Tenmars TM-188D
Heat Stress WBGT Meter with Datalogger

SKU: TENTM188DWH
Manufacture Warranty period: 12 months
Country of Origin: Taiwan

Introduction

The HEAT STRESS WBGT METER is quick-response with accurate measurement for the effects of temperature, humidity, and direct or radiant sunlight.

This instrument is ideal for the athletic trainers, military, occupational (Industrial) hygienists, outdoor worker and the sports medicine specialists; and it's designed according to the regulations mentioned below.

In order to measure the WBGT index, you should refer to the following regulations:
ISO7243 : Hot environments. Estimation of the heat stress on working man.
ISO7726 : Ergonomics of the thermal environment-instruments for measuring physical quantities.

Features

- Quick-response capacitance sensor, accurate measurement.
- Max/Min and data hold
- Low battery indication.
- LCD display with LED blacklight.
- Switch the temperature unit to ℃ or ℉.
- Brass black ball in 50mm diameter.
- WBGT alarm settings.
- Auto power off with disable function.
- Data logging capacity; 12000 records.
- Interface; USB PC serial interface.
- Sampling interval; Max 24 hours; Min 1 Second.

Special Notes:

*GMM Technoworld Pte Ltd re-verification the upper range of **Air Temperature (TA)** of TM-188/188D, 50℃ meet the MOM's requirements accuracy of ±1℃.
Reference to Caltek Pte Ltd, Calibration Certificate No. CTS 2612M-23 dated 4 Dec 2023.

GMM Technoworld Pte Ltd re-verification the upper range of **Globe Temperature (TG) of TM-188/188D, 60℃ meet the MOM's requirements accuracy of ±2℃.
Reference to Caltek Pte Ltd, Calibration Certificate No. CTS 2656M-23 dated 20 Dec 2023.

Based on above confirmation, the upper range of both **WBGT (50℃) and Wet bulb temperature (50℃)** would meet the MOM's specification.

We will provide the Calibration Certificate No. CTS 2612M-23 dated 4 Dec 2023 and Calibration Certificate No. CTS 2656M-23 dated 20 Dec 2023 upon request.
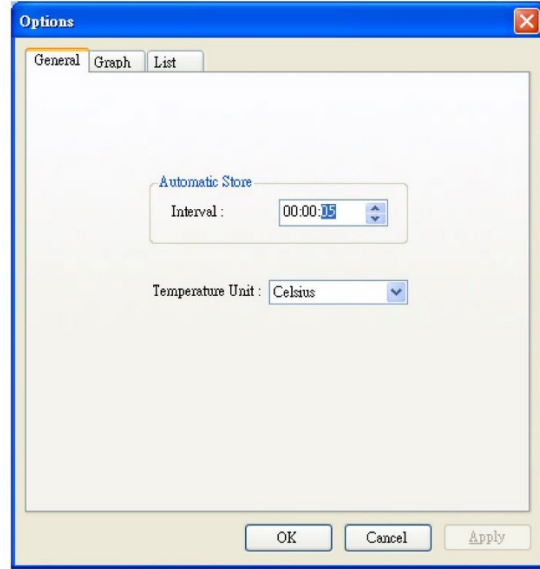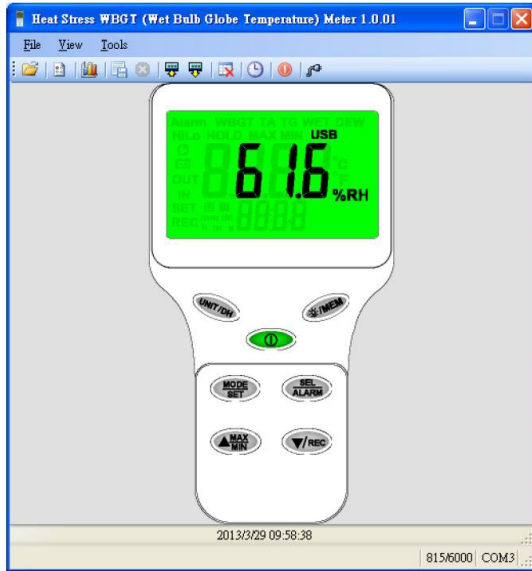
Specifications

Wet bulb globe temperature (WBGT)	
Indoor & Outdoor without sunlight:	WBGT = (0.7×WET) + (0.3×TG)
Range:	0~59.0℃ / 32.0~ 138.0℉
Resolution:	0.1℃ / 0.1℉
Accuracy @15~50℃:	±1.0℃ / ±1.8℉
Outdoor with sunlight:	WBGT = (0.7×WET) + (0.2×TG) + (0.1×TA)
Range:	0~56.0℃ / 32.0~ 132.0℉
Resolution:	0.1℃ / 0.1℉
Accuracy @15~40℃:	±1.5℃ / ±2.7℉
Air temperature (TA)	
Range:	0~50.0℃ / 32.0~122.0℉
Resolution:	0.1℃ / 0.1℉
Accuracy @15~50℃:	±0.8℃ / ±1.5℉
Black globe temperature (TG)	
Range:	0~80.0℃ / 32.0~176.0℉
Resolution:	0.1℃ / 0.1℉
Accuracy @15~60℃:	±0.6℃ / ±1.1℉
Relative Humidity (%RH)	
Range:	1%~99%
Resolution:	0.1%
Accuracy:	±3.0%RH (20~80%) / ±5.0%RH (80%)
Dew point temperature (DEW)	
Range:	-35.3~48.9℃ / -31.5~120.1℉
Resolution:	0.1℃ / 0.1℉
The value is calculated from the RH and Air Temperature.	
Wet bulb temperature (WET)	
Range:	-21.6~50.0℃ / -6.9~122.0℉
Resolution:	0.1℃ / 0.1℉
ccuracy @15~50℃:	±0.8℃ / ±1.5℉ (based on TA)
The value is calculated from the RH and Air Temperature.	

