Model FST-300 Food Service Infrared Thermometer
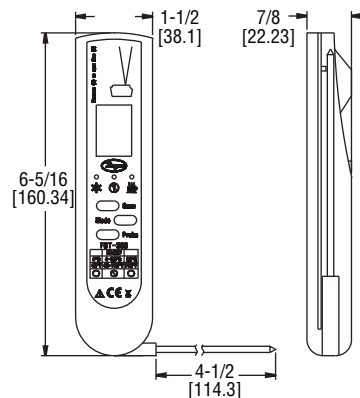
Specifications - Installation and Operating Instructions

The **Model FST-300 Infrared Thermometer** is designed to monitor temperatures in the food service industry. The thermometer has both an infrared sensor and an immersion probe to safely monitor surface and product temperatures. The quick HACCP zone display gives visual indication when products are within a safe storage temperature range for both hot and cold food products. The Model FST-300 also has a built-in white light to illuminate the measurement area.

OPERATING INSTRUCTIONS

Infrared Measurements
Simply aim the thermometer at the target and press the "SCAN" key to display the surface temperature.

Probe Measurements
Simply insert the probe into the desired area and press the "PROBE" key to display the probe temperature on the bottom LCD display. The temperature will be measured for 4 minutes continuously. Pressing the "PROBE" key during measurements will hold the current reading.

Minimum or Maximum Reading
The thermometer will display the minimum or maximum reading for the period in which measurements were taken in the minimum or maximum mode.

For minimum measured temperature, press the "SCAN" button to turn on the unit. Press the "MODE" key once so that min is flashing at the top of the LCD display. Press and hold the "SCAN" key to take measurements. Only the minimum temperature measured will be displayed.

For maximum measured temperature, press the "SCAN" button to turn on the unit. Press the "MODE" key twice so that max is flashing at the top of the LCD display. Press and hold the "SCAN" key to take measurements. Only the maximum temperature measured will be displayed.

Continuous Monitoring
The lock mode is used for continuously monitoring temperatures for up to 60 minutes or until the "SCAN" key is pressed.

To enter the lock mode, press the "SCAN" key once to turn on the unit. Press the "MODE" key three times so that lock is flashing at the top of the LCD. Press the "SCAN" key once to start taking measurements.

Engineering Units
The thermometer can measure in °F or °C. To change the units, press the "SCAN" key once to turn on the unit. Press the "MODE" key four times until the unit descriptor is flashing. Press the "SCAN" key once to change the units.

SPECIFICATIONS

Range: Infrared Sensor: -67 to 482°F (-55 to 250°C); Probe Sensor: -67 to 626°F (-55 to 330°C).

Ambient Operating Temperature: 32 to 122°F (0 to 50°C).

Accuracy: ±1.1°F (0.5°C).

Resolution: 0.5°F (0.2°C).

Distance to Spot: 2.5:1 optics ratio.

Emissivity Range: 0.95 Default – adjustable 0.1 to 1.0.

Battery Life: 18 hours continuous use (auto power off after 15 seconds).

Weight: 3.5 oz (98.1 g).

Agency Approvals: CE.

Emissivity
The emissivity is preset at the factory at 0.95. It can be adjusted from 0.10 to 1.00 (display reading 10E to 100E). Changes should only be carried out by experienced personnel.

To change the emissivity, press the "SCAN" key to turn on the unit. Press the "MODE" key five times until the top display changes to read the emissivity. Press the "SCAN" key to adjust the emissivity in 0.01 (1E) increments. Press the "MODE" key to accept the new emissivity reading.

Hazard Analysis and Critical Control Point Zone Display (HACCP)

	HACCP	
4°C	4-60°C	60°C
40°F	40-140°F	140°F
❄	🚫	☕

The HAACP zone display is present to give a quick reference as to whether the measured temperatures are in the safe zone for hot or cold products. The Green LED with the " ❄ " icon represents a safe condition for refrigerated products below 40°F (4°C). The Green LED with the " ☕ " icon represents a safe condition for hot foods above 140°F (60°C). The Red LED with the " 🚫 " icon represents unsafe food conditions between 40 to 140°F (4 to 60°C).

LCD Error Messages

The thermometer incorporates visual diagnostic messages as follows.

H Lo: H or Lo is displayed when the temperature being measured is outside of the settings of HAL and LAL.

$Er2$: Displays when the thermometer is exposed to rapid changes in the ambient temperature.

$Er3$: Displays when the ambient temperature exceeds 32°F (0°C) or 122°F (50°C). The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.

For all other error messages it is necessary to reset the thermometer. To reset it, wait for the instrument to turn off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn it on. If the error message remains please contact the Dwyer Customer Service department for further assistance.

Batteries

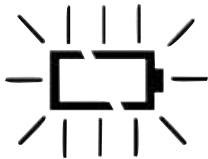The thermometer incorporates visual low battery indication as follows.

Battery OK: Measurements are possible.

Battery Low: Battery needs to be replaced, measurements are still possible.
Battery Exhausted: measurements are not possible.

When the low battery icon indicates the battery is low, the batteries should be replaced immediately with AAA, 1.5V batteries using the following steps.

Replacing Batteries

Probe
Infrared Lens
White Light
Rubber Screw Cover
(Screw's location)
Battery Cover
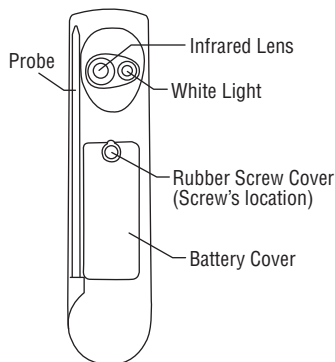
1. Remove the rubber screw cover and screw from the battery cover.
2. Lift the battery cover to access batteries.
3. Replace batteries observing polarity marked on unit.
4. Close the battery cover.
5. Replace screw and rubber screw cover.

NOTICE

It is important to turn the thermometer off before replacing the battery otherwise the thermometer may malfunction. Dispose of used battery promptly and keep away from children.

1. When device is in use, do not look directly into the laser beam - Permanent eye damage may result.
2. Use extreme caution when operating the laser.
3. Never point the device towards anyone's eyes.
4. Keep out of reach of all children.

NOTICE

The readings may be affected if the unit is operated within radio frequency electromagnetic field strengths of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

1. Do not twist / rotate the probe in the wrong direction.
2. Excess stress may cause the probe to break.
3. Following a high temperature measurement, the probe may be hot.
4. The probe may cause harm / injury when open. Keep probe back when not in use.
5. To prevent damage to the probe, do not exceed the measurement temperature range.
6. To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24V AC or DC.

Storage and Cleaning

The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol. Allowing the lens to fully dry before using the thermometer. Do not submerge any part of the thermometer. The thermometer should be stored at room temperature between -4 and 149°F (-20 to 65°C).

MAINTENANCE

A periodic check of the system calibration is recommended. The Model FST-300 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.