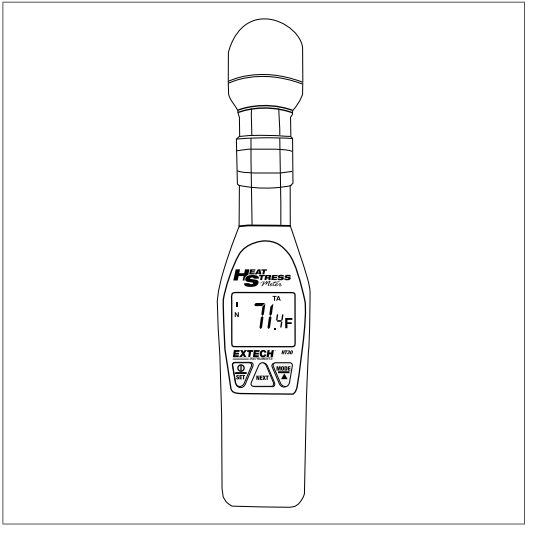
EXTECH

USER MANUAL

Heat Stress, Wet Bulb Globe Temperature (WBGT) Meter

MODEL HT30



Introduction

The HT30 uses a Black Globe sensor to measure WBGT (Wet Bulb Globe temperature) to analyze the impact of humidity, direct or radiant sunlight, and air temperature on an individual's heat stress.

Features include selectable temperature units, WBGT heat stress alarm, automatic power off (APO), and PC interface.

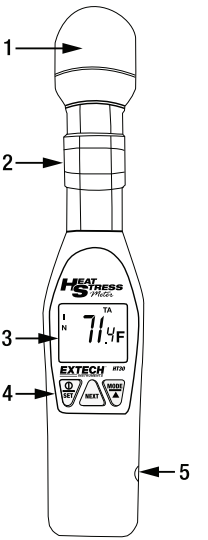
This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Description

METER

1. Black Globe temperature sensor
2. Protective cover for humidity and air temperature sensors
3. Display
4. Control buttons
5. PC interface jack

Battery compartment is on back of meter.



CONTROL BUTTONS

⏻ SET	Short press to switch ON or OFF. To access the WBGT alarm set point: Switch OFF the meter and then long press the SET button for 2 seconds.
NEXT	Simultaneously press MODE and NEXT to toggle temperature units. Press NEXT, when changing the alarm set point, to move to the next digit. Long press NEXT to return to normal operation after setting the WBGT alarm.
MODE ▲	Short press to select a mode of operation. Long press to toggle indoor (IN) and outdoor (OUT) use. The up arrow button is used when setting the WBGT alarm set point.

DISPLAY SYMBOLS

Symbol	Function
WBGT	Wet Bulb Globe temperature
TG	Black Globe temperature
TA	Air temperature
RH%	Relative humidity
OUT	Outdoor use
IN	Indoor use
C/F	Temperature units
▯	Low battery indicator

Operation

BASIC USE

1. Press the power button to switch ON or OFF.
2. Slide the protective cover down to expose sensors when taking readings. Slide the cover up to protect sensors when storing.
3. Press MODE to select mode of operation: Wet Bulb Globe temperature (WBGT), air temperature (TA), Black Globe temperature (TG), relative humidity (RH).
4. Press MODE and NEXT simultaneously to toggle the temperature units.
5. Long press MODE to toggle indoor (IN) and outdoor (OUT) use. For outdoor use, direct sun exposure modifies the reading.
6. Read the measurement on the display. To better interpret the readings, refer to the Appendices section.

ALARM

The HT30 features a heat stress alarm. The alarm beeper sounds when the a WBGT reading exceeds the alarm set point. The set point range is 68.0 to 99.0°F (20.0 to 37.2°C).

1. Switch OFF the meter and then long press the SET button for 2 seconds to access the alarm set point, the most significant digit will be blinking.
2. Use the up arrow button to adjust the digit value.
3. Short press the NEXT button to select the next digit for editing.
4. When all digits are set, long press the NEXT button to return to normal operation.
5. When the WBGT alarm set point is exceeded, the beeper will sound. To silence the beeper, switch OFF the HT30.

AUTO POWER OFF (APO)

APO automatically switches OFF the meter after approximately 20 minutes. To disable APO, switch OFF the meter and then long press the SET and MODE buttons for 2 seconds. The display will switch ON and briefly show "**n**", indicating that APO has been disabled. Note that APO will be enabled again (default) the next time the meter power is cycled.

