# TPI Food Safety Catalog

*Instruments designed to help you meet*

## Hazard Analysis and Critical Control Point Principles

HACCP

*TPI instruments can help.*

• Conduct a hazard analysis • Determine the critical  control points
• Establish critical limits • Establish monitoring procedures
• Establish corrective actions • Establish verification procedures
• Establish record-keeping and  documentation procedures

## WHY USE A DIGITAL THERMOMETER?

• With health and safety a priority in food handling, preparation and storage, it is vital  to use the most accurate methods available to confirm food temperatures.

• Because of this the FDA Food Code recommends an electronic digital  thermometer with either  a thermocouple or thermistor sens or rather than a bimetal thermometer for fast and accurate temperature measurement.  With the sensor located in the tip of a thermistor or thermocouple probe, you can more accurately measure temperatures in thin filets of fish and poultry, and also hamburger patties.

• In addition to higher accuracy, digital are more likely to maintain calibration than bimetals.

# Hand-Held Digital Thermometer

## Affordable. Dependable. Easy to Use.

Verify calibration with our special 351 test caps. Surface, liquid, or air thermistor probes can be used with the 351 to measure temperature between -40° and 220°F.

### TPI 351
- **Single button operation**
- **Accuracy** with Thermistor is ±1° F (32° to 158°)
- **Verify Calibration** Optional test caps available
- **Water Resistant** Measurements can be taken in any environment
- **Automatic Power Off** 3-minute shut down with inactivity
- **Open Probe Indicator** "Open" is displayed when probe is open or not attached.

### SPECIFICATIONS

| | |
|---|---|
| IP Rating | IP63 |
| Thermistor Probe Range | -40° to 220°F |
| Centigrade Version | Model 351X |

### TPI 351F1 Kit
**Get the whole works!**
The 351F1 Kit comes complete with instrument, A304 protective rubber boot and an FX12B, liquid immersion probe.

### A304
**Protective Tilt Boot**
Enjoy upright viewing. Built-in stand also frees the hand. Store your instrument face down inside boot to protect the screen. The A304 comes standard on the 340, 341, and 358 temperature testers

### 351 Thermistor Probes with Bipolar Connector
Surface Probe ...............................................CX13B
Liquid Immersion Probe ..............................FX12B
Liquid Immersion Probe w/8" stem...............FX13B
Air Probe ......................................................GX15B
3-Foot Extension lead ..................................EX11B

### Bi-Pole Thermistor Test Cap
VX11B...................-18°C or -0.4F
VX12B...................0°C or 32°F
VX13B...................70°C or 158°F

### 340
one or single button operation

### 341K AUTO FIELD CALIBRATION

Perform ice bath calibration to achieve ±1°F system accuracy within the 30°F to 120°F temperature range. Calibration is easy two-step process performed with keypad, no additional tools needed.

**How do I field calibrate the 341K digital thermometer?**
1. Connect the temperature probe to the 341K.
2. Press and hold down the **MIN/MAX** and **HOLD** buttons and turn on the 341K.
3. Insert the temperature probe into an ice bath and allow the reading to stabilize.
4. Press the **HOLD** button and calibration is complete.

**What is the difference between a thermistor and a thermocouple?**
Thermistors are more accurate, but have a much shorter temperature range than thermocouples.

**What are the advantages of Sub-Mini connectors?**
Sub-mini connectors are quick and easy to use, simply push in and pull out. A wide variety of economical probes are available with sub-mini connectors, enhancing the versatility and affordability of the temperature tester.

**What can test caps be used for?**
Test caps provide accuracy confirmation of your TPI thermistor input thermometer

| Features | 340 | 341K |
|---|---|---|
| Water Resistant | YES | YES |
| Min/Max Record | NA | YES |
| Selectable Res. | NA | YES |
| C°/F° Selectable | YES | YES |
| Auto Off | YES (after 20 min) | YES (after 20 min) |
| Connector Type | Sub Mini | Sub Mini |
| Range K-Type | -58° to 1832°F | -58° to 2462°F |
| | -50° to 1036°C | -50° to 1350°C |
| Basic Accuracy* | ±0.5% + ±1.8°F | ±0.3%, ±1.8°F |
| IP Rating | IP63 | IP63 |
| Size | 41mm x 152mm | 41mm x 152mm |
| | x 77mm | x 77mm |
| Weight | 278g w/boot | 278g w/boot |
| Battery | 1.5V (2) | 9V |
| *Accuracy will depend on selection of probe. | | |

