2025 ALL-NEW

TWL-1SV

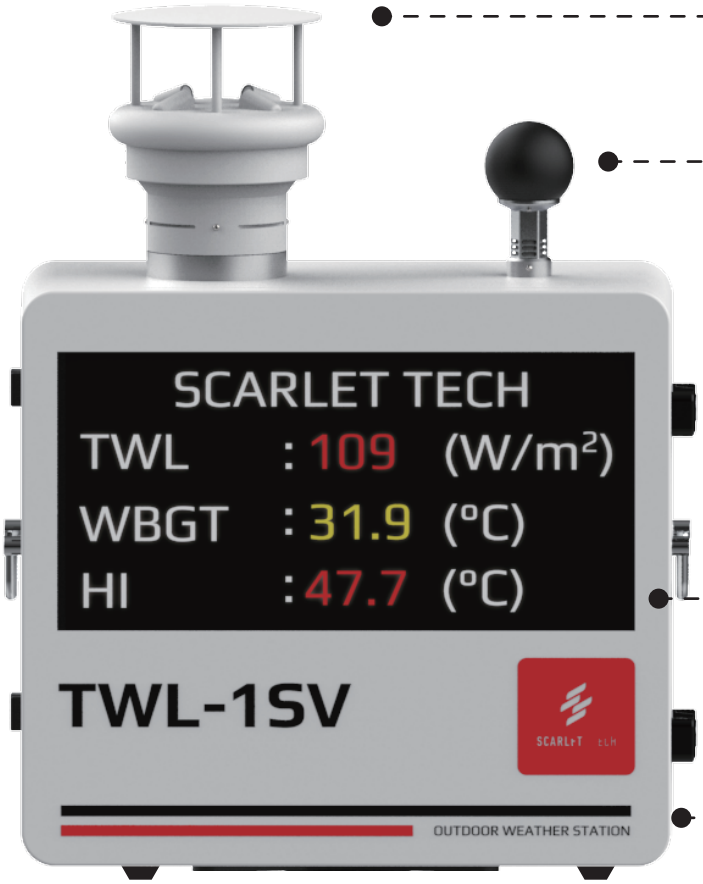
Online Heat Stress Weather Station

SCARLET | TECH

- 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 safety and protect workers in high-temperature environments. It features built-in LED signage that displays key heat stress indices—including TWL, WBGT, and Heat Index—along with real-time warning statuses, keeping on-site workers and supervisors continuously informed of changing conditions.



Ultrasonic Wind Sensor

- **Air temperature & humidity**
  Assessing ambient temperature and moisture content in the air.
- **Wind speed & direction**
  Monitoring wind speed and direction even in low-wind conditions.

Black Globe Temperature Sensor

Measuring accurate radiant heat temperature of the environment.

LED Signage

Live data reading, ensure to know the situation in time.

Power Supply

Ensures reliable operation with a 100-240V power adapter.

