

SPECIFICATIONS

Range:	-7 to 230°F / -22 to 110°C
Resolution:	0.1°
Accuracy:	± 1°C between 15.0 to 40.0°C and ± 1.5°C outside of this range
Emissivity:	0.95 (adjustable)
Sampling Rate:	1 second
Measurement	
Distance:	0 to 10 inches (0 to 25 cm)
Features:	Fast reading, field view 1:1, auto power off, minimum/maximum
Size/Weight:	2½ x 1½ x ½ in. / 1 oz (18 x 37 x 68 mm / 32 g)
Attachments:	Key chain and stand
Battery:	3-Volt Lithium

CONTROLS AND INDICATORS

1. **MEASUREMENT Button** - (large button) Turns unit on, displays temperature, and changes display from °C (Celsius) to °F (Fahrenheit).
2. **MODE Button** - Changes mode to minimum or maximum or lock.

OPERATION

Measurement

Press the MEASUREMENT button twice to capture and display a single temperature reading. The temperature will be displayed for approximately 15 seconds and the unit will turn off. Press and continuously hold down the MEASUREMENT button to continuously take temperatures. See the Lock Mode instructions for continuous measurements without holding down the button.

°C/°F CONVERSION

To change from °C to °F or °F to °C turn the unit on by pressing the MEASUREMENT button once, then press the MODE button four times. The °C or °F symbol will flash on the display, press the MEASUREMENT button to change the symbol, press the MEASUREMENT button again to confirm the symbol change.

MINIMUM OR MAXIMUM MODE

Use this mode for targets that are continuously changing temperatures and you wish to capture *only* the lowest temperature achieved or *only* the highest temperature achieved. The unit will not simultaneously display minimum and maximum, one or the other must be selected. Turn the unit on by pressing the MEASUREMENT button once, then press the MODE button once for minimum *only* readings or twice for maximum *only* readings. The MIN or MAX symbol will flash on the display, then press and continuously hold down the MEASUREMENT button to continuously take temperatures. The unit will display the minimum temperature achieved or the maximum temperature achieved during the time the button is held down.

LOCK MODE

The lock mode permits continuous monitoring of temperatures without continuously holding the MEASUREMENT button down. Turn the unit on by pressing the

MEASUREMENT button, then press the MODE button three times. The LOCK symbol will flash, then press the MEASUREMENT button to confirm the lock measurement mode. The unit will continuously display temperatures for up to 60 minutes or until the MEASUREMENT button is pressed.

EMISSIVITY

Emissivity adjustment is optional. Emissivity adjustments are used to provide a truer temperature reading. Different materials radiate infrared energy at slightly different temperatures. The emissivity adjustment is used to compensate for different types of materials. The default emissivity of 0.95 will cover 90% of typical applications.

The emissivity table provides a guide of different emissivity values for different materials. (see chart on other side)

When the emissivity of an object is unknown use a non-infrared thermometer, such as a thermometer with a surface probe to measure the object's surface temperature. Adjust the emissivity until the temperature of the Infrared Thermometer matches the temperature of the surface probe. The emissivity value arrived at by this method may be used to measure similar materials.

To adjust the emissivity (optional):

1. Press and release the MEAS. button to turn on the display.
2. Press MODE button until (E95 {or whatever emissivity value has been set} will appear on the display).
3. To adjust the emissivity value, press MEAS. button to advance the value. Once the maximum value of 100 is reached, the display will roll over to the minimum value of 5.
4. Once desired emissivity value appears on display, press the MODE button to confirm the value.

The emissivity can be set from 0.05 to 1.00 (5 to 100 on the display)

This emissivity value will be used for all temperature measurements until the value is re-set.

MEASUREMENT DISTANCE

To take a temperature, point the unit at the surface to be measured and press the MEASUREMENT button. The unit should be positioned as close to the target as possible. Distance from an object can affect accuracy. The target must completely fill the spot diameter seen by the infrared sensor; otherwise, the reading will be influenced by the surface temperatures surrounding the target. The ratio of distance to the size of the spot being measured is 1:1. For example: an object 15 cm away has an infrared measurement spot diameter of 15 cm, and object 25 cm away has an infrared measurement spot diameter of 25 cm. For best accuracy, measure as close to the target object as possible.