*the 340 and 341K digital thermometers come with A304 tilt stand protective boot and no probes*

# Pocket Digital Thermometers

## *All "C" version digidials can be auto field calibrated in 32º F ice water to ± 2º F*

**Models 306C, 307C**

**Models 316C, 318, 319**

**A306**
Protective Rubber Boot for the 306C, 306CX, 307C, and 307CX. .

**Models 312C,314C, 323, 326, 329C, 330**

| **Probe Tips** | **Penetration** | **Chisel** | **Contact** | **Needle** |
|---|---|---|---|---|
| | Use for immersion and air; however air response time will be slower than if using an actual air probe. | Need chisel tip for surface temperatures. Penetration and/or air tips will not give an accurate surface reading. | Measures three times faster than chisel tip. | Use for immersion and semi-solids. Low mass, quick response, small diameter penetration |

# Pocket Digital Thermometers
## Features and Specifications

| FEATURES | 306C* | 307C* | 312C | 314C | 316C |
|---|---|---|---|---|---|
| Water Resistant | • | • | • | • | |
| Water Proof | | | | • | • |
| Tip Type | penetration | needle | penetration | penetration | penetration |
| Stem Length | 4.9 | 4.9 | 4.9 | 4.9 | 2.8" |
| Data Hold | • | • | • | • | • |
| °C/°F Switchable | | | • | • | • |
| Range | | | | | |
| Min. Temp°F | -40°F | -40°F | -58°F | -58°F | -58°F |
| Min. Temp°C | | | -50°C | -50°C | -50°C |
| Max. Temp°F | 300°F | 300°F | 300°F | 300°F | 300°F |
| Max. Temp°C | | | 150°C | 150°C | 150°C |
| Accuracy | | | | | |
| °F | 1% | 1% | ±2°F | ±2°F | ±2°F |
| °C | | | ±1°C | ±1°C | ±1°C |
| Resolution | 0.1°C | 0.1°C | 0.1°C | 0.1°C | 0.1°C |
| IP Rating | NA | NA | IP63 | IP67 | IP63 |
| Auto Off | • | • | • | • | • |
| Sample Time | 1 sec | 1 sec | 1 sec | 1 sec | 1 sec |
| Battery | All TPI Digital Thermometers use an LR44 battery | | | | |

**°C versions also available 306CX and 307CX**

| FEATURES | 318 | 319 | 323 | 326 | 329C | 330 |
|---|---|---|---|---|---|---|
| Water Resistant | • | • | • | • | • | • |
| Water Proof | | | • | • | | • |
| Tip Type | chisel | contact | chisel | needle | contact | chisel |
| Stem Length | 2.8" | 2.8" | 4.9" | 4.9" | 4.9" | 4.9" |
| Data Hold | • | • | • | • | • | • |
| °C/°F Switchable | • | | | | | |
| Range | | | | | | |
| Min. Temp°F | -58°F | -58°F | -58°F | -58°F | -58°F | -58°F |
| Min. Temp°C | -50°C | -50°C | -50°C | -50°C | -50°C | -50°C |
| Max. Temp°F | 300°F | 300°F | 300°F | 300°F | 300°F | 550°F |
| Max. Temp°C | 150°C | 150°C | 150°C | 150°C | 150°C | 288°C |
| Accuracy | | | | | | |
| °F | ±2°F | ±2°F | ±2°F | ±2°F | ±2°F | ±2°F |
| °C | ±1°C | ±1°C | ±1°C | ±1°C | ±1°C | ±1°C |
| Resolution | 0.1°F/C | 0.1°F/C | 0.1°F/C | 0.1°F/C | 0.1°F/C | 0.1°F/C |
| IP Rating | IP63 | IP63 | IP63 | IP63 | IP63 | IP63 |
| Auto Off | • | • | • | • | • | • |
| Sample Time | 1 sec | 1 sec | 1 sec | 1 sec | 1 sec | 1 sec |
| Battery | All TPI Digital Pocket Thermometers use an LR44 battery | | | | | |

**How do I check calibration of my pocket thermometer?**
You put the thermometer in a solution of crushed ice and water, swirl the water around, and it should read close to 32°F.

