



Marine Thermography Services



What Is Thermography?

Thermography is a non-destructive diagnostic method that uses infrared imaging to detect temperature variations in machinery, systems, and components.

These variations can reveal:

01

Electrical faults

02

Insulation breakdowns

03

Mechanical wear and tear

04

Overheating parts

Introduction to Marine Thermography Services



At CMA, we offer cutting-edge marine thermography services designed to enhance operational efficiency, minimize equipment failure, and prevent costly downtime.



Leveraging state-of-the-art infrared technology and certified expertise, we ensure that your marine assets remain in peak condition.



Additionally, our team includes three engineers certified by the world-renowned Infrared Training Center (ITC), guaranteeing unmatched quality in every inspection.



CMA's People Certifications for Marine Thermography Services



Importance of Thermography in Shipping Industry



Identify potential failures before they disrupt operations and schedules.

Reduce repair costs with targeted troubleshooting, avoiding major breakdowns.

Improve vessel performance through timely detection of abnormalities.

Mitigate risks by preventing overheating and fire hazards onboard.

Ensure compliance with safety and environmental regulations effectively.

Extend equipment life by maintaining optimal operating conditions.

Empower teams with accurate thermal data for strategic planning.

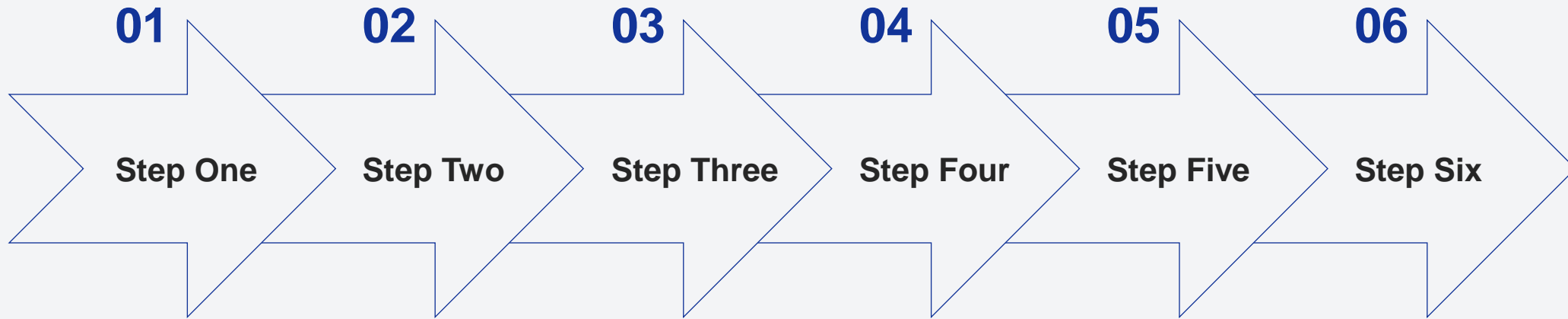
Leverage advanced technology for superior service quality and reliability.

Benefits of Marine Thermography for Companies

- ✓ **Enhance Safety:** Infrared thermographic surveys are non-contact, non-destructive examinations.
- ✓ **Prevent Costly Repairs:** Detect potential failures before they escalate into major problems.
- ✓ **Minimize Downtime:** Plan maintenance proactively to avoid unexpected operational halts.
- ✓ **Improve Efficiency:** Ensure all systems are functioning optimally, reducing energy consumption.



Our Process



Identify areas to be thermographically inspected.

Conduct preliminary inspections of vessels and equipment.

Capture thermal images in real-time during operations.

Analyze thermal images for anomalies and issues.

Prepare detailed reports on findings and recommendations.

Take corrective actions based on the thermography results in systems where CMA's expertise allows for intervention.

Case Studies: Successful Implementation



Problem Faced

Detecting faults from thermal imaging analysis.



Solution Offered

Implementing thermography for thermal imaging analysis.



Benefits

Early detection of failures.

