IRT2DP
Dual Laser IR Thermometer and Dew Point Detector

USER GUIDE

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ABQINDUSTRIAL
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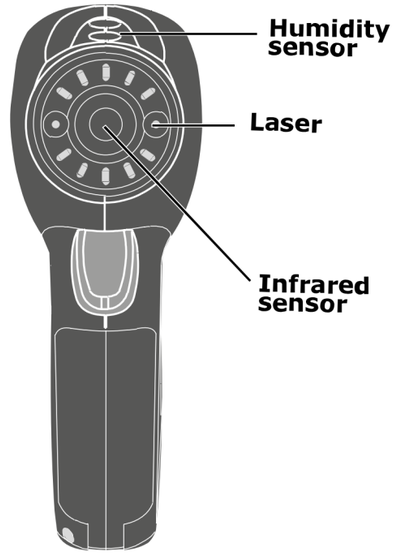
INTRODUCTION

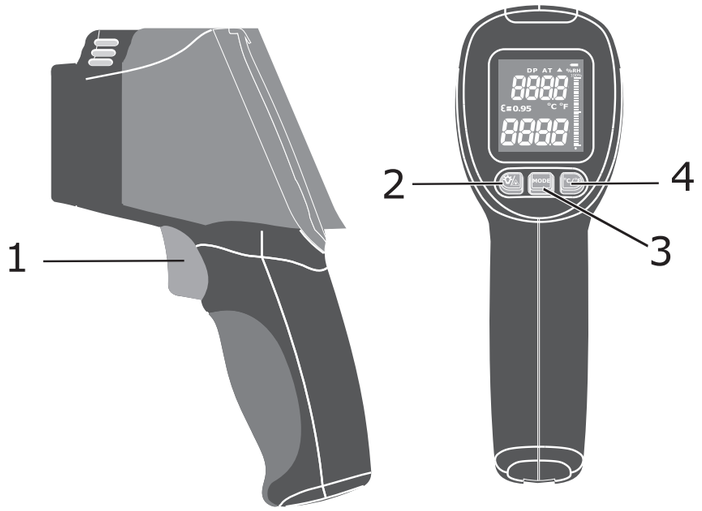
The IRT2DP is a handheld dual laser, non-contact Infrared Thermometer and Dew Point detector with 20:1 distance to spot ratio, tricolor light (and audible) indication as reading goes close to dew point temperature. It is used to measure surface temperature along with relative humidity, dew point temperature and ambient temperature.
The temperature range is -50°C to 380°C (-58ºF to 716ºF) and has an accuracy of approximately 1 to 1.5%. The humidity range is from 0 – 100% RH. The dew point temperature range is -30º to 100ºC (-22º to 212ºF) (see Specifications for details). The IRT2DP has a fast response time (0.15 sec) and is powered with a 9V battery and complies with Class II UK/EU laser safety standard EN60285.

KEY FEATURES

- Rapid detection function
- Precise non-contact measurements
- Dual laser targeting
- 3 Mode display - Relative Humidity / Dew Point Temperature / Ambient Temperature
- Green - Yellow – Red LED light and audible signal indicate proximity to Dew Point Temperature
- Automatic Data Hold
- User selectable ºC or ºF
- Pre-set Emissivity of 0.95
- Backlight LCD display
- Unique flat surface, modern housing design

OPERATING INSTRUCTIONS





1. Switch Button – automatically switch off at about 15 minutes
2. Backlight/ Laser Button
3. Mode Button - Surface temperature with RH, Dew Point or Ambient Temperature.
4. ºC/ºF & Audio On/Off Button

ON / OFF

- Press the measurement trigger once to turn ON.
- Press the measurement trigger again to turn OFF

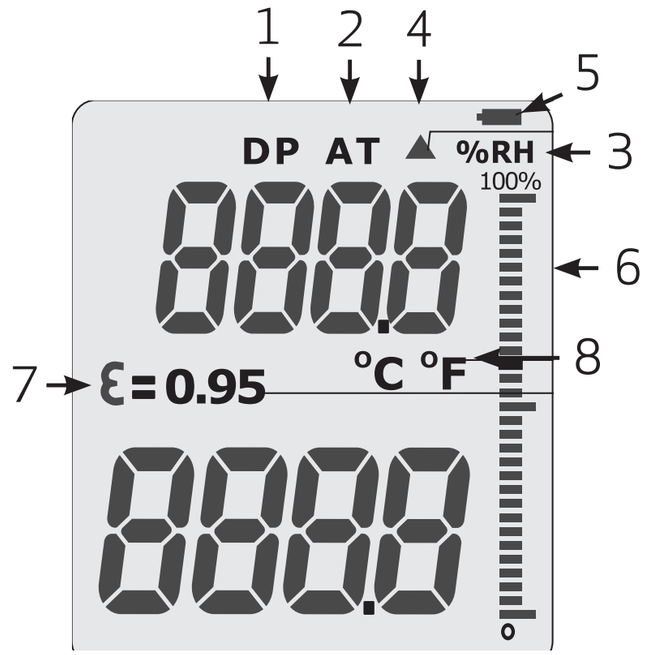
SWITCHING ºC/ºF

- Select the temperature units (ºC or ºF) pressing once the ºC/ºF button.

AUDIO SIGNAL ON/OFF

- Press the ºC/ºF button for 3 seconds to turn On or Off the audio signal.

