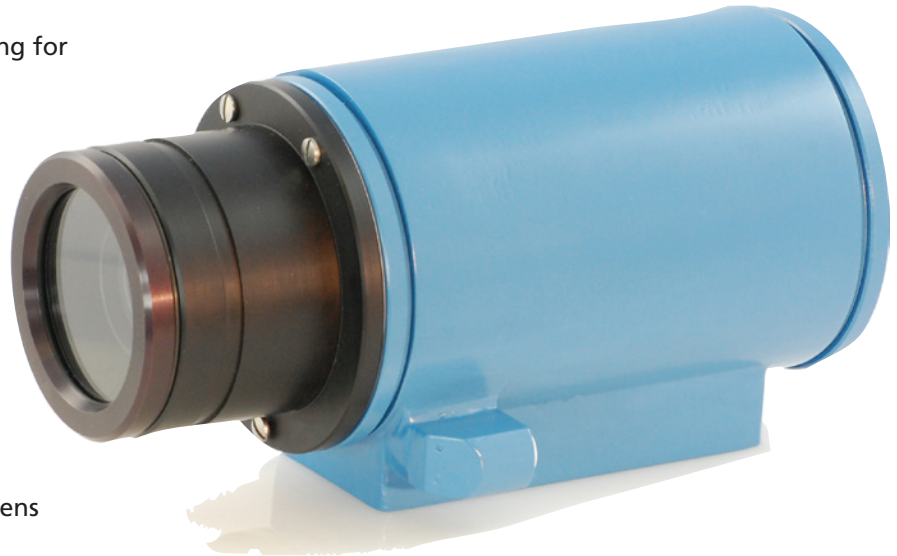


Compact, short wavelength thermal imaging process camera for non-contact temperature measurement of metallic surfaces, graphite, or ceramics

MCS640-HD



- 640 x 480 pixel detector for high quality images of even the smallest objects
- Accurate to within +/- 0.5% of reading for superior temperature measurement
- Image acquisition of 60 frames per second for dynamic temperature processes
- Gigabit Ethernet Interface for real-time data transfer and remote monitoring over local area network
- Designed to withstand ambient temperatures from 0oC to 50oC without external cooling
- Typical Weight: 3.0 Kg (depends on lens configuration)
- Heavy duty, rugged water cooled enclosure for harsh high temperature environments



The MIKRON MCS640-HD from LumaSense Technologies, Inc., is a short wavelength infrared (SWIR) thermal imager with internal digital signal processing. This imager is designed to accurately measure temperatures between 600 and 3000 °C, with minimal interference from temperature reflections on the object. This makes it suitable for applications such as measurements on metallic surfaces, graphite and ceramics, etc.

The MCS640-HD can be paired with an optional water cooled enclosure for additional protection in harsh industrial environments where ambient temperatures exceed 50 °C. LumaSense offers a wide variety of compatible optics for the MCS640-HD, allowing each instrument to be configured to exactly meet the measurement needs of the desired scene.

Microscopic lenses are also available, allowing accurate measurement of small objects, such as filament temperatures.

The 640 x 460 resolution pixel detector is designed to allow precise targeting of small objects in a wider field of view.

The built-in Gigabit Ethernet (GigE) interface allows the camera to be connected to the network for long range data transmission or to LumaSense's application software for further analysis.

Typical Applications:

- Preheating
- Annealing
- Tempering
- Welding
- Forging
- Hardening
- Sintering
- Melting
- Soldering
- Brazing
- Rolling
- Tempering
- E-Beam Tip

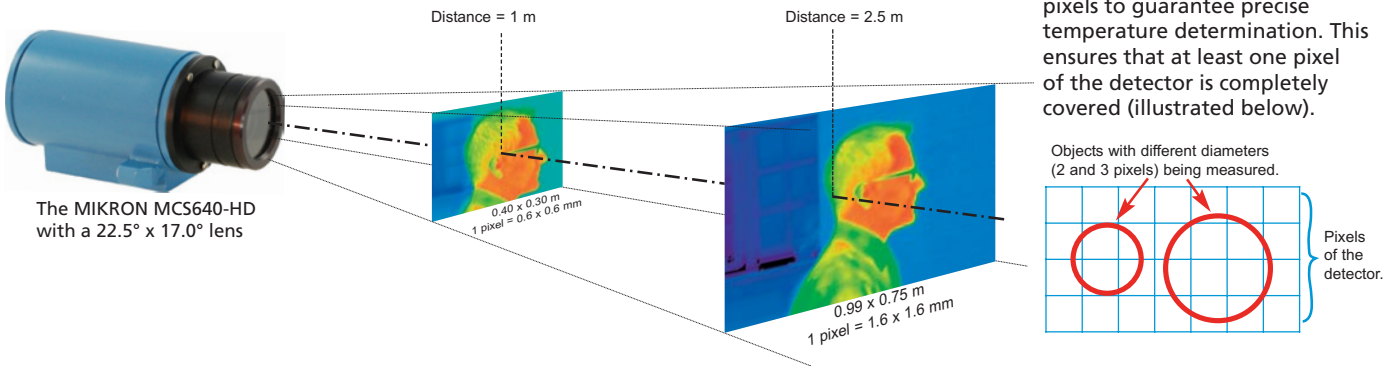
Optics

A wide range of alternative lenses are available for the MCS640-HD, making the thermal imager suitable for most applications.

