

MESOTECH



I N T E R N A T I O N A L



AIRPORT WEATHER ADVISOR®

Runway Heading and Light Intensity
Monitor (RHLIM)

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Precision Monitoring for Airfield Lighting
Systems



SYSTEM OVERVIEW

The Mesotech International Runway Heading and Light Intensity Monitor (RHLIM) is an essential component of automated weather observing systems designed to provide accurate, real-time monitoring of airfield lighting conditions. The RHLIM integrates seamlessly with the Airport Weather Advisor® (AWA™) system to deliver comprehensive runway lighting status information critical for safe aviation operations.

Runway lighting intensity monitoring is a critical requirement for ICAO-compliant automated weather stations. The RHLIM continuously measures and reports the operational status of runway edge lights, centerline lights, and active runway heading indicators. This real-time data enables air traffic controllers and pilots to make informed decisions regarding landing and takeoff operations, particularly during reduced visibility conditions.

KEY FEATURES

- Monitor up to 8 lighting loops simultaneously
- Voltage and current sensing capabilities
- Real-time runway heading detection
- ICAO compliant reporting integration
- Industrial-grade reliability
- Remote configuration and diagnostics

PRIMARY APPLICATIONS

- ICAO Annex 3 compliant automated weather observing systems
- Category I, II, and III instrument approach airports
- Military airfield weather stations
- Remote and unmanned airport facilities

SYSTEM CAPABILITIES

The RHLIM monitors airfield lighting through multiple sensing methods. Voltage transducers measure control signal voltages to determine light intensity settings, while current transducers (4-20 mA) monitor actual current flow through lighting circuits. The system can simultaneously track up to eight independent lighting loops, including runway edge lights (centerline and edge) and active runway heading indicators.

Data from the RHLIM is transmitted to the central AWA™ processing station via RS-485 serial communication, where it is integrated with meteorological observations and included in standard aviation weather reports (METAR/SPECI). The system features advanced diagnostics including AC power monitoring, low battery detection, and sensor fault reporting.

TECHNICAL SPECIFICATIONS

PARAMETER	SPECIFICATIONS
Model Number	MT-RHLIM-01
Lightning Loops Monitored	Up to 8 independent channels
Voltage Input Channels	8 channels (M1-M6 + V7-V8)
Current Input Channels	8 channels (CS1-CS8)
Voltage Sensor Range	0-32 VDC, 0-280 VAC
Current Sensor Type	Clamp-on transducers
Current Measurement Range	Up to 20A (lighting loop)
Heading Detection	Voltage or current based
Communication Interface	RS-232/RS-485/RS-422 and Ethernet
Data Update Rate	Configurable (1-60 seconds)
Operating Temperature	-10°C to +70°C
Storage Temperature	-15°C to +85°C
Relative Humidity	20% to 90% non-condensing
Power Input	100-240 VAC, 50/60 Hz, 50W
Power Consumption	< 15W typical
Backup Battery Support	Optional (external 12V battery)
Enclosure Type	NEMA 3R rated
Enclosure Material	Painted steel
Enclosure Dimensions (W×H×D)	14" × 12" × 6" (356 × 305 × 152 mm)
Mounting	Wall-mount
Weight	Approx. 12 lbs (5.4 kg)
Compliance	FCC Part 15 Class A, CE
Warranty	2 years standard

FEATURES & BENEFITS

Multi-Channel Monitoring

Simultaneously monitors up to 8 independent lighting circuits including runway edge, centerline, and threshold lights. Supports both LED and incandescent lighting systems.

- ✓ Complete runway lighting coverage
- ✓ Redundant monitoring for safety
- ✓ Compatible with existing infrastructure

Dual Sensing Technology

Combines voltage transducers for control signal monitoring with current transducers for actual load verification, providing comprehensive system diagnostics.

- ✓ Detects control system failures
- ✓ Identifies individual lamp failures
- ✓ Validates light intensity levels

Intelligent Runway Heading Detection

Automatically determines active runway configuration by monitoring heading selector voltages, eliminating manual configuration changes.

- ✓ Reduces operational workload
- ✓ Eliminates configuration errors
- ✓ Supports bidirectional runways

Industrial-Grade Reliability

Built with commercial-grade components in a standard NEMA 3R electrical enclosure, designed for harsh airport environments and continuous operation.

- ✓ Extended service life
- ✓ Minimal maintenance requirements
- ✓ Operates in extreme temperatures

Advanced Diagnostics

Comprehensive self-monitoring capabilities including power supply status, communication health, sensor integrity, and battery backup conditions.

