

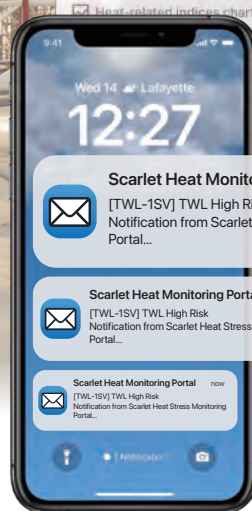
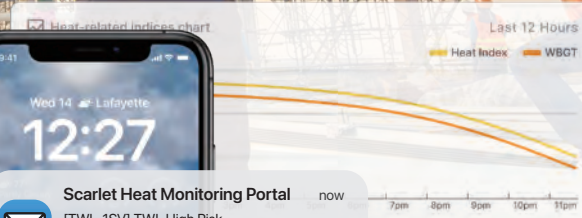
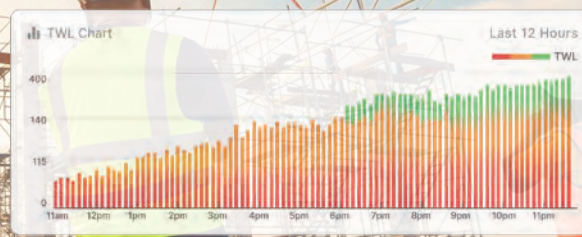
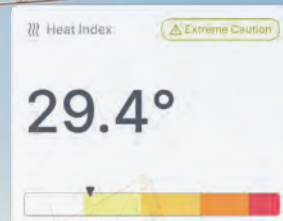
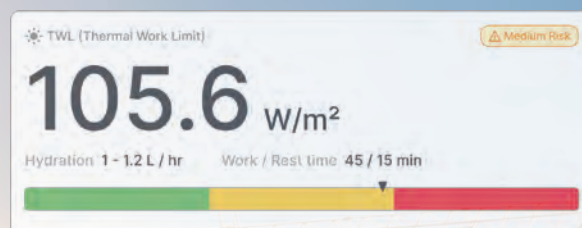
ALL-NEW



SCARLET | TECH

TWL-1SV

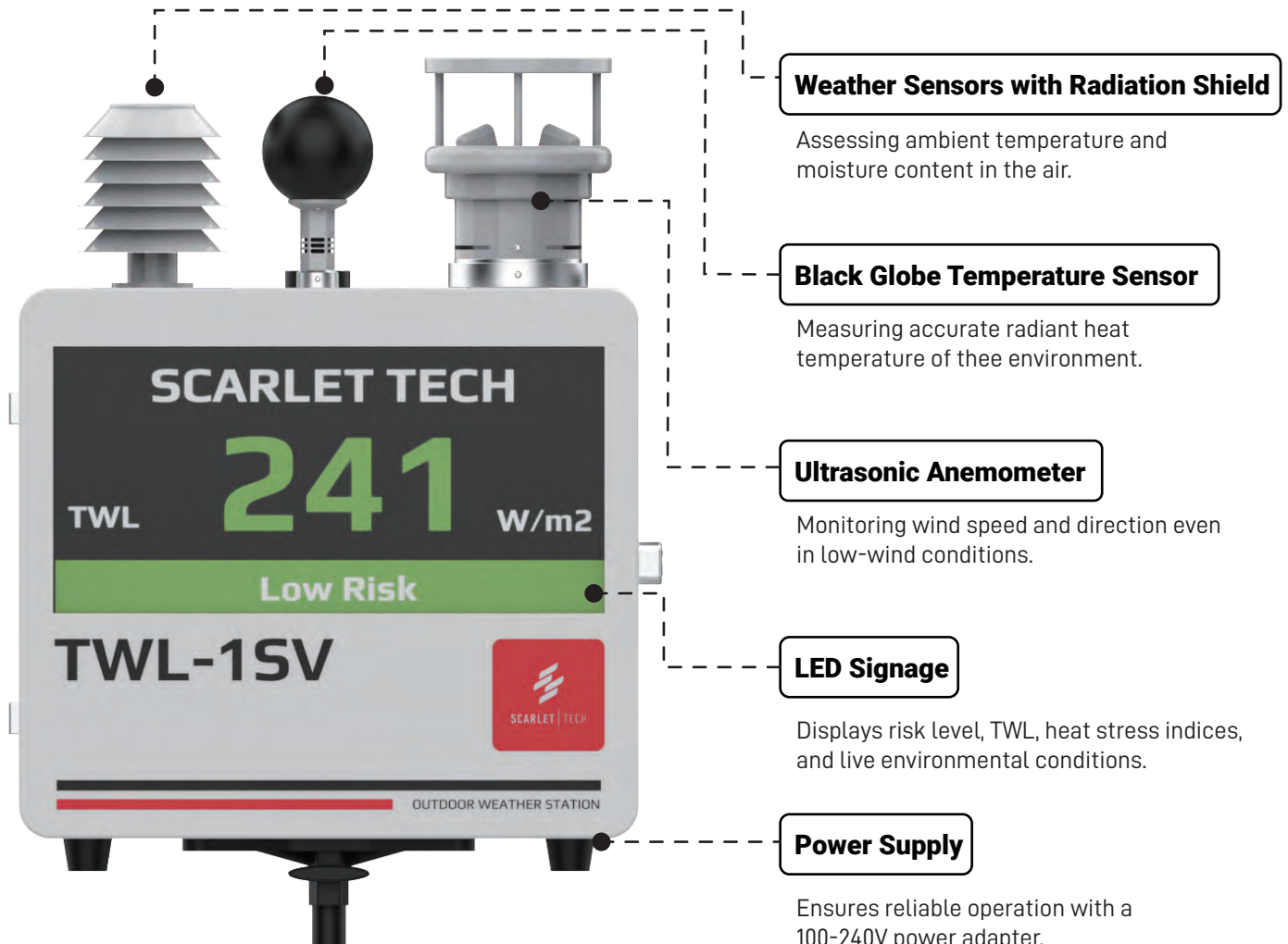
Online Real-Time Heat Stress Monitoring for Worksites



