS video output - Power supply - RS-485 camera control
Image palettes	14 image palettes available in total (2 definable by the user)



Dead Pixel Correction	User Dead Pixel correction wizard
Time to start	< 6 sec
Physical attributes	
Mounting holes	4 x M4 each side 4 x M3 front and back side 14 x M5 bottom side
Dimensions	70 (h) x 65 (w) x 114 (l) mm (2.76 x 2.56 x 4.49 in)
Weight	0,6 kg (21.2 oz)
Power supply	
Input voltage	12-24 VDC
Power dissipation	Typically 3 W, 3.5 W peak (without deicing heater)
Environmental data	
IP rating (Encapsulation)	IP67
Housing color	Black (optional army green or army sand color)
Operating temperature	-32°C to +65°C (- 25°F to 149 °F)
Storage temperature	-50°C to +90°C (-58 °F to 194 °F)
Vibration	Operating Random Vibration Test 5-500Hz, 3.0Grms
Shock	Operating Shock Test 15G, 11ms duration
Front view Heater	Integrated Germanium window with deicing heater
Housing material	Durable aluminum body
ROHS, REACH, WEEE, CE	Compliant



DRI information for TADAS 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
7.5 mm	280 m	70 m	35 m	675 m	170 m	85 m	150 m	35 m	25 m
14.25 mm	520 m	130 m	70 m	1 260 m	320 m	160 m	270 m	70 m	30 m

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



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