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

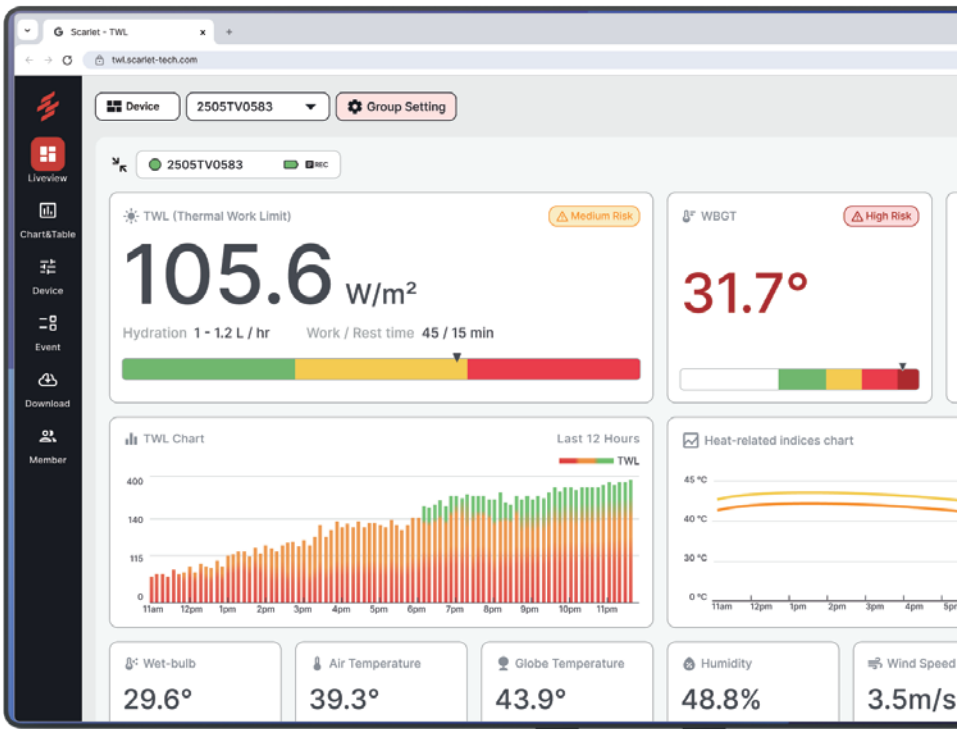
- Heat indices
- Weather parameters

Inst ant Alert

- Email notifications
- Color-coded browser alerts

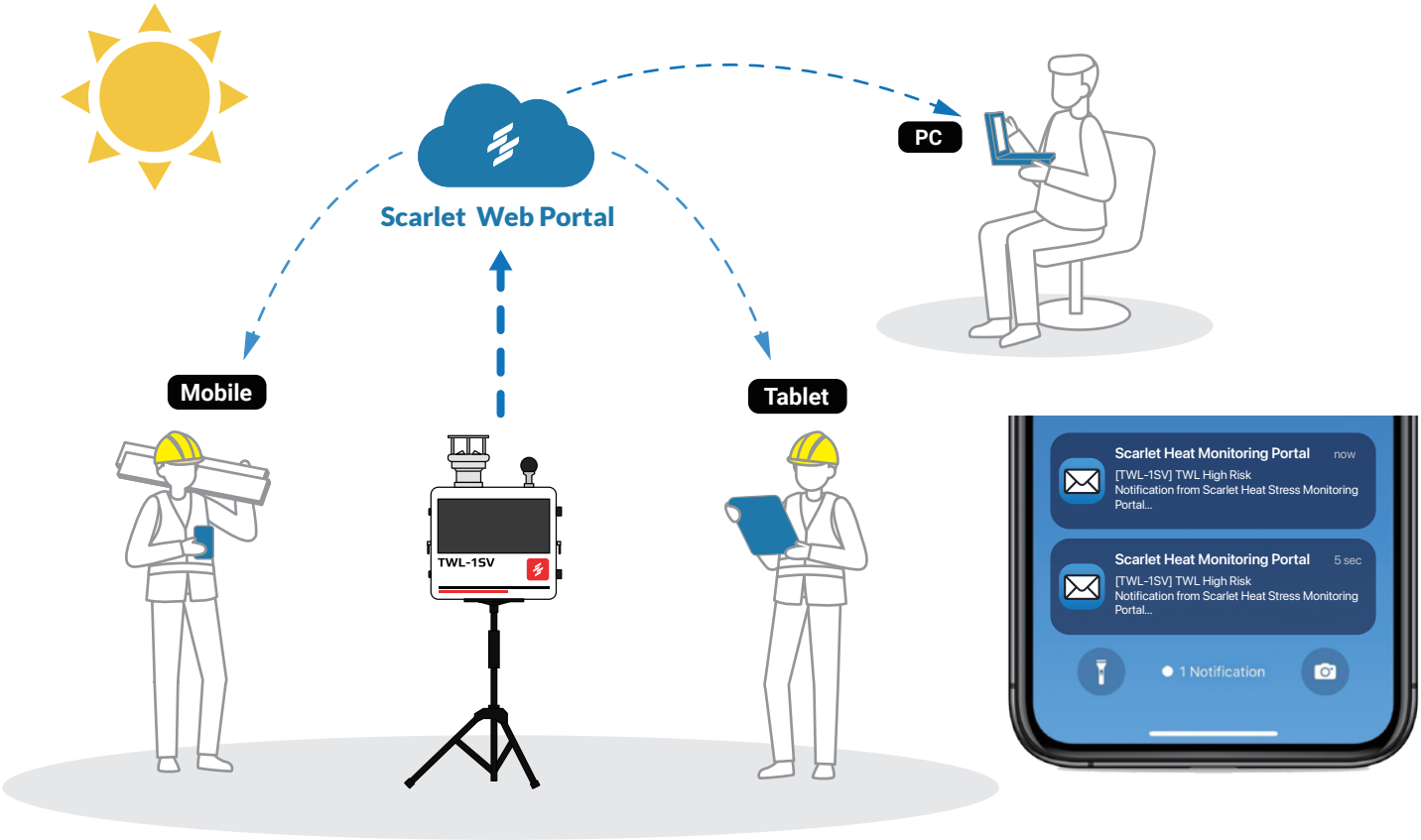
Data Logging

- Cloud-based data storage
- Intuitive chartd and tables



Instant Alert on Your Smart Device

Access TWL-based heat alerts through the cloud portal, ensuring users receive notifications via browser or email from any location. On-site HSE officers can monitor TWL levels directly on their mobile devices, even when attending to other tasks. Meanwhile, higher management can monitor worksite heat stress status remotely.