- ✓ Proactive fault detection
- ✓ Reduced troubleshooting time
- ✓ Enhanced system uptime

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INTERNATIONAL

Seamless AWA Integration

Designed specifically for Airport Weather Advisor® systems with plug-and-play installation and automatic configuration discovery.

- ✓ Rapid deployment
- ✓ Standardized maintenance
- ✓ Centralized monitoring



AIRPORT WEATHER ADVISOR™

The Airport Weather Advisor® FAA Certified and ICAO compliant System meets the requirements of Annex 3 to the Convention on International Civil Aviation (ICAO) for automated meteorological observing systems. This comprehensive system provides accurate, reliable weather data essential for international aviation operations.

The system is designed to support international airports with Category I, II, and III instrument approach and landing operations, providing real-time meteorological parameters affecting landing and take-off operations in compliance with ICAO standards.

ABOUT MESOTECH

Based in Sacramento, California, Mesotech originally supplied small meteorological stations to various industries. With over 30 years of experience, we have established a global client base, including hundreds of airports worldwide. Despite our success, we still prioritize personal attention and customer service, which is the foundation of our reputation.

Our weather systems have been installed globally, and have been in continuous use by the US Air Force since 2001. As a prime contractor, we provide engineering, helpdesk, and logistics support for 220+ USAF/Army systems worldwide and were recognized as the Region IX Small Business Prime Contractor of the Year in 2014. **Leveraging our extensive expertise from military operations, we are proud to offer high-caliber weather systems to any airport.**

