RAYNGER® ST™ 20 PRO

THE PROFESSIONAL'S CHOICE FOR VALUE AND PRECISION

Raytek's ST20 Infrared Non-Contact Thermometers offer accurate readings in a compact and reliable design. The ST20 Pro has a temperature range of -25 to 999°F (-32 to 535°C), a 500 msec reading response time and a weight of 11 ounces. This thermometer is safe to use as it requires no contact with the surface measured so long as it is within the thermometer's range (D:S=12:1).

With the ST 20's extra-bright single-point laser sighting, MAX temperature displays and rugged rubber over molding, it can prevent downtime by permitting preventative and predictive maintenance by simply pointing, shooting and reading temperature measurements. This thermometer is perfect for automotive and diesel applications, facility maintenance, fire safety, marine maintenance, electrical and industrial, asphalt work and HVAC systems; and these are just a few of the applications in which the ST20 can be utilized.

- **Wide Temperature Range**
- **Low Cost**
- **Max Temperature Display**
- **Tripod Mountable**
- **Applications**

  Automotive and Diesel

  HVAC/R Systems
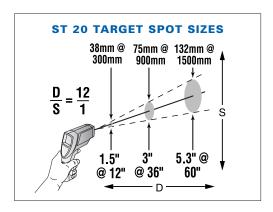
  Electrical and Industrial

  Facility Maintenance

  Food Safety

  Asphalt Work

  Fire Safety

  Marine Maintenance

- **ST20 Pro with laser**

  -25 to 750°F (-32 to 400°C); °F/°C, backlight

ST 20 TARGET SPOT SIZES

38mm @ 300mm   75mm @ 900mm   132mm @ 1500mm

$$\frac{D}{S} = \frac{12}{1}$$

S

1.5" @ 12"   3" @ 36"   5.3" @ 60"

D

RAYNGER® ST™ 60/80 PRO PLUS

POINT, SHOOT AND READ: INFRARED NON-CONTACT THERMOMETER

The simple operation sequence of point, shoot and read is what makes gathering temperature data easier than ever with Raytek's ST60 and ST80 Pro Plus Infrared Non-Contact Thermometers. The ST60 has a temperature range of -25 to 1100°F (-32 to 600° C) and the ST80 has a temperature range of -25 to 1400°F (-32 to 760°C). Both have a response time of 500 msec (95% of reading) and a weight of 11 ounces.

Suited to the most demanding applications, these non-contact infrared thermometers include innovative features like extra-bright single-point laser sighting, a wide temperature range and 12-point datalogging. The units are rugged and durable, and include a jack for an RTD temperature probe. Both the ST60 and ST80 can be tripod-mounted for hands-free operation.

Facility maintenance, HVAC systems, food safety, electrical and industrial, and marine maintenance are just some of the areas in which these thermometers can be employed. Powered by 9V alkaline or NiCad batteries, Raytek's ST60's and ST80's target spot sizes at focus point are D:S=30:1 and D:S=50:1 respectively.

- **Wide temperature range**
- **Powerful optics**
- **12-point datalogging**
- **Max temperature display**
- **Tripod mountable**
- **Includes jack for an RTD temperature probe**
- **Applications**
  Automotive and Diesel
  HVAC/R Systems
  Electrical and Industrial
  Facility Maintenance
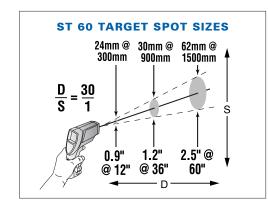 Food Safety
  Asphalt Work
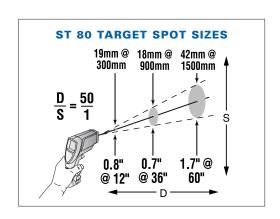 Fire Safety
  Marine Maintenance