STAND/KEY CHAIN

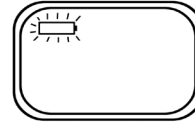
Use the flip-open stand on the back of the unit on a bench or desk.. Use the key chain to fasten the unit to a button hole or loop.



Battery Indicator Display
'Battery OK': measurements are possible.



'Battery Low': battery needs to be replaced, measurements are possible.



'Battery Exhausted': measurements are not possible.

ERROR MESSAGE DISPLAY

'Hi' or 'Lo' is displayed when the temperature being measured is outside of the range of the unit, 'Hi' when higher than 110°C and 'Lo' when lower than -22°C.



'Er2' is displayed when the unit is exposed to rapid changes in the ambient temperature. 'Er3' is displayed when the ambient temperature of this unit exceeds -10 to 50°C. In both cases allow plenty of time (minimum 30 minutes) for this device to stabilize to the working/ room temperature (0 to 40°C).



'Er' for all other error messages it is necessary to reset this unit. To reset, turn off the unit, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on (see battery replacement instructions).



ALL OPERATIONAL DIFFICULTIES

If this unit does not function properly for any reason, replace the battery with a new high quality battery (see "Battery Replacement" section). Low battery power can occasionally cause any number of "apparent" operational difficulties. Replacing the battery with a new fresh battery will solve most difficulties.

BATTERY REPLACEMENT

Erratic readings, a faint display, no display or a flashing display are all indicators that the battery must be replaced. Make certain the unit is off before replacing the battery. Turn the battery compartment panel on the back of the unit in the direction the arrow. Replace the exhausted battery with a new 3-volt lithium battery. Note that the lip of the battery must be placed under the upper metal contact. Turn the panel back into place. Replacement battery Cat. No. 1005.

EMISSIVITY CHART

METALS (Typical Emissivity Values)		NON-METALS (Typical Emissivity Values)	
SURFACE	EMISSIVITY	SURFACE	EMISSIVITY
Iron and Steel		Refractory & Building Materials	
Cast iron (polished)	0.2	Red brick (rough)	0.75 to 0.9
Cast iron (tumed at 100°C)	0.45	Fire clay	0.75
Cast iron (tumed at 1000°C)	0.6 to 0.7	Asbestos	0.95
Steel (ground sheet)	0.6	Concrete	0.7
Mild steel	0.3 to 0.5	Marble	0.9
Steel plate (oxidized)	0.9	Carborundum	0.85
Iron plate (rusted)	0.7 to 0.85	Plaster	0.9
Cast iron (rough) rusted	0.95	Alumina (fine grain)	0.25
Rough ingot iron	0.9	Alumina (coarse grain)	0.45
Molten cast iron	0.3	Silica (fine grain)	0.4
Molten mild steel	0.3 to 0.4	Silica (coarse grain)	0.55
Stainless steel (polished)	0.1	Zirconium silicate up to 500°C	0.85
Stainless steel (various)	0.2 to 0.6	Zirconium silicate at 850°C	0.6
Aluminum		Quartz (rough)	0.9
Polished aluminum	0.1*	Carbon (graphite)	0.75
Aluminum (heavily oxidized)	0.25	Carbon (soot)	0.95
Aluminum oxide at 260°C	0.6	Timber (various)	0.8 to 0.9
Aluminum oxide at 800°C	0.3	Miscellaneous	
Aluminum Alloys, various	0.1 to 0.25	Enamel (any color)	0.9
Brass		Oil paint (any color)	0.95
Brass (polished)	0.1*	Lacquer	0.9
Brass (roughened surface)	0.2	Matte black paint	0.95 to 0.98
Brass (oxide)	0.6	Aluminum lacquer	0.5
Copper		Water	0.98
Copper (polished)	0.05*	Rubber (smooth)	0.9
Copper (oxide)	0.8	Rubber (rough)	0.98
Molten copper	0.15	Plastics (various, solid)	0.8 to 0.95
Lead		Plastic films (0.05 mm thick)	0.5 to 0.95
Lead (polished)	0.1*	Polythene film (0.03 mm thick)	0.2 to 0.3
Lead (oxide at 25°C)	0.3	Rubber (smooth)	0.9
Lead (oxide)	0.6	Rubber (rough)	0.98
Nickel and Its Alloys		Plastics (various, solid)	0.8 to 0.95
Nickel (pure)	0.1*	Plastic films (0.05 mm thick)	0.5 to 0.95
Nickel plate (oxide)	0.4 to 0.5	Polythene film (0.03 mm thick)	0.2 to 0.3
Nichrome	0.7	Paper and cardboard	0.9
Nichrome (oxide)	0.95	Silicone polish	0.7
Zinc (oxidized)	0.1*	*Emissivity varies with purity	
Galvanized iron	0.3		
Tin-plated steel	0.1*		
Gold (polished)	0.1*		
Silver (polished)	0.1*		
Chromium (polished)	0.1*		