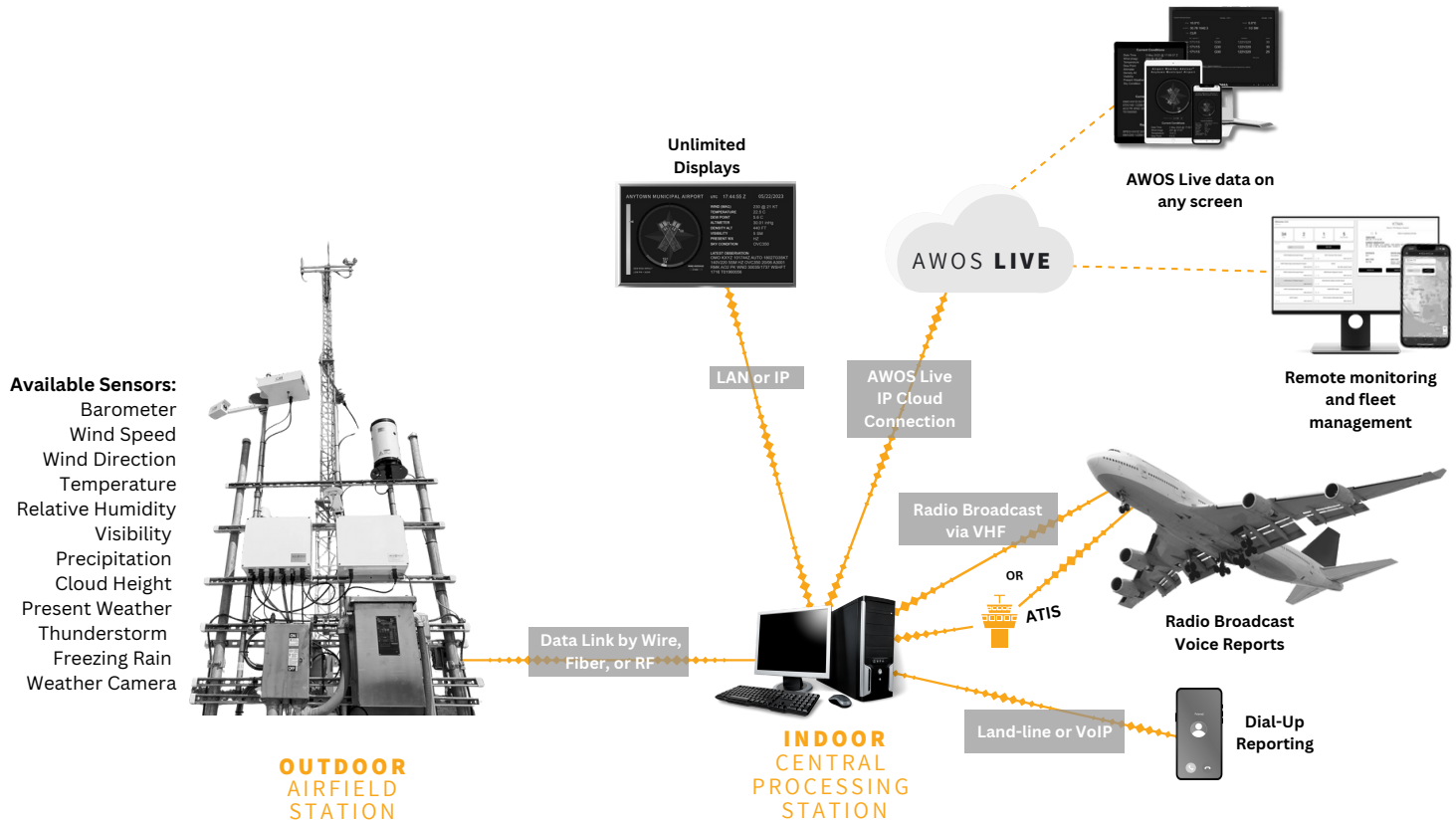


It's the personal touch that matters and that's where we here at Mesotech outshine all the rest. Customer service matters to us and we deliver in a way that the larger companies can only dream of. Our help desk is fully staffed by engineers and technicians who provide daily support. When you call us, we answer, we listen, and we act fast producing solutions quickly and efficiently.



SYSTEM OVERVIEW

AWA™ Automated Weather Observing Systems provide airports with a robust, end-to-end solution for continuous weather monitoring, integrating advanced meteorological sensors, centralized data processing, and a secure cloud platform to deliver real-time, ICAO-compliant weather observations and diagnostics.



Outdoor Airfield Station:

Equipped with meteorological sensors, the airfield station collects and verifies data quality before transmitting sensor readings and diagnostic information. Sensor suite is customizable to meet airport needs.

Indoor Central Processing Station:

This station processes sensor data into accurate weather observation reports, archives the information, and serves as a hub for user interaction and data dissemination.

Secure Cloud Platform -

AWOS Live: Designed for 24/7 remote monitoring, AWOS Live enables pilots to access real-time access to weather data and system diagnostics.

Airport Weather Advisor® AWOS Live **Weather Camera**

Real-Time Weather, Visual, & Remote Insights at Your Fingertips



INSTALLATION & CONFIGURATION

The RHLIM is designed for straightforward installation by qualified technicians. The system mounts in standard equipment racks or on walls near the runway lighting control equipment. All connections are made through clearly labeled terminal blocks with comprehensive wiring diagrams provided on the enclosure door.

Sensor Configuration

SENSOR TYPE	INPUT CHANNELS	CONFIGURATION
Voltage Transducers	M1-M6, V7-V8	0-10 VDC input DIP switch: UP position
Current Transducers	CS1-CS8	4-20 mA input DIP switch: DOWN position
Runway Heading	M7-M12	Voltage level detection 0V=Inactive, 5V=Active

Software Configuration

Configuration is performed through the USB service port using the RHLIM configuration utility. The intuitive menu-driven interface guides operators through device setup, light level calibration, and system verification. Configuration data is stored in non-volatile memory and retained during power cycles.

Light Level Calibration

The RHLIM features an automated calibration procedure that maps control system settings to actual light intensity levels. During calibration, the system samples sensor readings at each brightness setting (typically 0-6) and stores reference values for accurate reporting. Recalibration is recommended annually or after lighting system modifications.

MAINTENANCE & SUPPORT

The RHLIM is designed for minimal maintenance requirements. Once installed and configured, the system operates autonomously with built-in self-diagnostics alerting operators to any issues. Routine maintenance consists of periodic visual inspections and cleaning.

Recommended Maintenance Schedule

INTERVAL	MAINTENANCE TASK
Monthly	Visual inspection of enclosure Check indicator LEDs Verify reporting status
Quarterly	Clean enclosure exterior Check terminal connectors verify calibration accuracy
Annually	Perform full system calibration Inspect wiring and connections Update firmware if available
As Needed	Replace failed sensors Clean connector contacts Service power supply

Technical Support

Mesotech International provides comprehensive technical support for all RHLIM installations. Our engineering team is available to assist with installation planning, configuration, troubleshooting, and system optimization. All support requests are handled by experienced engineers and technicians who provide rapid response and effective solutions.

Technical Support Hours: Monday-Friday, 6:00 AM - 6:00 PM Pacific Time

Phone: 1-800-MESOTECH (1-800-637-6832)

Email: support@mesotech.com

Website: www.mesotech.com/support



CONTACT US

we're here to help you make informed decisions about your aviation weather systems. Whether you're looking for expert advice, support for an existing system, or customized solutions to meet your airport's needs, our team is ready to assist.

Your Weather, Our Expertise. Let's Connect!



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TO COMPLETE OUR INTEREST FORM,
AND A MEMBER OF OUR TEAM WILL
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