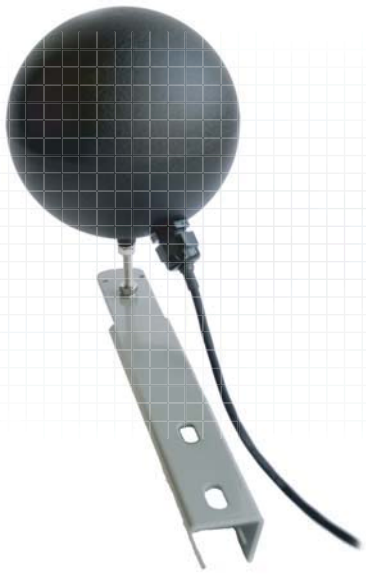
CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

Black Globe

Temperature Sensor for Heat Stress



Manage Heat Stress

WBGT Calculation for Heat Stress

More info: **780.454.2505**
campbellsci.ca/blackglobe-l

Overview

Loss of physical and mental efficiency occurs under definable degrees of heat stress. Severe heat stress can lead to fatigue, exhaustion and possibly even disability or death. The Wet Bulb Globe Temperature Index (WBGT) combines the effects of temperature, humidity, radiant heat, and wind into one single index employed to express environmental heat stress.

The Black Globe Temperature Sensor for Heat Stress uses a thermistor inside a 6" hollow copper sphere painted black to measure radiant temperature. This measurement, along with the measurement of ambient air and wet bulb temperatures, may be used to calculate the WBGT index.

Heat stress can be reduced by decreasing the lengths of exposure and decreasing the workload of individuals under heat stress. Situation factors such as the type of clothing worn, the type of work performed, the psychological effects of stress, and availability of fluids can also affect the assessment of heat stress.

These factors are not easily quantified, and so the individual in a given situation must estimate their significance. Environmental factors such as temperature, humidity, and wind are more easily measured to assess heat stress.

Specifications

- Temperature Measurement Range: -5° to +95°C
- Temperature Survival Range: -50° to +100°C
- Thermistor Interchangeability Error:
  - Typically <±0.2°C over
  - 0°C to 70°C and ±0.3 @ 95°C
- Polynomial Linearization Error: ±0.5°C over -7°C to +90°C
- Near Normal Emittance: 0.957