

# TRUSENSE® S300

## DIFFUSING LENS ACCESSORY

### Better Results for Liquid Level Measurement

The S300 Diffusing Lens accessory (PN 7024972) will spread the beam of the laser over a greater area. Generally speaking, the diffusing lens will allow the S300 to achieve better results under certain conditions. The diffusing lens is recommended under the following conditions:

- Whenever the range to the target is less than 10 meters.
- Whenever the liquid surface is turbulent during measurement.
- Whenever the beam width is not restricted by the diameter of a stilling pipe.

The diffusing lens is not recommended when:

- Measuring a range over 50 meters.
- Whenever a stilling pipe is so narrow over its length that the diameter of the stilling pipe will be less than the diameter of the beam spread. (See table on reverse.)



### Mounting the S300 Diffusing Lens

The diffusing lens is attached to the front of the S300 using the 3 screws provided. A 2mm allen wrench is required, and one has been included in the diffusing lens package. The diffusing lens can be attached from either side (i.e. there is no front or back side). Use of the diffusing lens does not compromise the IP rating of the sensor.

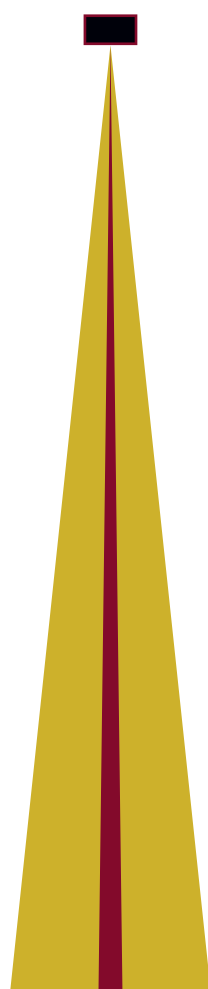
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### Beam Spread of S300 Over Distance

- The laser beam will spread over distance. The beam spread will increase if the diffusing lens is used. Below is a table to calculate the estimated beam spread at different distances. These calculations should be considered when mounting the sensor against a wall, shooting down a stilling pipe, or where other obstructions could be in the way of the laser beam.

S300 Sensor



- Beam width
- Beam width w/diffusing lens

| Distance to Target -<br>Meters (Feet) | Beam Width<br>w/o diffuser<br>Meters (Feet) | Beam Width<br>With 2.5 diffuser<br>Meters (Feet) |
|---------------------------------------|---------------------------------------------|--------------------------------------------------|
| .5 (1.64)                             | .025 (.08)                                  | .045 (.14)                                       |
| 1.0 (3.28)                            | .026 (.08)                                  | .067 (.21)                                       |
| 1.5 (4.92)                            | .028 (.09)                                  | .088 (.28)                                       |
| 2.0 (6.56)                            | .029 (.09)                                  | .110 (.35)                                       |
| 2.5 (8.20)                            | .031 (.10)                                  | .132 (.43)                                       |
| 3.0 (9.84)                            | .032 (.10)                                  | .154 (.50)                                       |
| 3.5 (11.48)                           | .034 (.11)                                  | .176 (.57)                                       |
| 4.0 (13.12)                           | .035 (.11)                                  | .198 (.64)                                       |
| 4.5 (14.76)                           | .037 (.12)                                  | .219 (.71)                                       |
| 5.0 (16.40)                           | .038 (.12)                                  | .241 (.78)                                       |
| 5.5 (18.04)                           | .040 (.13)                                  | .263 (.85)                                       |
| 6.0 (19.69)                           | .041 (.13)                                  | .285 (.92)                                       |
| 6.5 (21.33)                           | .043 (.14)                                  | .307 (.99)                                       |
| 7.0 (22.97)                           | .044 (.14)                                  | .328 (1.06)                                      |
| 7.5 (24.61)                           | .046 (.15)                                  | .350 (1.13)                                      |
| 8.0 (26.25)                           | .047 (.15)                                  | .372 (1.20)                                      |
| 8.5 (27.89)                           | .049 (.16)                                  | .394 (1.27)                                      |
| 9.0 (29.53)                           | .050 (.16)                                  | .416 (1.34)                                      |
| 9.5 (31.17)                           | .052 (.17)                                  | .438 (1.41)                                      |
| 10.0 (32.81)                          | .053 (.17)                                  | .459 (1.48)                                      |