Dimension	300 x 70 x 50mm (L x W x H)
Weight	220g. (Without batteries).
Power supply	9V battery or AC100~240V DC 9V/ 0.5A(9mm).
Battery life	200 hours.
Operating temperature & Humidity	0°C to +50°C.
Storage temperature & Humidity	-10°C to +50°C.
Data output	USB PC serial interface,12000 records.
LCD	52mm(W)x36mm(L) monochrome LCD and backlight.

Package includes

1 x TM-188D meter
1 x 9V battery
1 x User's manual
1 x Hard Carrying case
1 x USB cable (1m)
1 x US plug Power Adapter, AC100~240V to DC9V/0.5A
Software download from www.testmeter.sg

*...	Date/Time	WBGT In	WBGT Out	TA	TG	WET	DEW	Humidity	
1	2013/3/8 15:12:05	21.8 ℃	21.5 ℃	27.6 ℃	30.5 ℃	18.0 ℃	9.8 ℃	32.8 %	
2	2013/3/8 15:12:17	21.9 ℃	21.5 ℃	27.4 ℃	31.1 ℃	17.9 ℃	9.5 ℃	32.6 %	
3	2013/3/8 15:12:29	22.2 ℃	21.8 ℃	27.8 ℃	31.9 ℃	18.1 ℃	9.5 ℃	31.9 %	
4	2013/3/8 15:12:39	22.5 ℃	22.1 ℃	28.1 ℃	32.7 ℃	18.2 ℃	9.6 ℃	31.4 %	
5	2013/3/8 15:12:49	22.9 ℃	22.4 ℃	28.4 ℃	33.4 ℃	18.4 ℃	9.7 ℃	31.2 %	
6	2013/3/8 15:12:59	22.9 ℃	22.4 ℃	28.3 ℃	33.9 ℃	18.2 ℃	9.3 ℃	30.5 %	
7	2013/3/8 15:13:08	23.2 ℃	22.7 ℃	28.5 ℃	34.3 ℃	18.5 ℃	9.9 ℃	31.4 %	
8	2013/3/8 15:13:20	23.4 ℃	22.8 ℃	28.7 ℃	34.9 ℃	18.5 ℃	9.5 ℃	30.1 %	
9	2013/3/8 15:13:30	23.5 ℃	22.8 ℃	28.6 ℃	35.4 ℃	18.4 ℃	9.3 ℃	29.9 %	
10	2013/3/8 15:13:40	23.7 ℃	23.0 ℃	28.8 ℃	35.8 ℃	18.5 ℃	9.4 ℃	29.9 %	
11	2013/3/8 15:13:50	23.9 ℃	23.2 ℃	29.0 ℃	36.3 ℃	18.6 ℃	9.4 ℃	29.4 %	
12	2013/3/8 15:13:59	24.0 ℃	23.3 ℃	29.0 ℃	36.7 ℃	18.6 ℃	9.4 ℃	29.5 %	
13	2013/3/8 15:14:11	24.3 ℃	23.5 ℃	29.4 ℃	37.2 ℃	18.8 ℃	9.5 ℃	29.0 %	
14	2013/3/8 15:14:21	24.5 ℃	23.7 ℃	29.6 ℃	37.5 ℃	18.9 ℃	9.4 ℃	28.5 %	
15	2013/3/8 15:14:31	24.6 ℃	23.8 ℃	29.8 ℃	37.8 ℃	19.0 ℃	9.6 ℃	28.5 %	
16	2013/3/8 15:14:40	24.8 ℃	24.0 ℃	30.0 ℃	38.1 ℃	19.1 ℃	9.7 ℃	28.3 %	
17	2013/3/8 15:14:52	24.8 ℃	24.0 ℃	29.8 ℃	38.2 ℃	19.1 ℃	9.8 ℃	28.9 %	
18	2013/3/8 15:15:02	24.6 ℃	23.7 ℃	29.3 ℃	38.2 ℃	18.8 ℃	9.6 ℃	29.3 %	
19	2013/3/8 15:15:12	24.4 ℃	23.5 ℃	28.9 ℃	38.1 ℃	18.6 ℃	9.6 ℃	30.0 %	
20	2013/3/8 15:15:22	24.4 ℃	23.4 ℃	28.6 ℃	38.0 ℃	18.5 ℃	9.8 ℃	30.9 %	
21	2013/3/8 15:15:31	24.0 ℃	23.1 ℃	28.0 ℃	37.7 ℃	18.2 ℃	9.7 ℃	31.8 %	
22	2013/3/8 15:15:43	24.0 ℃	23.0 ℃	27.9 ℃	37.4 ℃	18.2 ℃	9.7 ℃	32.1 %	