**Does the whole stem need to be immersed to get an accurate reading?**
The sensor is in the tip of the probe and needs to be 1/2 inch into what you are measuring.

**How do I calibrate the "C" version digital thermometer?**
1. Insert the stainless steel shaft of the thermometer into an ice water bath and allow the reading to stabilize
2. Press and hold the D-H/Cal button for approximately 8 seconds until "CAL" is displayed. Calibration is complete.

## Contact/Surface Prrobe Applications

- Measure grill temperature to assure correct cooking temperatures.
- Check frozen food to assure proper storage temperatures.
- Measure temperatures between pack-age to to ensure proper quality control.
- Check any surface for correct process control temperatures.
- Measure superheats on condensers.
- Measure griddle tompeatures.
- Measure mackinery or mold tmperatures with a surface probe.
- Measure pipe temperatures in any industrial application.

## Penetration / Immersion Probe Applications

- Check internal food temperatures to assure quality control.
- Measure deep fat fryers with a high temp immersion probe.
- Measure liquids and semi-solid temperatures in food processing applications.
- Use a reduced tip probe for quicker response times where time is crucial to the process.

## Air Probe Applications

- Measure air temperatures in duct work.
- Measure air temperature coming from diffusers while Trouble-shooting heating and air conditioning systems.
- Measure flame temperatures to trouble-shoot industrial heating applications.
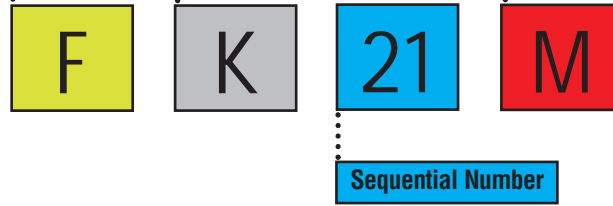- Calibrate thermostats using an ambient air probe.

## Probe Type

F: Penetration/immersion
C: Contact/Surface
G: Air

## Sensor Type

K: Type K-thermocouple
T: Type T-thermocouple
X: Thermistor (PST)

## Connector Type

M- Sub-miniature
L- Lumberg connector
B- Bipole

| F | K | 21 | M |

Sequential Number

## Probe Tips

### Penetration / Immersion

20 Pointed penetration
21 Tapered penetration
22 Chisel penetration

24 Rounded Immersion
26 Corkscrew penetration

28 Alligator Immersion

### Surface

30 Flat disk (Thermistor)
32 Ribbon

34 Between pack

36 Heavy duty spring

### Air

40 Air (Thermistor)
42 Beaded thermocouple

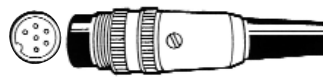44 Hooded
46 Caged

48 Caged with rack clip
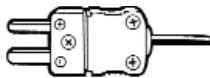
**Sub-Mini Connector**

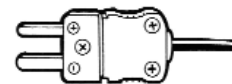**Lumberg Connector**

**Bipolar Connectors**

# K-Type Thermocouple with Sub-Mini Connector Probes

| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | Insulation Material |
|---|---|---|---|---|---|---|
| **CK11M** Contact surface probe with ribbon sensor Water proof | Surface Temperatures Grills | -58° to 500°F -50° to 250°C | | 32 | Stem Length: "(102mm) Diameter: .13" (3.2mm) Lead Length: 39.4" (1M) | Polyurethane |
| **CK18M** Wide contact surface probe | Restaurant Grills | -58° to 500°F -50° to 250°C | | 32 | Stem Length: NA Diameter: .39"(10mm) Lead Length: 39.4"(1M) | Polyurethane |
| **CK22M** 45° Contact surface probe with ribbon sensor | Surface Temperatures Grills | -58° to 500°F -50° to 250°C | | 32 | Stem Length: 4.5"(114mm) w/120° bend Diameter: .13"(3.2mm) Lead Length: 39.4"(1M) | Polyurethane |
| **FK11M** Chisel Probe Penetration Probe Waterproof | General Purpose Penetration | -58° to 500°F -50° to 250°C | | 22 | Stem Length: 4"(102mm) Diameter: .13"(3.2mm) Lead Length: 39.4"(1M) | Polyurethane |