- **ST60 Pro Plus**
  -25 to 1100°F (-32 to 600°C); datalogging

- **ST80 Pro Plus**
  -25 to 1400°F (-32 to 760°C); datalogging

ST 60 TARGET SPOT SIZES

24mm @ 300mm   30mm @ 900mm   62mm @ 1500mm

$$\frac{D}{S} = \frac{30}{1}$$

S

0.9" @ 12"   1.2" @ 36"   2.5" @ 60"

D

ST 80 TARGET SPOT SIZES

19mm @ 300mm   18mm @ 900mm   42mm @ 1500mm

$$\frac{D}{S} = \frac{50}{1}$$

S

0.8" @ 12"   0.7" @ 36"   1.7" @ 60"

D

RAYNGER® ST™ 80-IS PRO PLUS

ALL THE FEATURES OF THE ST80 PLUS AN INTRINSICALLY SAFE RATING

Intrinsic Safety is a technique for preventing explosions in hazardous areas. Intrinsic safety is achieved by limiting the energy and surface temperature of a device during normal operation, or during foreseeable fault conditions, to an insufficient level to ignite an explosive environment. The presence of dusts, gases, grains, and fibers are some of the factors that can lead to ignition. An Intrinsically Safe rating is earned by passing the rigorous approval process of a recognized entity. Upon approval, the exact approved hazardous situations are displayed on the label attached to the unit.

Factory Mutual is one of the most recognized approving organizations in North America. Its approval is accepted in many parts of the world (checking with the end-user customer is the only way to be sure outside North America). Certification from TUV is the most common approval in Europe. The ST80-IS does not have TUV approval and it is not currently planned.

- ## The Professional's Choice for:
  Hazardous Locations, Fire Safety, Electrical and Industrial, Automotive and Diesel, HVAC/R Systems,
  Facility Maintenance, Food Safety, Asphalt Work and Marine Maintenance

- ## FM approval of Intrinsically Safe
  Can get portable noncontact temperature measurements in many hazardous locations. For most customers, the ST80-IS will be the only means to do this! Brings all the benefits of noncontact temperature measurement including speed, safety, convenience, to "hazlocs" (hazardous locations)

- ## Extra Bright Laser Point Sighting
  Visible in all conditions, especially outdoors

- ## 1%/1°F (2°C) Accuracy at Normal Operating Ambient
  Ideal for use in critical monitoring applications (steam traps, relief valves, furnaces, boilers, sewers)

- ## Long-Range (50:1) Optical Resolution (D:S)
  Allows measurement of smaller targets at longer distances (e.g. inch/cm scale targets at 10 ft/3 m). Often eliminates need for climbing, reaching in dangerous areas. Increases safety

- ## Sub-Zero (-25°F/-32°C) & Hi-Temp (1400°F/760°C) Range Capability
  Increases instrument versatility and application capabilities at variety of temperature ranges found in chemical processing and other hazardous locations

- ## 500 msec Response Time
  Accurate readings when target temperature is changing rapidly. Improved response when using instrument to sweep wide target regions. Dangerous problems can be seen instantly

- ## Rubberized Grip; Overmolded Nose/Back
  Rugged — less prone to dropping. Improved shock resistance. Resistant to common chemicals, such as, gasoline

- ## FM approved RTD probe included
  Ability to do both contact and noncontact temperature measurement in hazardous locations with one product. Closely adjust emissivity on site. Measure intake and outlets simultaneously

- ## Twelve point data logging
  Accurately record several key temperatures for subsequent analysis in a nonhazardous area

Who Can Benefit By Using This Intrinsically Safe Device?

• Petrochemical refineries and tank farms

• Oil exploration, especially offshore drilling rigs

• Pumping stations for petroleum and gas

• Solid propellant manufacture

• Chemical/ pharmaceutical plants

• Ink, laminate, and coating processes that emit volatile vapors

• Fire departments in situations where flammable gases can be present

• Hazardous waste disposal and sewage

• Aviation fueling and maintenance (also, any refueling situation for rail, auto, ship)

• Liquid natural gas storage

• Arms manufacture and storage

• Boiler rooms

• Hydrogen generating facilities

INTRINSICALLY SAFE APPROVAL DETAILS

All Intrinsically Safe Approved equipment must carry a label that specifies exactly where it can be used and the name of the testing laboratory. The exact approval language can be very important for a customer determining if a particular application is covered by the FM Intrinsically Safe approval.