PC INTERFACE

The HT30 includes a 3.5 mm female mono jack on the right side of the meter. Order the optional PC Windows® software and cable (3.5 mm to USB) using part number **407752**. You can also download the software from the website, address below. The software

allows you to stream data from the meter to a PC. Instructions for use are available from within the software program.

https://www.flir.com/support-center/Instruments/extech-software-downloads/

Maintenance

BATTERY REPLACEMENT

When the low battery indicator appears, replace the two ‘AAA’ batteries observing correct polarity. The battery compartment is located on the back of the HT30. Do not operate the meter while the battery compartment is open.

Do not dispose of used batteries or rechargeable batteries in household waste.

STORAGE

Remove the batteries and store separately. Keep meter in its original packaging or other protective case when storing.

CLEANING

With the meter OFF and the sensor cover closed, wipe the meter housing with a damp cloth. Do not use solvents or abrasives.

ERROR DISPLAY CODES

E2	Measurement is out of range (too low)
E3	Measurement is out of range (too high)
E4	Display error (service required)
E11	RH calibration error (service required)
E33	Circuit error (service required)

Specifications

Wet Bulb Globe temperature (WBGT) range	32 to 122°F (0 to 50°C)
WBGT accuracy	WBGT readings are based on air temperature and humidity measurements, therefore WBGT accuracy is dependent on the accuracy of air temperature and humidity measurements.
Black Globe temperature range (TG)	32 to 176°F (0 to 80°C)
TG Accuracy	Indoor (IN): ± 4°F (2°C) Outdoor (OUT): ± 5.5°F (3°C)
Air temperature (TA) range	32 to 122°F (0 to 50°C)
TA accuracy	± 1.8°F (1.0°C)
Temperature display resolution	0.1°F (0.1°C)
Relative humidity (RH) range	0.0 to 100.0%
RH accuracy	±3% at 77°F (25°C); from 10 to 95% RH
RH display resolution	0.1% RH
Power supply	Two (2) x 'AAA' 1.5 V batteries (battery life approximately 1000 hours)
Operating temperature	32 to 122°F (0 to 50°C)
Operating humidity	Maximum 80% RH
Operating altitude	7000 ft. (2000 m)
Dimensions	Meter: 10 x 1.9 x 1.1 in. (254 x 48.7 x 29.4 mm) Black Globe diameter: 1.57 in. (40 mm) Black Globe height: 1.37 in. (35 mm)
Weight	4.8 oz. (136 g)

Appendices

WBGT RISK ASSESSMENT FOR ATHLETES

WBGT Reading	Risk Level	NOTES
< 65°F (18°C)	Low	Low Risk.
65 to 73°F (18 to 23°C)	Moderate	Risk increases as event progresses through the day.
74 to 82°F (24 to 28°C)	High	Injury potential.
> 82°F (28°C)	Hazardous	Reschedule or delay the event until conditions improve.

SYMPTOMS OF HEAT STRESS

CONDITION	SYMPTOMS	FIRST-AID
Sunburn	Redness, pain. In severe cases: swelling, blisters, fever, headaches.	Mild cases with blisters: Ointment. If breaking occurs, apply dry, sterile dressing. See a physician for serious cases.
Heat cramps	Painful spasms, typically in leg muscles or stomach. Sweating.	Firm pressure or gentle massaging on cramping muscles. Sip water if there is no nausea.
Heat exhaustion	Heavy sweating, weakness. Cold, pale, clammy skin. Weak pulse. Fainting. Vomiting.	Go to shaded area, lie down, and loosen clothing. Apply wet cloth. Fan or move victim to air conditioned area. Sip water if there is no nausea. For persistent vomiting, seek immediate medical attention.
Heat stroke (sunstroke)	High body temperature 106°F (41°C) or higher. Hot, dry skin. Rapid, strong pulse. Loss of consciousness possible.	**Heat stroke is a severe medical emergency. Seek medical attention and take victim to hospital immediately. Delay can be fatal.** Keep the victim cool (cold bath, sponging, fans, air conditioning). Remove clothes. Do not give fluids.

Limited 2–Year Warranty

FLIR Systems, Inc. warrants this Extech brand instrument to be free of defects in parts and workmanship for two (2) years from date of purchase. To view the full warranty, please visit the site below.

https://www.extech.com/support/warranties

Customer Support

Local Telephone Support List	https://support.flir.com/contact
Return Material Authorization (RMA)	https://customer.flir.com/Home
Customer Support	https://support.flir.com/ContactService
Technical Support	https://support.flir.com

FLIR Systems, Inc. offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products.

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Website
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Customer support
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