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TS-SR-i20 Intelligent Solar LED Road Stud

Features

- Use of microcontroller technology.
- Appropriate for regular traffic zones and areas of poor visibility.
- Ideal for road delineation, bends/curves, crosswalks among others applications.
- Only .59" (15mm) above road surface.
- Low maintenance, 100% waterproof.
- SLEEP mode to prevent discharge during storage / transport.
- Constant brightness during all functioning period.
- Protection against deep discharge of the batteries / capacitors.
- High performance photovoltaic solar module.
- Energy storage in super capacitors or batteries.
- Internal prismatic system.
- Up to .62 mile (1 km) visibility distance due to high intensity LEDs.
- Many LED color options available for a wide variety of applications.
- Optional hard anodizing or powder coating available for top of road stud.



Specifications

Modes of Operation:

- Always On or Flashing at night
- Optional 24/7 flashing must be specified when ordering. Due to power restrictions, 24/7 flashing may reduce road stud brightness.

LED Configuration:

- Unidirectional or bidirectional

Electrical:

	Always On		Flashing	
	Battery	Capacitor	Battery	Capacitor
Power Supply	Battery	Capacitor	Battery	Capacitor
Autonomy After Full Charge (hours)	1000	35	2500	70
SLEEP Mode Autonomy	12 Months ¹			
Working Temperature	-13°F to +185°F (-25°C to +85°C)			

¹ Battery version only. After 12 months it is necessary to recharge the road stud a minimum of 2 sunny days.

Optical:

- LED Quantity:
 1 or 2 LEDs (Unidirectional)
 2 or 4 LEDs (Bidirectional)
- LED Type: 5mm
- LED Colors: White, Red, Yellow, Green, Blue
- Viewing Angle: 15°

Mechanical:

- Material: Aluminum and Polycarbonate
- Mechanical Resistance: 20 tons
- Weight: 2.2 lb. (1 kg)
- Protection Index: IP68, IK10
- Dimensions: 5.67" (144mm) diameter x 3.43" (87mm) height

Other Versions

TS-SR-i20-ICE Intelligent Ice Detector Solar Road Stud:

- Detection of probability of ice formation in critical places.
- Only operates when ice is present.
- Trigger detection given by internal temperature sensor.
- Adjustable trigger detection point before production.

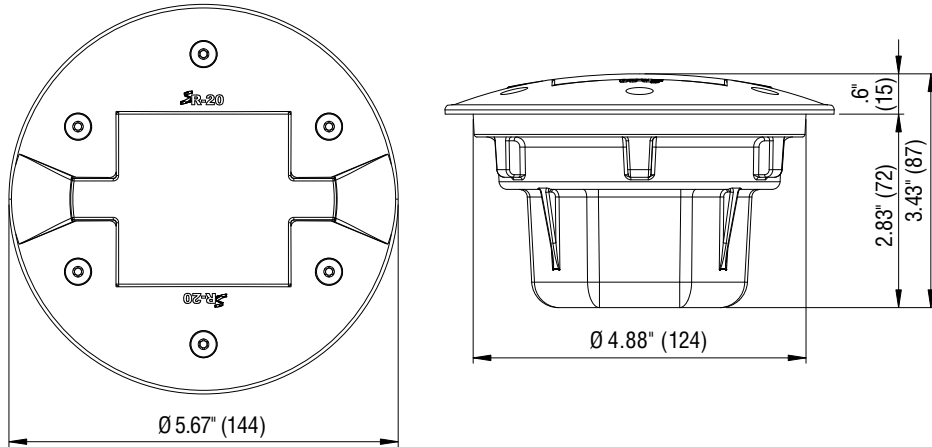
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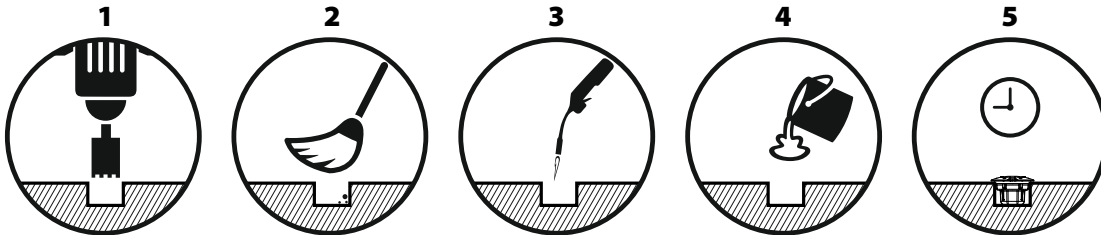
Dimensions (mm)



Installation Procedure



Personal protective equipment must be worn during installation process.



- 1 After deciding the location where the stud will be installed, drill a hole having a minimum diameter of 5.12" (130mm) and 3.15" (80mm) deep.
- 2 Brush any debris or dust from the hole resulting from drilling.
- 3 Dry the hole with a blowtorch to remove any moisture that may compromise the adhesion and effectiveness of the grout.
- 4 Pour ± 4.4 lb. (± 2 kg) of ULTRAFLOW 4000/8 grout in the hole and insert the stud checking that the LEDs are facing the correct direction. Remove any excess grout.
- 5 The grout drying time may change depending on weather conditions. Consult the grout data sheet for more information.

Changing or not completing the described installation process can result in suspension of warranty.