## REFER TO THE TPI WEBSITE FOR ADDITIONAL OR OEM PROBE OPTIONS

# K-Type Thermocouple with Sub-Mini Connector Probes
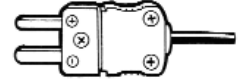
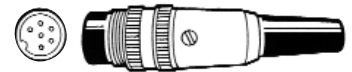| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | Insulation Material |
|---|---|---|---|---|---|---|
| **FK12M** Heavy duty Penetration Waterproof | Deep fat fryers and food processing | -58° to 500°F -50° to 250°C | | 21 | Stem Length:    11.8"(300mm) Diameter:    .25/.10"(6.4/2.5mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK15M** Tapered end for food penetration | Food Penetration | -58° to 500°F -50° to 250°C | | 20 | Stem Length:    3.15"(80mm) Diameter:    .06" (1.6mm) Lead Length:    47.2" (1.2M) | Teflon |
| **FK21M** Tapered end for food penetration Waterproof | Food Penetration | -58° to 500°F -50° to 250°C | | 21 | Stem Length:    3.75"(80mm) Diameter:  .13"/.06" (3.2/1.6mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK22M** Oven food probe | Food Processing Testing food temperatures during cooking | -58° to 500°F -50° to 250°C | | 20 | Stem Length:    3.9"(99.1mm) Diameter:    .12" (3mm) Lead Length:    2.5M | Teflon |
| **FK23M** Rack clamp probe | Dishwasher Tests | -40° to 510°F -40° to 265°C | | 28 | Stem Length:    NA Diameter:    NA Lead Length:    177.2" (4.5M) | Teflon |
| **FK24M** Penetration Probe Waterproof | Food Processing Grills | -40° to 510°F -40° to 265°C | | 21 | Stem Length:    24"(610mm) Diameter:    .38"(9.5mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK25M** Flat sensor pack probe | Between Pack | -40° to 400°F -40° to 204°C | | 34 | Stem Length:    11.8" (300mm) Diameter: .25/.10" (6.4mm-2.5mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK27M** Waterproof Penetration probe | Food processing | -58° to 500°F -50° to 250°C | | 21 | Stem Length:    11.8" (300mm) Diameter: .25/.10" (6.4mm-2.5mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK28M** Heavy duty penetration | General purpose Food processing | -58° to 500°F -50° to 250°C | | 20 | Stem Length:    6.3"(160mm) Diameter:    13" (3.2mm) Lead Leng | Polyurethane |
| **FK29M** Oven food probe | Testing food temperature during cooking | -58° to 500°F -50° to 250°C | | 20 | Stem Length:    11.8"(300mm) Diameter:    .13" (3.2mm) Lead Length:    39.4" (1M) | Polyurethane |
| **FK31M** Corkscrew Insertion Probe | Food processing | -58° to 500°F -50° to 250°C | | 26 | Stem Length:    4.5"(114mm) Diameter:    .20"(5mm) Lead Length:    39.4" (1M) | Polyurethane |
| **GK13M** Beaded probe w/ FDA approved insulation | General purpose Air | -40° to 400°F -40° to 204°C | | 42 | Stem Length:    NA Diameter:    NA Lead Length:    47.2" (1.2M) | Teflon |
| **GK18M** Armored probe | Special hanging clip for ovens. Air. | -40° to 950°F -40° to 510°C | | 48 | Stem Length:    NA Diameter:    NA Lead Length:    39.4" (1M) | SS* |
| **EXT31M** Male to Male Extension | | NA | | NA | Stem Length:    NA Diameter:    NA Lead Length:    39.4" (1M) | Polyurethane |

