



10x  
OPTICAL  
ZOOM

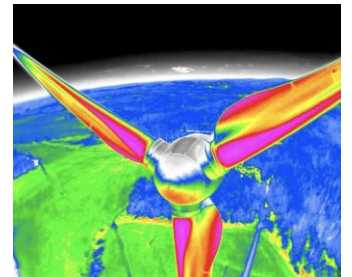
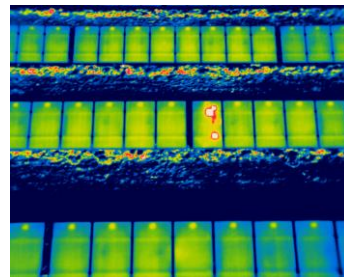
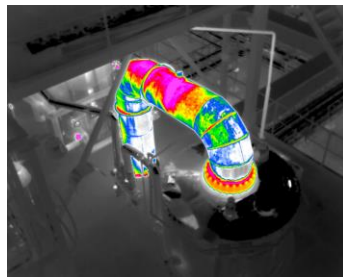
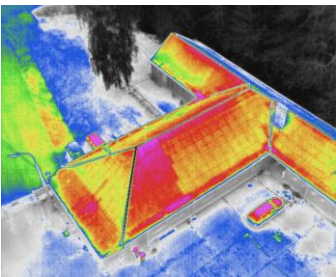
W  
WIRIS OS

1.3 MPx  
SUPER IR  
RESOLUTION

1500°C  
TEMPERATURE  
RANGE

INTEL  
FPGA

# WORKSWELL WIRIS PRO INDUSTRIAL DRONE THERMAL CAMERA



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## Datasheet

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Release date: 10<sup>th</sup> May 2019

Revision Number: 1.7

# WIRIS Pro technical specification

WIRIS Pro Key features description	
<b>Super Resolution Mode</b>	WIRIS Pro takes Super Resolution Mode 1.3Mpx IR images in one shot
<b>Operating onboard system</b>	WIRIS OS for full real-time data streaming and control during the flight - operating system ensures the full access to all camera functions - easy camera control via S.Bus, CAN bus, MavLink, RJ-45 or Trigger
<b>10x Optical Antivibration zoom</b>	Full HD 10x optical zoom camera with anti-vibration compensation
Thermal camera specification	
<b>IR camera resolution</b>	640 x 512 pixels
<b>IR Super Resolution Mode</b>	1 266 x 1 010 pixels (improvement of native resolution up to 1.3 Mpx)
<b>FPA active sensor size</b>	1.088 x 0.8705 cm
<b>Temperature ranges</b>	-25 °C to +150 °C -40 °C to +550 °C optional temperature range 50 °C to 1 000 °C optional temperature range 400 °C to 1 500 °C
<b>Temperature sensitivity</b>	Standard 0.05 °C (50 mK) or optional 0.03 °C (30 mK)
<b>Accuracy</b>	±2 % or ±2 °C (in temperature range 0 °C to +150°C, after camera stabilization, climate chamber and black body testing for all products)
<b>Frame rate</b>	30 Hz or < 9 Hz
<b>Spectral range / detector</b>	7.5 – 13.5 μm / Uncooled VOx microbolometer
<b>Calibration of each lens</b>	Package includes a calibration certificate
<b>Available lenses</b>	18°, 32°, 45°, 69° (exchangeable lenses, all calibrated), <a href="#">visit FOV calculator</a>
<b>Protective filter on lens</b>	Filter protects the lens against external damage during the flight
<b>IR Digital zoom</b>	1 – 14x continuous
Digital visual camera	
<b>Resolution</b>	1 920 x 1 080 pixels (Full HD), 1/3" sensor, Auto white balance, Wide dynamic range, Backlight compensation, Exposure and Gamma control
<b>Optical zoom</b>	10x optical zoom with vibration compensation
<b>View angle</b>	ultra zoom 6.9° - extra wide 58.2°, focal 33.0 mm - 3.3 mm
<b>Noise reduction</b>	Special 3D noise reduction function
<b>Focus</b>	Autofocus with Direct Focus Zoom synchronization
Memory and data recording	
<b>Memory</b>	Internal high-speed SSD 128GB or 256GB for image and video recording External slot for Micro SD card & USB 2.0 for USB stick for taking images
<b>Image and video formats</b>	Radiometric JPEG images and Digital camera Full HD JPEG images Radiometric TIFF images (Pix4D and Agisoft compatible for 3D modeling) Digital camera h.264 encode video HD recording Radiometric full-frame IR recording (raw data recording in 30 Hz or < 9 Hz)



GPS geo-tagging (image & video)	
GPS tagging (image & video)	MavLink or External GPS or DJI A3 controllers compatible via CAN bus
Interfaces & real-time remote control	
10-pin digital port	S.BUS CAN bus (compatible with DJI M600 and A3 controllers) MavLink External GPS connectivity External trigger
Ethernet (RJ-45) port	Video streaming and camera control (optional on request only)
Micro USB 2.0 port	Mass storage Camera control and video streaming (optional on request only)
USB 2.0 port	Keyboard connection for in-house WIRIS camera control
Remote control system	WIRIS OS ensures real-time control of all camera functions during the flight
Remote control options	S.BUS protocol CAN bus for real-time control on DJI M600 and GPS geo-tagging RJ-45 for wireless uplink installation (video streaming and camera control)
Camera functions	<b>Measurement functions:</b> Hot/cold spot detection, center point <b>Temperature range settings:</b> Automatic, manual or span mode <b>Advanced alarm modes:</b> Above, below, between, above & below <b>Multi camera modes:</b> Full screen mode, IR only, VIS only, Picture in Picture <b>Periodic capturing:</b> From 1s, IR and VIS images simultaneously <b>Temperature units:</b> Celsius, Fahrenheit, Kelvin <b>Measurement corrections:</b> Emissivity correction <b>NUC control settings:</b> Automatic, manual, by time or triggered by operator
Micro HDMI video output	1 280 x 720 pixels (720p), Aspect ratio 16:9, Micro HDMI video output
Software & SDK	
Desktop software	Advanced thermal analysis and reporting SW for Windows
SDK for Matlab	Workswell SDK for MATLAB
Power supply, weight & dimensions	
Input supply voltage	9 – 36 VDC, Coaxial 2 x 6.4 mm, outer shell - GND
Power dissipation (avg.)	12 W
Weight	< 430 grams
Dimensions (L x W x H)	83 mm x 85 mm x 68 mm
Mounting	2 x 1/4-20 UNC thread (1x bottom side, 1x upper side)
Housing material	Durable aluminium body for long-time measurement stability
Environmental	
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-30 °C to +60 °C





## Contact information

### Sales Department

**Mobile:** +420 737 547 622

**E-mail:** [sales@workswell.eu](mailto:sales@workswell.eu)

### Headquarters

Workswell s.r.o.

U Albrechtova vrchu 12

155 00, Prague 13

Czech Republic

### Partners Worldwide

Visit our [partner list online](#)

### Company contact details

**Mobile:** +420 725 877 063

**E-mail:** [info@workswell.eu](mailto:info@workswell.eu)

**Web:** [www.workswell.eu](http://www.workswell.eu)