FRONT PANEL INDICATORS



1. DP: Dew Point
2. AT: Ambient Temperature
3. RH: Relative Humidity
4. Laser ON symbols
5. Low Battery Indication
6. %RH Indicator bar / Proximity to dew point indicator bar
7. Emissivity symbol and value
8. ºC/ºF symbol

LASER BEAM / BACKLIGHT Button

The dual laser beam and screen backlight will remain ON / OFF as selected in the last time used.

Scroll through the options by pressing the laser beam / backlight button:

- laser beam OFF / backlight OFF
- laser beam ON / backlight OFF
- laser beam ON / backlight ON
- laser beam OFF / backlight ON

MODE

After switch on, the instrument will be in the same mode as the last time used. It will detect and display the surface temperature, with either

- dew point temperature (DP),
- ambient temperature (AT) or
- relative humidity (RH),

as chosen using the MODE button.

Press the MODE button to scroll between the display of

- ambient temperature,
- dew point temperature and
- relative humidity.

The mode and their values are displayed on the top of the LCD screen.

MEASUREMENT OPERATION - GENERAL

Aim the instrument at the object being measured, moving the detector slowly. The surface temperature of the object is displayed at the bottom of the LCD screen.

If the measured surface temperature value is between the ambient temperature and dew point temperature values, the IRT2DP will calculate the D-value / Delta-value with the ambient temperature.

Green Light

If the measured surface temperature is within 1/3 range of ambient temperature to dew point temperature, the green light indicates that the temperature and humidity are normal.

Yellow Light

If the measured surface temperature is within the 2/3 range of ambient temperature to dew point temperature, the yellow light and intermittent audio signal indicate surface temperature is approaching dew point and that the conditions may produce surface condensation or may be conducive to mildew growth.

Red Light

If the measured surface temperature exceeds the 2/3 range of ambient temperature to dew point temperature, the red light and continuous audio signal indicate surface temperature is close to or has reached dew point and that the conditions are likely to or already have produced condensation or that there may already be mildew growth.

For example:
If the measured environment temperature is 25°C, relative humidity is 50%, dew point is 13.8°C, then:

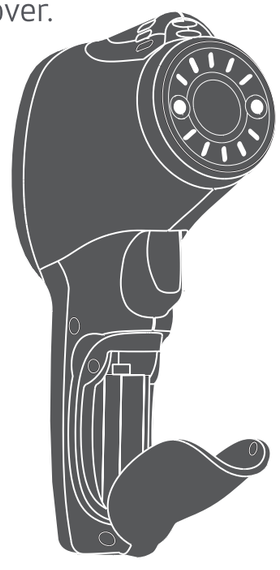
Green light: when the measured surface temperature is between 77°F (25°C) - 70.3°F (21.3°C);
Yellow light: when the measured surface temperature is between 70.2°F (21.2°C) - 63.5°F (17.5°C);
Red light: when the measured surface temperature is between 63.4°F (17.4°C) - 56.8°F (13.8°C).

NOTE - CONCRETE MOISTURE AND DEW POINT

It is recommended that the temperature of the surface of the concrete should be at least 10°F (5°C) above the ambient dew point temperature at the time of installation so as to avoid condensation related issues.

BATTERY REPLACEMENT

- When battery power is not sufficient, LCD will display replacement with one new battery type 9V is required.
- Open battery cover, take the battery out of the instrument and replace with a new 9-Volt battery, then replace the battery cover.



MAINTENANCE

Clean the lens often, but never use a solvent. Abrupt temperature changes will cause condensation and possible vapor penetration.
Clean after the vapor evaporates. Blow off loose particles with clean, compressed air. Gently brush remaining debris away with a lens hair brush. Carefully wipe the surface with a moist cotton swab.
Avoid water, moisture and corrosive gas or liquids. The housing can be cleaned with a damp sponge.
Remove the battery when storing this product for an extended period of time.
Do not drop or disassemble the instrument or immerse it in water.
Repairs or service are not covered in this manual and should only be carried out by qualified trained technician. For service, use only manufacturer's specified parts.

SAFETY INSTRUCTIONS

- Keep this instrument out of the reach of children.
- Do not point laser near or into eyes.
- Do not stare at the laser beam through binoculars or a magnifying glass!
- Do not operate this instrument in the presence of flammable/explosive gases!
- Do not operate in environments full of dust or static electricity.
- Do not operate near sources of strong electromagnetic fields, such as arc welders or induction heaters.

Finally, be aware that it is an offence to point a laser beam at aircraft.

SPECIFICATIONS

Temperature Range:	50°C to 380°C (-58°F to 716°F)
Display resolution:	0.1
Emissivity:	Fixed at 0.95
Temperature accuracy:	-50° to 20°C / -58° to 32°F: +/- 3.5°C 20° to 380 °C / 32° to 716°F: +/-1.5°C
Wavelength range:	8 – 14um
Humidity Range:	0 - 100% RH
Humidity accuracy:	+/-3.5% (20% to 80%)
Dew point temperature:	(-30 to 100)°C / (-22 to 212)°F
D:S:	20:1
Operating temp:	0 to 50°C (32 to 122°F)
Storage temp:	-10 to 60°C (-4 to 140°F)
Relative humidity:	10%-90%RH operating, <80%RH storage
Power Supply:	9V battery, NEDA 1604A or IEC 6LR61, or equivalent