## REFER TO THE TPI WEBSITE FOR ADDITIONAL OR OEM PROBE OPTIONS

# K-Type Thermocouple with Lumberg Connector Probes

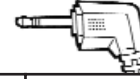| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | |
|---|---|---|---|---|---|---|
| **FK21L** Contact surface probe with ribbon sensor. Water proof | Food Penetration | -58° to 500°F -50° to 250°C | | 21 | Stem Length: 3.75" (95.3mm) Diameter: .13/.06" (3.2/1.6mm) Lead Length: 39.4" (1M) | Polyurethane |
| **FK22L** Oven food probe | Testing food temperatures during cooking | -50° to 500°F -50° to 250°C | | 20 | Stem Length: 3.9"(99mm) Diameter: .13" (3.2mm) Lead Length: 47.2" (1.2M) | Teflon |
| **FK23L** Immersion / Penetration probe no handle or lead | Food Penetration | -58° to 500°F -50° to 250°C | | 21 | Stem Length: 3.9"(100mm) Diameter: .15" (3.75mm) Lead Length: NA | NA |
| **FK25L** Flat sensor pack probe | Between pack | -40° to 400°F -40° to 204°C | IP67 | 34 | Stem Length: NA Diameter: .NA Lead Length: 47.2" (1.2M) | Teflon |

# T-Type Thermocouple with Lumberg Connector Probes

| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | Insulation Material |
|---|---|---|---|---|---|---|
| **FT11L** Surface probe with ribbon sensor | Surface Temperatures Grills | -148° to 500°F -100° to 250°C | | 32 | Stem Length: 4"(102mm) Diameter: .13" (3.2mm) Lead Length: 39.4" (1M) | PVC |
| **FT12L** Needle probe | Weiner probe for food processing | -148° to 500°F -100° to 250°C | | 20 | Stem Length: 3.15"(80mm) Diameter: .06"(1.6mm) Lead Length: 47.2" (1.2M) | Teflon |
| **FT15L** Needle probe | Weiner probe for food processing | -148° to 500°F -100° to 250°C | IP67 | 20 | Stem Length: 3.15"(80mm) Diameter: .06"(1.6mm) Lead Length: 47.2" (1.2M) | Teflon |
| **FT21L** Tapered end for food penetration Waterproof | Food penetration | -148° to 500°F -100° to 250°C | | 21 | Stem Length: 3.75"(95.3mm) Diameter: 3.2/1.6mm Lead Length: 2.5M | PVC |
| **FT22L** Oven food probe | Testing food temperature during cooking | -58° to 500°F -50° to 250°C | | 20 | Stem Length: 3.93"(99.1mm) Diameter: .13" (3.2mm) Lead Length: 98.4" (2.5M) | Teflon |
| **FT23L** Oven food probe | Testing food temperature during cooking | -58° to 500°F -50° to 250°C | | 28 | Stem Length: 3.93"(99.1mm) Diameter: NA Lead Length: 177.2" (4.5M) | Teflon |
| **FT24L** Immersion / Penetration probe no handle or lead | Food processing | -58° to 500°F -50° to 250°C | | 21 | Stem Length: 3.9"(100mm) Diameter: .15" (3.75mm) Lead Length: NA | NA |
| **FT24L** Penetration probe Waterproof | Food processing Grills | -148° to 500°F -100° to 250°C | IP67 | 21 | Stem Length: 24"(610mm) Diameter: .38" (9.5mm) Lead Length: 39.4" (1M) | PVC |
| **GT13L** Beaded probe with FDA approved insulation | General Purpose. Air | -148° to 500°F -100° to 250°C | IP67 | 42 | Stem Length: NA Diameter: NA Lead Length: 47.2" (1.2M) | SS |
| **GT19L** Oven clamp probe | Special hangingClip for ovens. Air. | -148° to 500°F -100° to 250°C | IP67 | 48 | Stem Length: NA Diameter: NA Lead Length: 39.4" (1M) | SS |

## Thermistor Probe with Lumberg Connectors
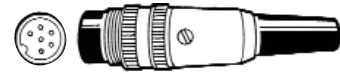
| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | Insulation Material |
|---|---|---|---|---|---|---|
| **FX11L** Liquid immersion probe | General Purpose, Liquid | -148° to 300°F -100° to 150°C | IP67 | 24 | Stem Length: 4"(102mm) Diameter: .13" (3.2mm) Lead Length: 39.4" (1M) | PVC |

