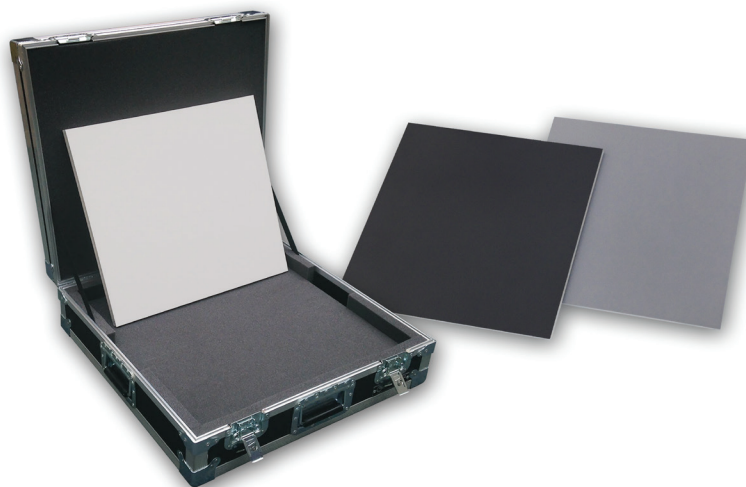


# LiDAR Test Target Kits



Driverless car OEMs rely on the accuracy of multiple sensors including LiDAR technology to maintain order and avoid incidences on the road. Autonomous cars depend on these laser-based time of flight systems to measure the distance between the vehicle and any proximate object. The laser light is transmitted at the speed of light towards an object and the time taken for the laser to hit the target is recorded. Laser point clouds emitted and reflected back to the transmitter and the time taken for the reflected light to hit the transmitter is used to create a 3D mapping of the scene. To accurately assess short-range and long-range sensitivity over the dynamic range of LiDAR systems, large area dark, grey, and white reference targets are ideal.

Labsphere's standard LiDAR Test Target Kits include three reflectance levels; 10%, 50% and 80%, a robust case that holds all three Permafect® targets for storage and transport, and spectral reflectance and uniformity test reports. The kits come in a choice of three target sizes; 0.5 m x 0.5 m, 1.0 m x 1.0 m and 1.5 m x 1.5 m.

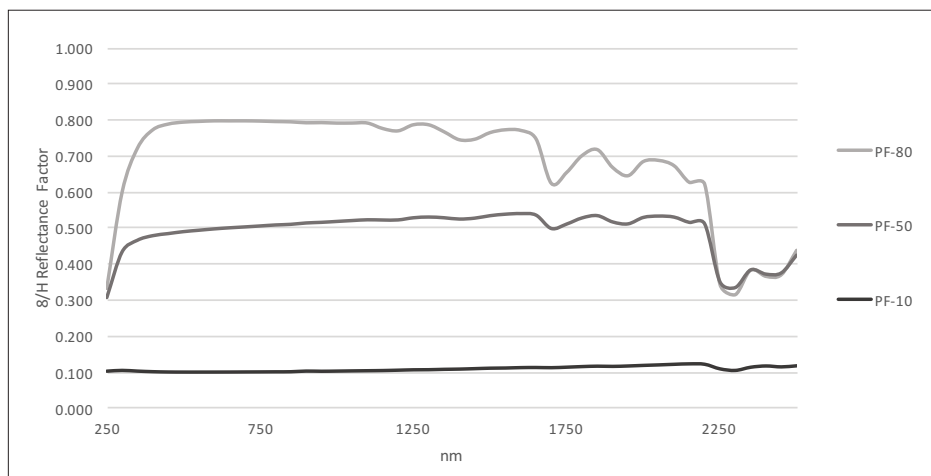
## No other options compare

- Lightweight
- Uniform
- Durable
- Easy to Clean

## Key performance factors

- Three grey scale levels (10%, 50% and 80%) for the dynamic range testing and distance sensitivity of LiDAR systems
- Reflectance levels in NIR laser wavelength 850 nm, 905 nm, and 1550 nm
- Targets sizes (0.5 m, 1 m and 1.5 m square) are ideal for the operating distance
- Near Lambertian diffuse reflectance factor for incident angle independence
- Uniform reflectance over the entire reflecting surface
- Robust for production and field use
- Accommodates mounting of the frameless targets

## Typical 8/H Reflectance Factors of Permaflect



### Measurement report includes:

- Average reflectance and mappings at 850 nm, 905 nm, and 1550 nm
- Reflectance uniformity

### Permaflect-X (%)                      10%                      50%                      80%

For targets 1 m<sup>2</sup> or smaller:

<b>Tolerance at 905 nm:</b>	±1.25%	±1.75%	±1.25%
<b>Variance from Nominal:</b>	8.75% - 11.25%	48.25% - 51.75%	78.75% - 81.25%

For targets greater than 1 m<sup>2</sup>:

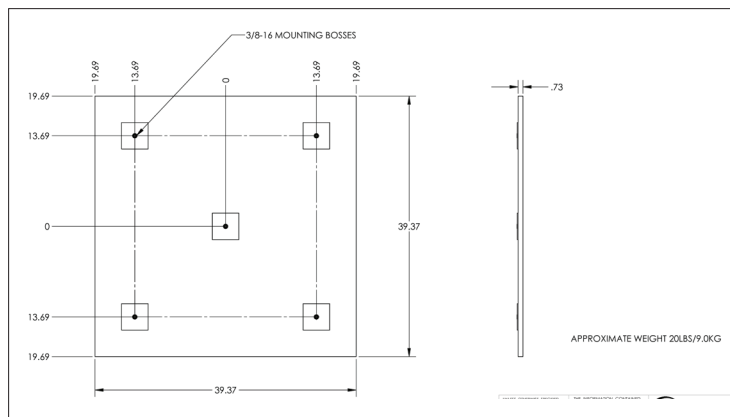
<b>Tolerance at 905 nm:</b>	±1.5%	±2.0%	±1.5%
<b>Variance from Nominal:</b>	8.5% - 11.5%	48.0% - 52.0%	78.5% - 81.5%

#### Uniformity:

0.5 m x 0.5 m at 600 nm	+/- 1%	+/- 1.5%	+/- 1%
1.0 m x 1.0 m at 600 nm	+/- 1%	+/- 1.5%	+/- 1%
1.5 m x 1.5 m at 600 nm	+/- 1%	+/- 1.5%	+/- 1%



### 1.0 m x 1.0 m Informational Drawing



### Carry and stow case features

- Protects surface and corners from being scratched and dinged
  - Hard sided hinged case with reinforced corners
  - Foam lined fitted inserts
  - Can be used to stack targets in constrained spaces
- Grab and go with recessed handles and latch
- Grab and drag larger targets with EZ Haul wheels options
- Can be used for shipment, storage and transport

## Ordering Information

MODEL NUMBER	DESCRIPTION	ORDER NUMBER
PFTK-05M-UF-WM	Permaflect LiDAR Kit, 10%, 50% and 80%, 0.5 m x 0.5 m Unframed w/mounting and Carry Case Weight: 30 lbs (14 kg)	AA-01564-050
PFTK-1M-UF-WM	Permaflect LiDAR Kit, 10%, 50% and 80%, 1 m x 1 m Unframed w/mounting and Wheeled Carry Case Weight: 95 lbs (43 kg)	AA-01564-100
PFTK-15M-UF-WM	Permaflect LiDAR Kit, 10%, 50% and 80%, 1.5 m x 1.5 m Unframed w/mounting and Wheeled Carry Case Weight: 160 lbs (72 kg)	AA-01564-150



Advancing the Technology of Light: Measure. Create. Reflect.

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