Approach

01

Assessment

02

Implementation

03

Monitoring

04

Analysis

FLIR E95 24° datasheet



FLIR E95 24°

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Customer support

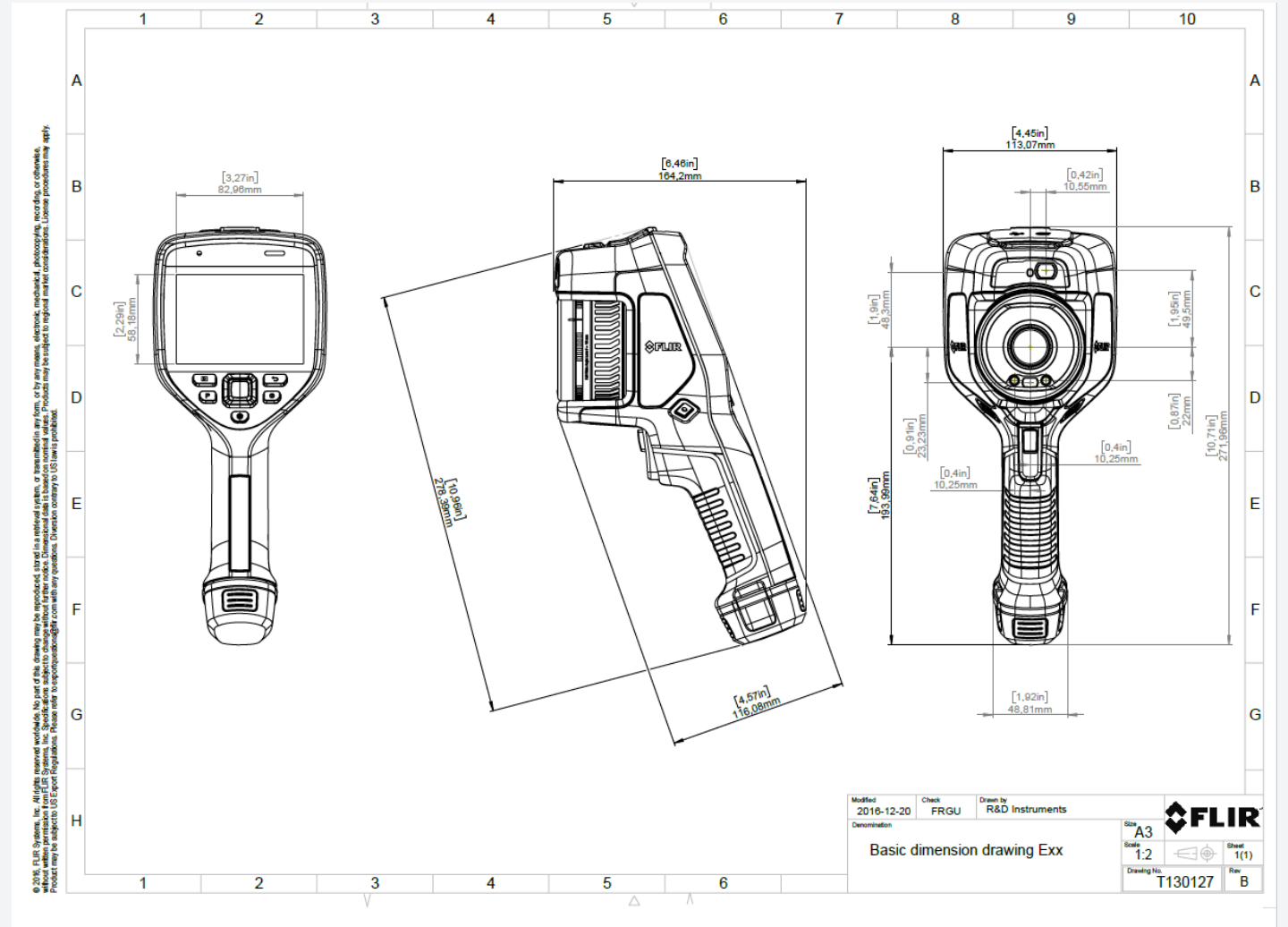
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Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.



Imaging and optical data	
Infrared resolution	464 x 348 pixels
UltraMax (super-resolution)	Yes
NETD	<40 mK @ +30°C (+86°F)
Field of view	24° x 18°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.5 m (1.64 ft.)
Focal length	17 mm (0.67 in.)
Spatial resolution (IFOV)	0.90 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal) • 42° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1-4x continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5-14 μm
Detector pitch	17 μm



CE Declaration of Conformity

February 20, 2018 Täby, Sweden

AQ320222

CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR E53 / E75 / E85 / E95 -series
Name and address of the manufacturer:
FLIR Systems AB
PO Box 7376
SE-187 15 Täby, Sweden

This declaration of conformity is issued under the sole responsibility of the manufacturer.
The object of the declaration: FLIR E53 / E75 / E85 / E95 -series (Product Model Name FLIR-E7850).
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Directives:		
Directive	2012/19/EU	Waste electrical and electric equipment
Directive	2014/53/EU	Radio Equipment Directive (RED)
Directive	1999/519/EC	Limitation of exposure to electromagnetic fields (SAR)
Directive	2011/65/EU	RoHS and 2015/830/EU

Standards:		
Emission:	EN 61000-6-3/A1:2011	Electromagnetic Compatibility Generic standards – Emission
Immunity:	EN 61000-6-2:2005 Draft EN 301489-1:2016 v2.1.0 EN 301489-17:2012 v2.2.1	Electromagnetic Compatibility Generic standards – Immunity
Laser:	EN 60825-1	Safety of laser products
Radio:	ETSI EN 300 328	Harmonized EN covering essential requirements of the R&TTE Directive
SAR:	EN 62209-2	Human exposure Wireless
Safety (Battery charger):	IEC 60950-1:2005+A1 EN 60950- 1:2006+A11:2009+A1:2010+A2:2013+AC:2011+A12:2011	Information technology equipment
RoHS:	EN 50581:2012	Technical documentation

FLIR Systems AB
Quality Assurance



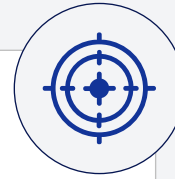
Lea Dabiri
Quality Manager

Future Trends in Marine Thermography Services



Vision

To lead the marine industry in innovative thermography solutions that enhance safety and efficiency at sea.



Mission

Deliver advanced thermographic services that empower shipping companies to optimize vessel performance and resolve specific issues with minimal downtime.



Values

Commitment to innovation, safety, sustainability, and customer-centric service in marine thermography services.



Why Choose Us?

- ✓ **Experience in the Marine Sector:** Decades of expertise in serving the maritime industry.
- ✓ **Comprehensive Support:** From diagnostics to post-inspection support, we are with you every step of the way.
- ✓ **Commitment to Quality:** Certified by leading industry bodies, ensuring unparalleled service standards.

Book Your Thermography Survey Today

Ensure the longevity and reliability of your marine equipment.
Schedule your thermography survey now to eliminate risks and optimize performance.



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THANK YOU

