

Xiris® XIR-1800 Thermal Camera

The **Xiris XIR-1800** is a High Dynamic Range (HDR) Thermal Camera designed for critical metal welding and DED Additive Manufacturing applications where thermal properties and geometric features must be precisely controlled.

With **120+ dB HDR capability** and sensitivity to the Short-Wave InfraRed (SWIR) spectrum, the XIR-1800 captures detailed thermal imaging of metal joining processes that goes beyond standard thermal or visible-light cameras.



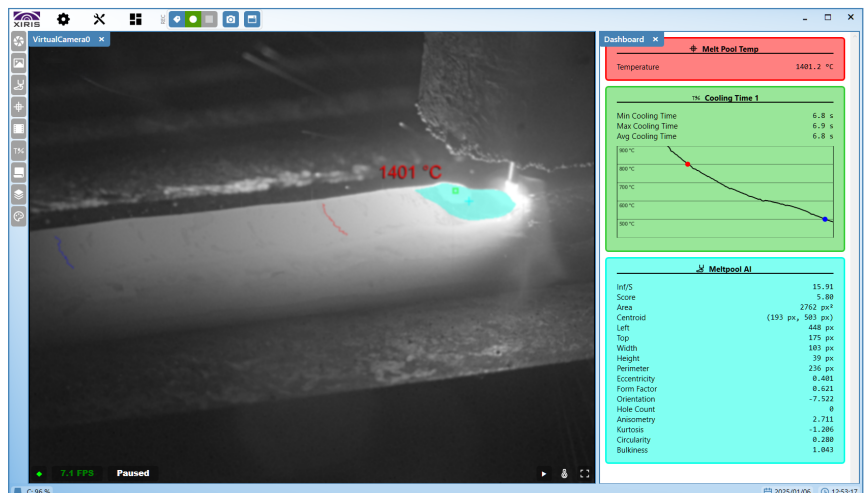
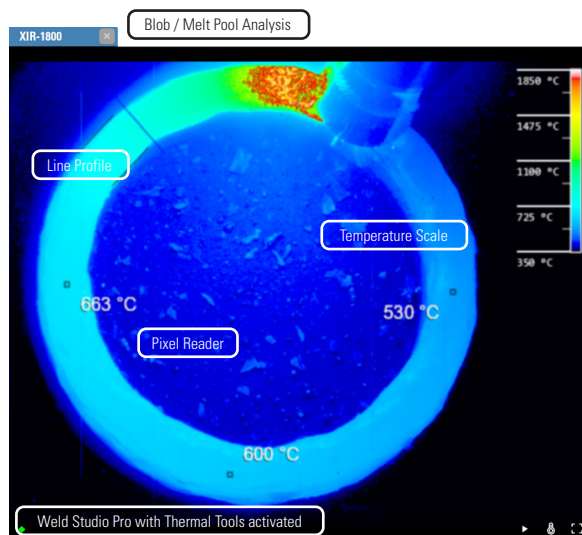
Key Benefits

Creates thermal maps of weld zones, including the melt pool, deposited material, and heat-affected zone.

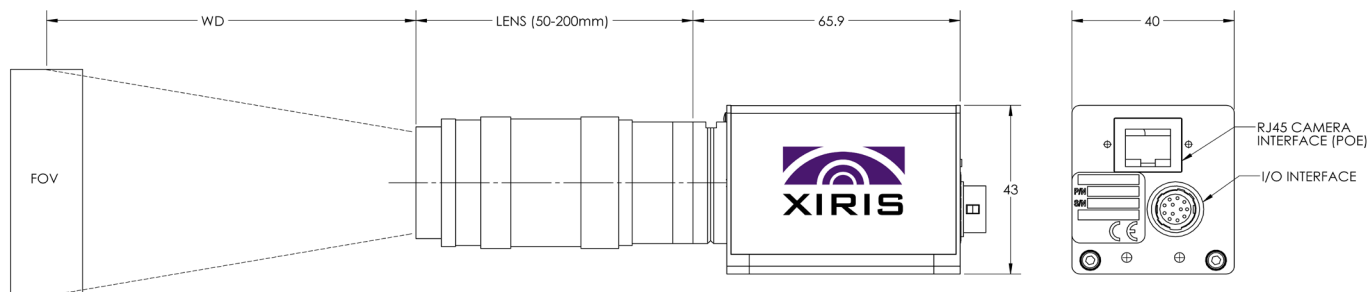
Delivers clear imaging of welding processes, even in smoke or fumes environment.

Equipped with **WeldStudio™ Pro Software**, offering machine vision and AI tools for precise analysis:

- **Melt Pool Blob Analysis:**
Automatically segments and measures the melt pool using user-defined thresholds or advanced AI.
- **Pixel Reader:**
Provides precise temperature measurements on any point of the image.
- **Line Profile:**
Delivers precise temperature data along a user-defined line on the image.
- **Cooling Time Tool:**
To measure the t8/5, t12/8 or other cooling rate over a temperature range.
- **Real Time Interface:**
With automation using Modbus/TCP, OPC-UA, Beckhoff ADS and more.
- **Low Temperature Pyrometer:**
Enables accurate preheat and interpass temperature measurement at lower temperature ranges.



Camera Body Outline



Standard Lens Configurations

WD (mm)	F = 30 mm FoV (mm)	F = 50 mm FoV (mm)	F = 75 mm FoV (mm)	F = 150 mm FOV (mm)
100	29 × 23	15 × 12	N/A	N/A
200	62 × 49	34 × 27	19.5 × 16	12 × 9
300	93 × 74	54 × 43	33 × 26	19 × 16
400	125 × 100	74 × 59	46 × 37	27 × 21
500	155 × 125	93 × 67	59 × 47	34 × 28

Other lens options available.

Thermal Camera Configurations

Camera Dimensions	40 (W) × 43 (H) × 66 (L) mm without lens	Image Sensor	1" SWIR HDR InGaAs +120 dB
Camera Weight	140 g without Lens	Wavelength Sensitivity	900 - 1700 nm
Environmental Rating	IP54 (without housing)	Resolution	640H × 512V Pixels (15 µm square pixels)
Shutter Range	10 µs – 5000 µs Exposure	Standard Temperature Calibration	350 - 1500°C
Environmental Temperature	Ambient up to 35°C; Up to 80°C with cooling plate	Extended Temperature Calibration (Optional)	400 - 1850°C and higher on request
Camera Connectors	Locking RJ 45 Ethernet (Cat 6+) Hirose HR10A for I/O and Trigger	Frame Rate	Up to 180 fps at full resolution; Up to 1000 fps at reduced resolution with AOI
Lens Mounting	C/CS Mount	Thermal Calibrated Mode	100+ fps, hardware dependent
Software	Xiris WeldStudio™ Pro, WeldSDK	Image Data Format	14 Bit Imaging, 16 Bit with Thermal Calibration
Humidity	Operating: 20 to 80% (non-condensing)	Camera Controls	Exposure Time, Frame Rate, AOI, Image format, Trigger and I/O

Other accessories such as optics, cables, controllers, power adapters, etc., can be provided upon request.



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