The label on the side of the ST80-IS reads: "FM Approved. Intrinsically Safe, Class I, Division 1, Groups A, B, C, D.   Class I, Zone 0, AEX ia IIC, T4 at 50C when used with 9v alkaline battery."

This language means that the ST80-IS can be used where flammable material is present continuously and in the presence of acetylene, hydrogen, ethylene or propane gases at a maximum temperature of 135°C (though Raytek specifies a maximum ambient temperature of 50° for reliable thermometer operation). The rating does not apply to coal dust, grain dust, metal dust, or fibers.

RAYNGER® ST™ SERIES

SPECIFICATIONS

ACCURACY	±1% of reading or ±2°F (±1°C), whichever is greater, at 73°F (23°C) ambient temperature
REPEATABILITY	±0.5% of reading or ±2°F (±1°C), whichever is greater
RESPONSE TIME	(95%) 500 mSec
AMBIENT OPERATING RANGE	32 to 122°F (0 to 50°C)
POWER	9V Alkaline or NiCad battery
DIMENSIONS	8 x 6 x 2 in. (200 x 160 x 55 mm)
WEIGHT	11 oz. (320g)
OPTIONS/ACCESSORIES	Hard Case and Wrist Strap (standard) Nylon Holster with Belt Clip NIST/DKD Certification Contact Probe (ST60/80)

	ST20	ST60	ST80
TEMPERATURE RANGE	-25 to 999°F (-32 to 535°C)	-25 to 1100°F (-32 to 600°C)	-25 to 1400°F (-32 to 760°C)
DISPLAY RESOLUTION	0.5°F (0.2°C)	0.1°F/C	0.1°F/C
MAX, MIN, DIF AND AVG TEMPERATURE	No	Yes	Yes
RECALL LAST READING	No	Yes	Yes
DISPLAY HOLD	Yes	Yes	Yes
HIGH AND LOW AUDIBLE AND VISIBLE ALARMS	No	Yes	Yes
LCD BACKLIGHT	Yes	Yes	Yes
LASER (CLASS II)*	Yes	Yes	Yes
EMISSIVITY	Pre-set 0.95	0.1 to 1.0 digitally adjustable	0.1 to 1.0 digitally adjustable
CONTACT PROBE INPUT	No	Yes	Yes
DISTANCE TO SPOT RATIO	12:1	30:1	50:1

CAUTION
LASER RADIATION - DO
NOT STARE INTO BEAM
OUTPUT < 1mW
WAVELENGTH 630-670 nm
CLASS II LASER PRODUCT

CE

RAYNGER ST ORDERING INFORMATION

RAYST20XBUS	Raytek's ST20 Pro infrared non-contact thermometer
RAYST20XBCRUS	Raytek's ST20 Pro infrared non-contact thermometer with NIST certification
RAYST60XBUS	Raytek's ST60 Pro Plus infrared non-contact thermometer
RAYST60XBCRUS	Raytek's ST60 Pro Plus infrared non-contact thermometer with NIST certification
RAYST80XBUS	Raytek's ST80 Pro Plus infrared non-contact thermometer
RAYST80XBCRUS	Raytek's ST80 Pro Plus infrared non-contact thermometer with NIST certification
RAYST80XBISUS	Raytek's ST80 Instrinsically Safe Pro Plus infrared non-contact thermometer
RAYST80XBISCRUS	Raytek's ST80 Instrinsically Safe Pro Plus infrared non-contact thermometer with NIST certification

ACCESSORIES

XXXSTACHC	Spare hard case
XXXSTACSC	Nylon holster-style case
XXXSTACPR	RTD contact probe