- Measure TWL, WBGT, Heat Index
- Live LED signage for instant monitoring & alert
- Remote real-time monitoring via the internet
- Get instant heat stress alerts via web or email
- Historical data backup on device and web portal cloud
- Ensure OSHA compliance for heat safety

Real-Time Heat Stress Detection with Remote Access

The TWL-1SV is a powerful, cloud-ready heat stress weather station designed to enhance workplace safety in high-temperature environments. Its LED signage displays key heat stress indices—including TWL, WBGT, and Heat Index—along with real-time warning status, keeping workers and supervisors informed of changing conditions and potential heat stress risks.



Flexible Connectivity for Easy Integration

All heat stress indices and key weather data measured by the TWL-1SV can be transmitted to the cloud for remote monitoring or integrated with PCs and existing systems via a serial port.



LAN

Provides internet connectivity to the cloud portal through the RJ45 connector.



Serial

Accesses data using serial commands via MODBUS/RS485 parameters.



Cloud-Based Heat Monitoring Web Portal

Scarlet Online Heat Monitoring Web Portal displays heat indices and weather factors measured by TWL-1SV, providing real-time data and visual alerts. With the web portal, user can remotely monitor multiple TWL-1SV stations, ensuring comprehensive heat management from any location.



Real-Time Data

- Heat indices
- Weather parameters



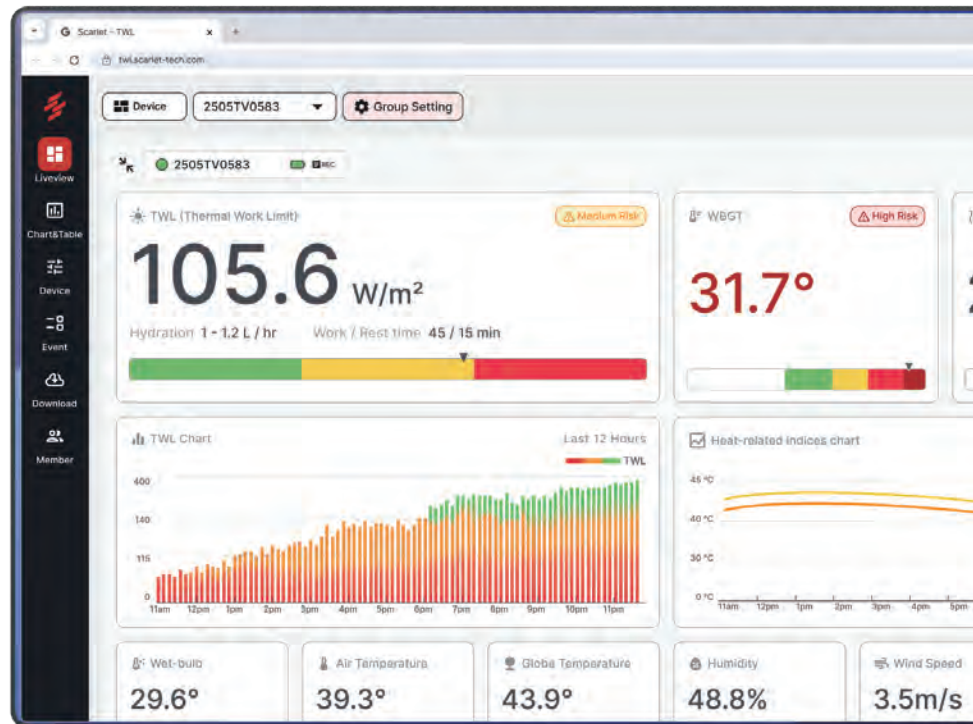
Instant Alert

- Email notifications
- Color-coded browser alerts



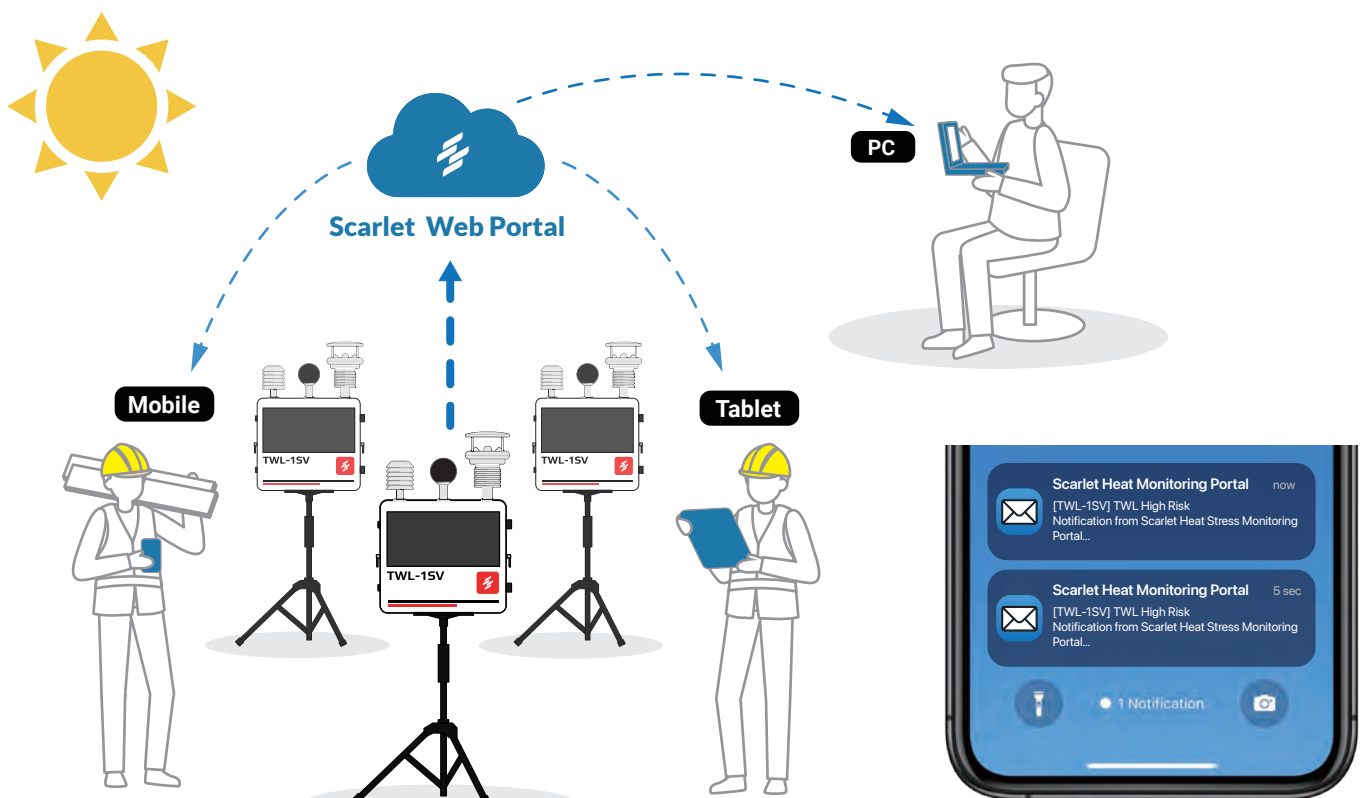
Data Logging

- Cloud-based data storage
- Intuitive charts and tables



Instant Alert on Your Smart Device

Web Portal delivers live data, historical trends, and real-time TWL heat alerts via browser or email — from any location. HSE officers get instant mobile risk alerts without stepping away from the job; management gets remote worksite monitoring and direct report downloads.



Technical Specifications

1. Heat Stress Indices

Item	Description
Wet-bulb temperature (Tw)	Operating range: 0 to 66 °C Resolution: 0.1 °C
Wet-bulb globe temperature (WBGT)	$WBGT = 0.7 \times Tw + 0.2 \times Tg + 0.1 \times Ta$ Resolution: 0.1 °C
Thermal work limit (TWL)	W/m ² Dynamic calculation based on Tw, Tg, Ta and WS
Heat index (HI)	Operating range: 0 to 66 °C Resolution: 0.1 °C

2. Environmental Parameters

Item	Description
Globe thermometer (Tg)	Operating range: 0 to 80 °C Accuracy: ±1.5 °C (15 to 40 °C); ±2.0 °C (others) Resolution: 0.1 °C
Dry-bulb temperature (Ta)	Operating range: -20 to 90 °C Accuracy: ±1.5 °C Resolution: 0.1 °C
Relative Humidity (RH)	Operating range: 0 to 100 % RH Accuracy: ±2% Resolution: 0.1%
Wind speed (WS)	Operating range: 0 to 70 m/s Accuracy: ±0.3 m/s (WS ≤ 10 m/s); ±3 % (WS > 10 m/s) Resolution: 0.1 m/s