Specifications

• Heat stress index

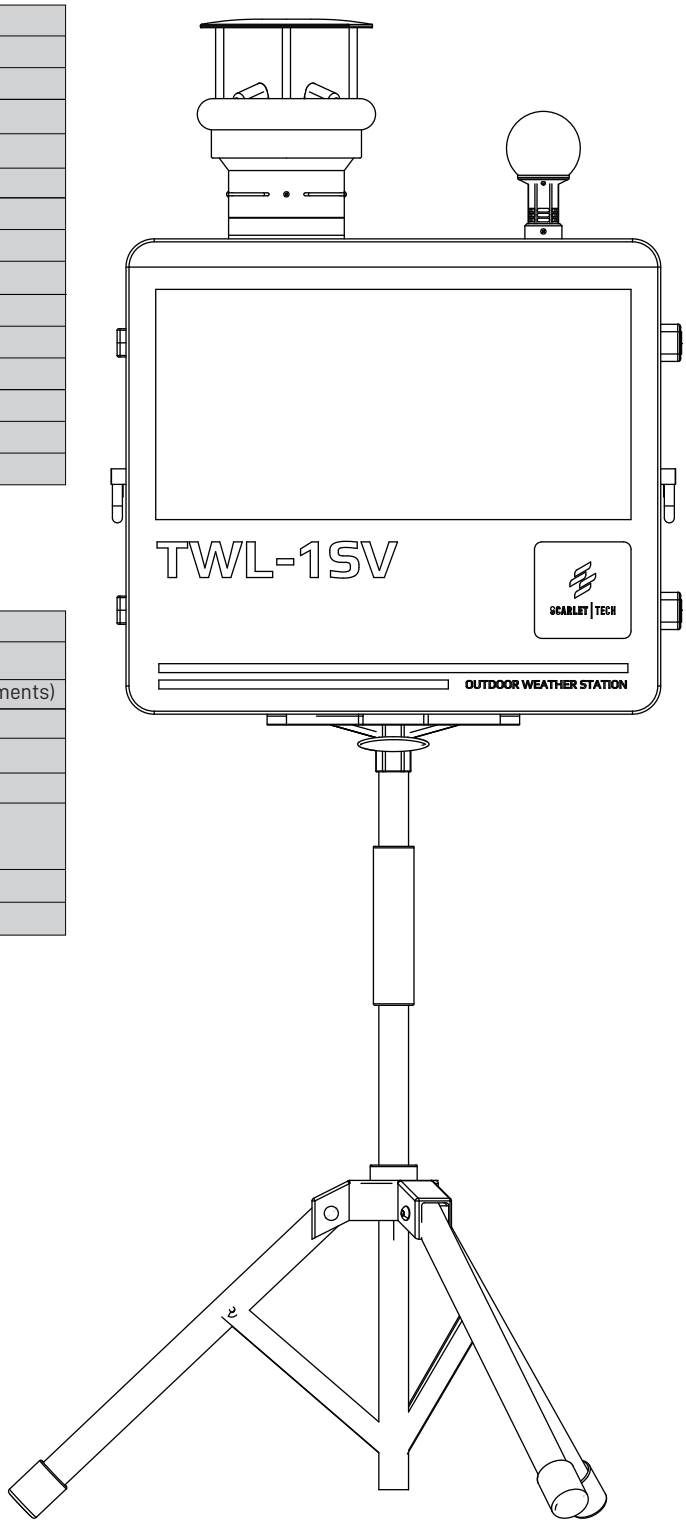
Wet-bulb temperature	Operating range: 0 to 66 °C
	Resolution: 0.1 °C
Wet-bulb globe temperature (WBGT)	WBGT = 0.7 x Tw + 0.2 x Tg + 0.1 x Ta
	Resolution: 0.1 °C
Thermal work limit (TWL)	Dynamic calculation based on Tw, Tg, Ta and WS
	Safe max < 38.2 °C
Heat index (HI)	Operating range: 0 to 66 °C
	Resolution: 0.1 °C

• Environmental sensor

Globe thermometer	Operating range: -40 to 120 °C
	Accuracy: ±0.1 °C (@25 °C)
	Resolution: 0.1 °C
Dry-bulb temperature	Operating range: -20 to 90 °C
	Accuracy: ±0.3 °C
	Resolution: 0.1 °C
Humidity	Operating range: 0 to 100 % RH
	Accuracy: ±2%
	Resolution: 0.1%
Wind speed	Operating range: 0 to 70 m/s
	Accuracy: ±0.3%; ±3% of reading (> 10m/s)
	Resolution: 0.1 m/s
Wind direction	Operating range: 0 to 359° (no blank sector)
	Accuracy: ±3°
	Resolution: 1°

• System

Power supply	100 to 240V AC power adapter (Default)
	Solar panel & battery pack (Optional)
Measurement frequency	2 minutes (in accordance with TWL measurements)
Internet connection	Ethernet via RJ45 connector (Default)
	Wi-Fi (Optional)
	4G LTE (Optional)
Degree of protection	Sensor: IP67 waterproof; Console: IP65 water resistant
Device dimension	36 x 42 x 15 cm
Weight	8.5 kg



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