## Thermistor Probe with Bipolar Connectors

| Model # Description | Application | Range°F°C | | Probe tip | Dimensions | Insulation Material |
|---|---|---|---|---|---|---|
| **CX13B** Surface flat disk probe | Surface | -40° to 300°F -40° to 150°C | | 30 | Stem Length: 3.15"(80mm) Diameter: .3" (7.5mm) Lead Length: 15.7" (0.4M) | PVC |
| **FX12B** Liquid immersion probe | General Purpose | -40° to 300°F -40° to 150°C | | 24 | Stem Length: 3.15"(80mm) Diameter: .13" (3.2mm) Lead Length: 15.7" (0.4M) | PVC |
| **FX13B** Liquid immersion probe | General Purpose | -40° to 300°F -40° to 150°C | IP67 | 24 | Stem Length: 8"(203mm) Diameter: .13" (3.2mm) Lead Length: 15.7" (0.4M) | PVC |
| **GX15B** Shielded air probe | Air | -40° to 300°F -40° to 150°C | | 44 | Stem Length: 3.15"(80mm) Diameter: .13" (3.2mm) Lead Length: 15.7" (0.4M) | PVC |
| **EX11B** extension lead male to female | Thermistor probes | NA | | NA | Stem Length: NA Diameter: NA Lead Length: 36" (0.9M) | PVC |

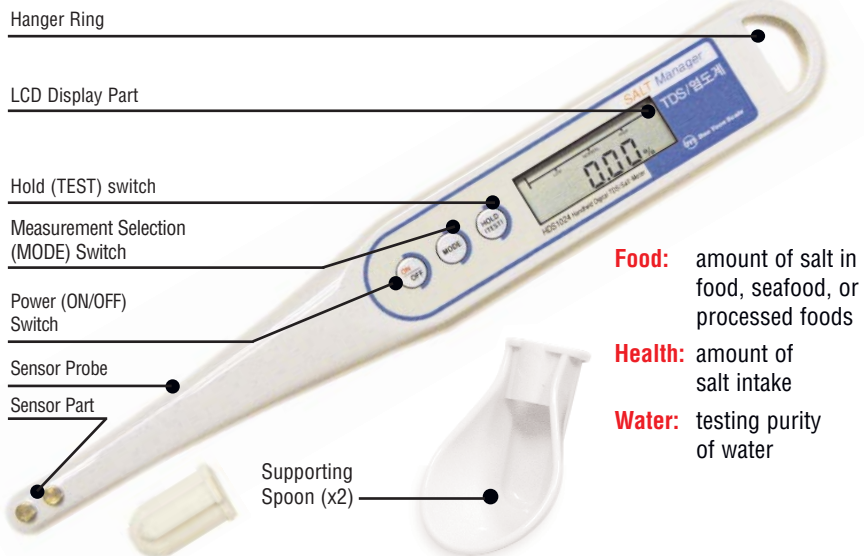## REFER TO THE TPI WEBSITE FOR ADDITIONAL OR OEM PROBE OPTIONS

### VKF300M
### K-Type Thermocouple Calibrator
Reliable K-type thermocouple, low battery indicator, and easy on-site thermometer calibration checking. Accuracy at 23°C is ±0.5°C or ± .9%°F.
**VKC300M**: Centigrade version

## TDS / Salt Meter
**Measure the concentration of dissolved TDS/salt (NaCl)**

Hanger Ring

LCD Display Part

Hold (TEST) switch

Measurement Selection (MODE) Switch

Power (ON/OFF) Switch

Sensor Probe

Sensor Part

Supporting Spoon (x2)

**Food:** amount of salt in food, seafood, or processed foods

**Health:** amount of salt intake

**Water:** testing purity of water

### What is TDS?
Water contains a variety of minerals and salts such as calcium, magnesium, carbonate, chloride, nitrate, etc. TDS is the sum of these amounts.