Wind direction (WD)	Operating range: 0 to 359° Accuracy: ±3% Resolution: 1°

3. System

Item	Description
Power Supply	Integrated AC PSU: 100 to 240V (Default)
	Solar panel and battery pack (Optional)
Measurement Frequency	2 minutes (in accordance with TWL measurements)
Internet Connection	Ethernet (via RJ45 connector)
	2.4GHz Wi-Fi
	4G LTE (SIM card not included)
Display	16-inch Full-Color Outdoor LED Signage
Memory & Storage	8GB microSD (Pre-installed)
Data Format	CSV format (PC-compatible)
Alarm	User-configurable thresholds; supports LED color change and relay trigger
Relay Output	12VDC Wet Contact (Max. 150mA) to drive external alert devices
Degree of Protection	Sensor: IP67 (Waterproof)
	Console / Main Body: IP65 (Water-resistant)
Device Dimensions	20 × 45 × 60 cm (D x W x H, including sensors)
Tripod Dimensions	13 x 13 x 100 cm (Folded); Extendable up to 200 cm in height
Weight	10 kg (approx. 22 lbs)

4. Cloud Portal

Item	Description
Multi-Device	Supports centralized management for multiple stations
Liveview Dashboard	Real-time visual tracking via cross-platform web browser (PC/tablet/mobile)
Data Refresh	Every 2 minutes
Alert Notification	Instant Email & visual alert on dashboard
Cloud Datalogging	Historical trend charts and table views
Data Export	PC-compatible CSV format for advanced analysis
User Access	Admin and viewer permission control
Data Security	Encrypted HTTPS connection hosted on AWS