Distance of object [m]	Measurement field W x H [m]					
	3.5° x 2.6°	5.4° x 4.0°	10.8° x 8.1°	22.5° x 17.0°	33.3° x 25.3°	40.4° x 30.9°
1.00	0.06 x 0.05	0.09 x 0.07	0.19 x 0.14	0.40 x 0.30	0.60 x 0.45	0.74 x 0.55
1.50	0.09 x 0.07	0.14 x 0.10	0.28 x 0.21	0.60 x 0.45	0.90 x 0.67	1.10 x 0.83
2.50	0.15 x 0.11	0.24 x 0.17	0.47 x 0.35	0.99 x 0.75	1.50 x 1.12	1.84 x 1.38
10.00	0.61 x 0.45	0.94 x 0.70	1.91 x 1.43	3.98 x 2.99	5.98 x 4.49	7.36 x 5.53

Note: Distances in the table may not apply to some high-temperature situations. Be sure to consult the Applications Team to determine the proper distance for your application.

The table (right) and picture (below) show the correlation between the measurement distance, different optics, and the size of the measurement fields.

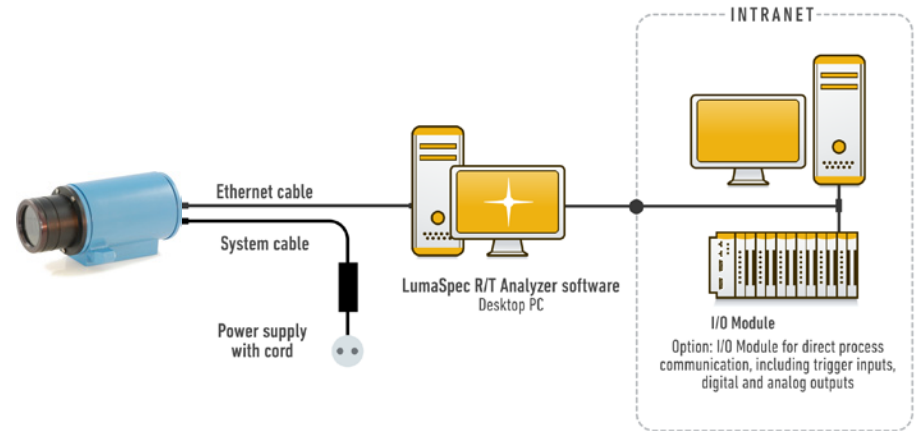


System Configuration

LumaSense's thermal imagers offer several configuration options.

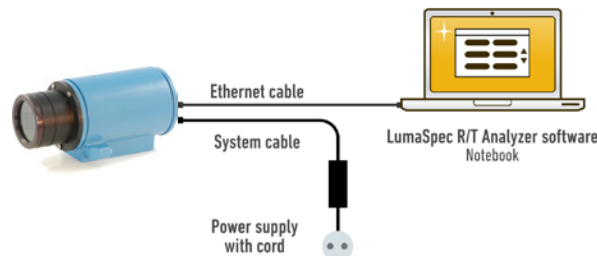
MCS640-HD over network

The system can be set up by connecting the camera to a network device (switch) or by connecting the camera directly to a dedicated computer using a cross-over Ethernet cable.



MCS640-HD mobile setup

Additionally, the camera can be used with a desktop PC or with a notebook PC for a mobile measuring system.