**Food Applications:**
Grill & Surface emperatures, Holding Cabinets, Serving Temperatures, and Storage Temperatures

# Close-Focus, Pocket-Size Infrared Thermometer

## Instantly read surface temperatures.

### 381F FEATURES

• **High accuracy ±2°F (±1°C) within the food temperature range 32°F to 158°F (-35°C to 00°C)**

### 380/381/381 Features

• **Easy-to-use one  button operation**
• **0.1 resolution for best reading**
• **Last reading hold**
• **Soft holster pouch**
• **Large, easy to read display**
• **°C and °F selectable**
• **9V battery included**

3-YEAR
LIMITED
WARRANTY

155mm x 127mm x 35mm 7oz (200g)

1.5"W x 2.75"H

• **Minimum Spot Size 1/8**
• **Selectable Fahrenheit or Centigrade** temperature range: -7° to 248°F or -22° to 120°C
• **Compact** - Easily fits in your pocket.
• **Auto Data Hold:** Point the unit at the surface to be measured then press and hold down the ON/SET button. Temperature will be displayed in less than 2 seconds and held on the display for 10 seconds.
• **Min/Max** function displays the minimum or maximum temperature of 8 samplings in 0.5 seconds.
• **AUTO** sets the 368 into scan mode to continuously scan surface temperatures in real time. Automatically powers off after 60 minutes.
• **NOTE:** *For optimum results, close focus IR thermometers should be held a distance of 0.1 to 1.5 inches from the surface to be measured to obtain an accurate reading*

| FUNCTION | 380 (w/o laser) | 381(laser) | 381F(laser) |
|---|---|---|---|
| Temp. Ranges | -4° to 572°F<br>-20° to 300°F | -4° to 572°F<br>-20° to 300°C | -31° to 572°F<br>-35° to 300°C |
| Laser Sighting | No | Yes | Yes |
| Accuracy @ 25°C and | ±(2% of reading,  ±3.5°F) : whichever is greater | | 32°F ~ 158°F : ±2°F<br><32°F or >158°F: ± (2% of reading, ±3.5°F): whichever is greater |
| Response Time | 500 milliseconds | | |
| Emissivity | 0.95 fixed | 0.95 fixed | 0.97 fixed |
| Distance to Spot Ratio | 9:1 | | 4:1 |
| Spectral Response | 7~14um | | |
| Operating Temperature | 32° to 120°F and 0° to 50°C | | |
| Battery Type | 9V alkaline | | |

• **Detect hot spots or leaks by taking sample spot readings of freezers, and walk-in coolers.**
• **Safely check the temperature and performance of ovens, ranges, rotisseries, deep fryers and dishwashers.**
• **Check clean dishes immediately after washing to ensure that high enough temperature levels were achieved in the dishwasher for sanitation purposes.**

### SPECIFICATIONS

| | |
|---|---|
| Range | -7° to 248°F or -22° to 120°C |
| Operating Temp | 32° to 104°F or 0° to 40°C |
| Accuracy | 2% or reading or ±2°C, whichever is greater |
| Response Time | Less than 0.5 second |
| Resolution | 0.1°F/C |
| Emmissivity | 0.95 fixed |
| Distant to Spot Ratio | 1:1.3 |

**What does "distance to spot ratio" mean?**
The laser spot needs to be showing inside the target area. An 8:1 "distance to spot ratio" means you are measuring a 1" diameter area at a distance of 8".

**How far can I measure?**
Distance is unlimited. The size of the target area sets the limit on distance for accurate measurements. Example: If the area you wish to measure is 1 foot in diameter, then you will need to be within 8 feet to record an accurate temperature.

**What is the smallest target I can read?**
Approximately one-half inch in diameter. except 1/8 for 368

### A385 IR Validator

Confirm the accuracy of an IR Thermometer by providing a stable temperature

• Connect a reference thermometer, like the 367, 341K, or 315C to the test port on the side of the A385.
• Insert the nose of the infrared thermometer into the validator and allow the reading to stablize.
• Compare the displayed reading to the reference thermometer.

**Two instruments in one. Plug in optional K-type surface probe to convert non-contact IR to contact.**

## APPLICATIONS
- Use contact thermometer probe to obtain correct temperatures of stainless steel grills.
- Transport temperatures are made easy. Use the laser to determine surface temperature of frozen delivery. Then use the contact probe to determine internal temperature if the delivery is suspect.