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TS-SR-i20 Intelligent Solar LED Road Stud

Unidirectional 1 LED

Models

TS-SR-i20-U1W-F-C-S
 TS-SR-i20-U1R-F-C-S
 TS-SR-i20-U1Y-F-C-S
 TS-SR-i20-U1B-F-C-S
 TS-SR-i20-U1G-F-C-S



Unidirectional 2 LEDS

Models

TS-SR-i20-U2W-F-C-S
 TS-SR-i20-U2R-F-C-S
 TS-SR-i20-U2Y-F-C-S
 TS-SR-i20-U2B-F-C-S
 TS-SR-i20-U2G-F-C-S

Bidirectional 1+1 LEDS

Models

TS-SR-i20-B2WW-F-C-S
 TS-SR-i20-B2RR-F-C-S
 TS-SR-i20-B2YY-F-C-S
 TS-SR-i20-B2BB-F-C-S
 TS-SR-i20-B2GG-F-C-S



Bidirectional 2+2 LEDS

Models

TS-SR-i20-B4WW-F-C-S
 TS-SR-i20-B4RR-F-C-S
 TS-SR-i20-B4YY-F-C-S
 TS-SR-i20-B4BB-F-C-S
 TS-SR-i20-B4GG-F-C-S

Description	Color
Solar i-Stud, 1 LED / Flashing / Capacitor / Standard CAP	White
"	Red
"	Yellow
"	Blue
"	Green

Description	Color
Solar i-Stud, 2 LED / Flashing / Capacitor / Standard CAP	White
"	Red
"	Yellow
"	Blue
"	Green

Description	Color
Solar i-Stud, 2 LED / Flashing / Capacitor / Standard CAP	White / White
"	Red / Red
"	Yellow / Yellow
"	Blue / Blue
"	Green / Green

Description	Color
Solar i-Stud, 4 LED / Flashing / Capacitor / Standard CAP	White / White
"	Red / Red
"	Yellow / Yellow
"	Blue / Blue
"	Green / Green

CAP Options:
Operating mode option: TS-SR-i20-XXXX-A-C-XX
 TS-SR-i20-XXXX-F-B-XX
 TS-SR-i20-XXXX-A-B-XX

Different CAP treatments available by request
 Always ON (With Capacitor)
 Flashing (With Battery)
 Always ON (With Battery)

Ice detector mode: TS-SR-i20-XXXX-X-X/ICE

Ice detector only

Ref. Example (Color): TS-SR-i20-XXWB-X-X-XX
Color combinations:

Side1 - White / Side 2 - Blue

WR, WY, WB, WG, RY, RB, RG, YB, YG, BG

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TS-SR-i20 Intelligent Solar LED Road Stud

Unidirectional 1 LED

Models

TS-SR-i20E-U1W-F-C-S
 TS-SR-i20E-U1R-F-C-S
 TS-SR-i20E-U1Y-F-C-S
 TS-SR-i20E-U1B-F-C-S
 TS-SR-i20E-U1G-F-C-S

<i>Description</i>	<i>Color</i>
Solar i-Stud Evolution, 1 LED / Flashing / Capacitor / Standard CAP	White
"	Red
"	Yellow
"	Blue
"	Green



Unidirectional 2 LEDs

Models

TS-SR-i20E-U2W-F-C-S
 TS-SR-i20E-U2R-F-C-S
 TS-SR-i20E-U2Y-F-C-S
 TS-SR-i20E-U2B-F-C-S
 TS-SR-i20E-U2G-F-C-S

<i>Description</i>	<i>Color</i>
Solar i-Stud Evolution, 2 LED / Flashing / Capacitor / Standard CAP	White
"	Red
"	Yellow
"	Blue
"	Green

Bidirectional 1+1 LEDs

Models

TS-SR-i20E-B2WW-F-C-S
 TS-SR-i20E-B2RR-F-C-S
 TS-SR-i20E-B2YY-F-C-S
 TS-SR-i20E-B2BB-F-C-S
 TS-SR-i20E-B2GG-F-C-S

<i>Description</i>	<i>Color</i>
Solar i-Stud Evolution, 2 LED / Flashing / Capacitor / Standard CAP	White / White
"	Red / Red
"	Yellow / Yellow
"	Blue / Blue
"	Green / Green



Bidirectional 2+2 LEDs

Models

TS-SR-i20E-B4WW-F-C-S
 TS-SR-i20E-B4RR-F-C-S
 TS-SR-i20E-B4YY-F-C-S
 TS-SR-i20E-B4BB-F-C-S
 TS-SR-i20E-B4GG-F-C-S

<i>Description</i>	<i>Color</i>
Solar i-Stud Evolution, 4 LED / Flashing / Capacitor / Standard CAP	White / White
"	Red / Red
"	Yellow / Yellow
"	Blue / Blue
"	Green / Green

CAP Options:

Different CAP treatments available by request

Operating mode option:

TS-SR-i20E-XXXX-A-C-XX
 TS-SR-i20E-XXXX-F-B-XX
 TS-SR-i20E-XXXX-A-B-XX

Always ON (With Capacitor)
 Flashing (With Battery)
 Always ON (With Battery)
 Programming Tool

Programming:

TS-SR-iTool

Ref. Example (Color):

TS-SR-i20E-XXWB-X-X-XX

Side 1 - White / Side 2 - Blue

Color combinations:

WR, WY, WB, WG, RY, RB, RG, YB, YG, BG

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