Reference Numbers

MCS640-HD/I5, (780...1080 nm)		MCS640-HD/I1, (850 nm)	
461H1625-HD	standard lens (10.8° x 8.1°), 60 Hz, 600 ... 1600 °C	461J1625-HD	standard lens (10.8° x 8.1°), 60 Hz, 600 ... 1600 °C
461H1608-HD	wide angle lens (33.3° x 25.3°), 60 Hz, 600 ... 1600 °C	461J1608-HD	wide angle lens (33.3° x 25.3°), 60 Hz, 600 ... 1600 °C
461H1612-HD	wide angle lens (22.5° x 17°), 60 Hz, 600 ... 1600 °C	461J1612-HD	wide angle lens (22.5° x 17°), 60 Hz, 600 ... 1600 °C
461H1650-HD	telephoto lens (5.4° x 4.0°), 60 Hz, 600 ... 1600 °C	461J1650-HD	telephoto lens (5.4° x 4.0°), 60 Hz, 600 ... 1600 °C
461H1675-HD	telephoto lens (3.5° x 2.6°), 60 Hz, 600 ... 1600 °C	461J1675-HD	telephoto lens (3.5° x 2.6°), 60 Hz, 600 ... 1600 °C
461H3025-HD	standard lens (10.8° x 8.1°), 60 Hz, 800 ... 3000 °C	461J3025-HD	standard lens (10.8° x 8.1°), 60 Hz, 800 ... 3000 °C
461H3008-HD	wide angle lens (33.3° x 25.3°), 60 Hz, 800 ... 3000 °C	461J3008-HD	wide angle lens (33.3° x 25.3°), 60 Hz, 800 ... 3000 °C
461H3012-HD	wide angle lens (22.5° x 17°), 60 Hz, 800 ... 3000 °C	461J3012-HD	wide angle lens (22.5° x 17°), 60 Hz, 800 ... 3000 °C
461H3050-HD	telephoto lens (5.4° x 4.0°), 60 Hz, 800 ... 3000 °C	461J3050-HD	telephoto lens (5.4° x 4.0°), 60 Hz, 800 ... 3000 °C
461H3075-HD	telephoto lens (3.5° x 2.6°), 60 Hz, 800 ... 3000 °C	461J3075-HD	telephoto lens (3.5° x 2.6°), 60 Hz, 800 ... 3000 °C

Scope of delivery: 2 m Ethernet cable, 2 m power supply cable, HD enclosure, power supply unit (100 to 240 VAC, 47 to 63 Hz), mounting adapter, PCI/Gigabit Ethernet card (depending on computer), lens cap, manual (on CD), carrying case, and LumaSpec R/T Viewer software.

NOTE: The MCS640-HD camera is designed to operate on a 32 or 64-bit Windows™ based computer with the following (minimum) components: Dual Core 1.5 GHz or faster processor, 4 GB RAM (running at 1600 MHz), Dedicated Video Card with 1 GB of 900 MHz DDR3 dedicated RAM, 7200 RPM Hard Drive with a 16 MB buffer and using a 3.0 GB/sec SATA bus, Gigabit Ethernet card that supports Jumbo Packets up to 9014 bytes.

Accessories

3 832 950	Lab power supply (24 V DC, 1.25 A)	812 0009 01	Software LumaSpec R/T Basic
3 832 970	DIN rail mounted power supply (24 V DC, 2.5 A)	812 0029 01	Software LumaSpec R/T Analyzer
3 821 360	Connecting cable, 5 m	812 0029 06	Software LumaSpec R/T Analyzer - Multi 6
3 821 370	Connecting cable, 10 m	912 0042 01	Tower Style Controller
3 821 380	Connecting cable, 15 m	57 0013	LumaSpec R/T Industrial Grade Laptop
3 821 390	Connecting cable, 25 m	912 0014 01	Remote I/O Blocks (8 analog outputs)
3 829 850	CAT 6 Ethernet cable, 7.5 m	912 0015 01	Remote I/O Blocks (Alarm Kit, 8 Channels, Relay)
3 829 860	CAT 6 Ethernet cable, 15 m	912 0016 01	Remote I/O Blocks (Remote trigger kit)
3 829 870	CAT 6 Ethernet cable, 25 m	912 0017 01	Remote I/O Blocks (8 analog, 8 alarm outputs)
3 835 490	Adaptor for mounting rail to tripod	912 0018 01	Remote I/O Blocks (32 analog, 32 alarm outputs)
3 834 410	Adjustable mounting support (3 hole)	912 0019 01	Remote I/O Blocks (8 analog inputs)
812 0008 01	Software LumaSpec R/T Viewer		

MCS640-HD camera w/ LumaSpec R/T Control Software Salient Feature List

- Adjustable emissivity, background, and transmission settings
- Real-time display of thermal images with frame capture and sequence capture
- Includes 19 different color palates
- Auto-Gain available for entire image or ROI
- Multiple types of ROI including point, line, and area with temperature display
- Includes analysis tools like histogram, 3D profile, line profile, and temperature trend
- Alarm generation for entire or ROI image based on minimum, maximum or average temperature
- Support for OPC (OPC DA 2.0) with user-defined scan rate
- Analog and digital output module
- Web server functionality
- Triggered capture based on alarm conditions
- Password controlled user access
- Digital zoom up to 8X
- Data export to text or Microsoft Excel (includes thermal image, ROI table summary/data, image data) or to text
- Modbus TCP/IP available
- Multi-camera configuration with camera auto start feature
- Image subtraction available
- Analyze previously recorded images
- Export captured sequences to AVI
- Image format compatible with LumaSpec Offline Analyzer software for advanced analysis and report writing
- Optional SDK

LumaSense Technologies

Awakening Your 6th Sense

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