## FEATURES
- Laser pointer
- 8:1 distance to spot ratio
- Record function
- ° C and ° F selectable temp
- Display data hold function
- Gun-type compact design
- Back light
- Operation lock function
- Trigger switch
- 9V battery and soft pouch included
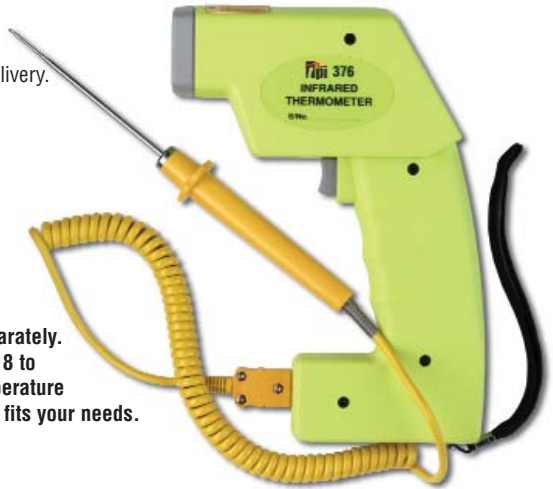
**Probe sold separately. See pages 6 to 8 to select the temperature probe that best fits your needs.**

| FUNCTION | 376(laser) |
|---|---|
| Temp. Ranges | -58° to 950° F 18° to 1,000° C |
| Laser Sighting | Yes |
| Accuracy @ 25°C and | ±(2% of reading, ±3.5°F) : whichever is greater |
| Response Time | 500 milliseconds |
| Emissivity | Variable Oix to 0.7 |
| Distance to Spot Ratio | 11.5 to 1 |
| Spectral Response | 7~14um |
| Operating Temperature | 32° to 120°F and 0° to 50°C |
| Battery Type | 9V alkaline |

As food moves in and out of the temperature danger zone (40° to 140°F, or 4° to 60°C) during transit, storage and preparation an IR thermometer with optional contact probe is an ideal all-in-one instrument.

# Optional Accessories

**CK15M**
- Heavy duty K-type surface probe for HK11M handle
- Spring sensor to maintain pressure on surface being measured
- Ceramic insert to help hold heat near sensor for accurate measurements
- 8'' stem for easy control and safe clearances
- Exposed junction for fast response

**FK13M**
- K-type general purpose probe for HK11M handle
- 8'' sealed stem for immersion into liquids, gels and semi solids
- Stem sealed to protect sensing area

**HK11M**
- Heavy-duty handle for K-Type thermocouple probes.
- Can be used with the CK15M FK13M, and GK16M. See pages 6 to 8
- 3' coiled lead for durability and long reach.

**GK16M**
- K-type air probe for HK11M handle
- Shielded tip with perforations to protect sensing area
- 8'' stem for easy control and reach into air ducts
- Exposed junction for fast response

# Data Loggers and Software

## Measure temperature and humidity.

Ideal for monitoring fresh, frozen or chilled foods in storage or transit.

## FEATURES
- Waterproof! • Non Volatile Memory • Active and Alarm LED's
- Remote Magnet Start • Real-time Clock • User Replaceable Battery
- Long Life Lithium Battery (3 Years) • Polycarbonate Case
- Optional Liquid Crystal Display

**EJ-TS-D-2**
**Economy Temperature Data Logger**
One internal temperature sensor.
Range:      -40°C to 70°C
Memory:   2000 samples

# Data Logger Applications
- **Food Storage**
- **Frozen & Chilled Display**
- **Airline Catering**
- **Animal Husbandry**
- **Wine & Beer Pasteurization**
- **Refrigerated Vehicles**
- **Refrigerated Rail Cars**
- **Raw Material Storage**
- **Culture Rooms & Laboratories**
- **Warehouse Storage**
- **Air Freight**
- **Environmental Monitoring**
- **Environmental Research**
- **Energy Management**

**EJ-1E-D-16**
**Economy Temperature Data Logger**
One internal temperature sensor and one external probe sensor.
Range:           -40°C to 70°C
Memory:          8000 samples per channel
Optional Display:   EJ-1E-D-16-L

**JA-INT-WIN**
**Software and Interface**

## Data Analysis Software

The real value of a data logging system is in the information it provides. Maximizes the uses of this information through data Analysis Software. Powerful and sophisticated software is user friendly, enabling data to be easily organized and analyzed to provide optimum management information. Software is designed for Windows 2000, Windows 98, 95 and NT used on most PC's.