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

TRACEABLE® PRODUCTS

12554 Old Galveston Rd. Suite B230
 Webster, Texas 77598 USA
 Ph. 281 482-1714 • Fax 281 482-9448
 E-mail support@traceable.com
 www.traceable.com

Traceable® Products is ISO 9001:2018 Quality-Certified by DNV and ISO/IEC 17025:2017 accredited as a Calibration Laboratory by A2LA.

**MiniIR
 TRACEABLE®
 THERMOMETER
 INSTRUCTIONS**

Note: Traceable Infrared thermometers, are NOT approved for Medical usage, and are not FDA approved.



Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001



Cert. No.: 4040-1209600C

Traceable® Certificate of Calibration for Therm./Clock/Humidity Monitor

Manufactured for and distributed by : Traceable® Products 12554 Galveston Rd B230, Webster, TX 77598

Instrument Identification:

Model: 4040,90080-06

S/N: 210248494

Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Non-Contact Frequency Counter	26.662025	21 Apr 2021	1000453894
Digital Thermometer	221197993	14 Oct 2021	4000-11621504
Chilled Mirror Hygrometer	44654/2H3737	25 Nov 2021	17811

Certificate Information:

Technician: 126

Procedure: CAL-17

Cal Date: 27 Mar 2021

Cal Due Date: 27 Mar 2023

Test Conditions: 57.75%RH 22.6°C 1012mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
%RH	N.A.	N.A.		41.63	41	Y	37	47	0.74	>4:1
°C	N.A.	N.A.		23.25	22.7	Y	22.2	24.2	0.076	>4:1
sec/24hr	N.A.	N.A.		0.000	0.133	Y	-8.64	8.64	0.041	>4:1

This certificate indicates Traceability to standards provided by (NIST) National Institute of Standards and Technology and/or a National Standards Laboratory.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement : (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ± U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2, Min=As Left Nominal(Rounded) - Tolerance; Max= As Left Nominal(Rounded) + Tolerance;

Nicol Rodriguez, Quality Manager

Marisa Elms, Technical Manager

Note :

Maintaining Accuracy:

In our opinion once calibrated your Therm./Clock/Humidity Monitor should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Therm./Clock/Humidity Monitor change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

Issue Date : 27 Mar 2021

CONTROL COMPANY 12554 Galveston RD Suite B230 Webster TX USA 77598
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Control Company is an ISO/IEC 17025:2017 Calibration Laboratory Accredited by (A2LA) American Association for Laboratory Accreditation, Certificate No. 1750.01.
Control Company is ISO 9001:2015 Quality Certified by DNV GL, Certificate No. CERT-01805-2006-AQ-HOU-ANAB.
International Laboratory Accreditation Cooperation - Multilateral Recognition Arrangement (ILAC-MRA).