

# The T-220 Small-Bore Self-Centering Target

*The ideal alignment tool for tube sheet bore straightness, large gun barrel straightness, and small extruder barrel alignment*

## Target Features

Hamar Laser's T-220 Small-Bore, Self-Centering Target is designed specifically to measure the straightness of small bores, from .70 in. (18 mm) to 1.5 in. (38 mm). This small, lightweight, compact target self-centers to an accuracy of .0005 in. (0.013 mm) and has a sensor area of 4 x 4 mm.

### Target features include:

- 3 ft. (1 m) carbon fiber insertion pole with connector (can be folded to 1.5 ft.). Extra lengths of pole are available for bores up to 10 feet (3 m) long.
- The target is customized for each bore, but can accommodate diameter changes of  $\pm .010$  in. (0.25 mm) without affecting the ability to self-center in the bore.
- 4 x 4 mm PSD (Position Sensing Detector) is concentric to bore ID to  $> .0005$  in. (0.013 mm).
- .00002 in. (0.0005 mm) resolution when used with the R-1307 Readout.
- .654 in. (16.6 mm) OD, with tungsten carbide, precision-ground measuring balls (feet) and a tapered end for easy insertion in bores.
- Accommodates bores from .70 in. (18 mm) to 1.5 in. (38 mm).
- Can be used with the R-1307C or R-1307 2.4ZB target readouts. Use the A-910-2.4ZB Radio Receiver for a PC with the R-1307-2.4ZB for wireless data downloads to our Bore9 software.
- Spirit level orients the PSD sensor axes to the alignment axes of the bore.



*The T-220 Small-Bore, Self-Centering Target*



**HAMAR  
LASER**®  
ALIGN WITH THE BEST

5 Ye Olde Road, Danbury, CT 06810 USA

Phone: (800) 826-6185 or +1-203-730-4600 • Fax: +1-203-730-4611

E-mail: [sales@hamarlaser.com](mailto:sales@hamarlaser.com) • Internet: <http://www.hamarlaser.com>

For a list of our distributors, please visit: [http://www.hamarlaser.com/intl\\_distributors.htm](http://www.hamarlaser.com/intl_distributors.htm)

# Specifications

## The T-220 Small-Bore Self-Centering Target

<b>Size:</b>	.654 in. (16.6 mm) OD. 1.72 in. (43.7 mm) long without pole.
<b>Sensor Size/Resolution:</b>	4 x 4 mm PSD with .00002 in. (0.5 micron) resolution when used with the R-1307.
<b>Sensor Concentricity to Bore ID:</b>	< .0005 in. (0.013 mm)
<b>Material:</b>	303 stainless steel
<b>Cable:</b>	Hard-mounted 10 ft. (3m) cable mounted inside the inserted pole with Lemo connector.
<b>Weight:</b>	5 oz. (85 g).
<b>Bore Diameter Range :</b>	Can accommodate $\pm .010$ in. (0.25 mm) diameter change and still self-center.
<b>Insertion Pole:</b>	3 ft. (1m) in two 1.5 ft. pieces. Extra lengths of pole are available up to 10 ft. (3 m).

