

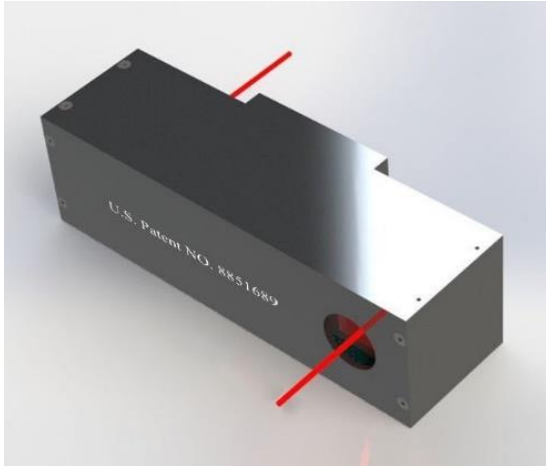
# Lateral Transfer Hollow Periscope™ - LTHP™

## Lateral Transfer Hollow Retroreflector™ - LTHR™

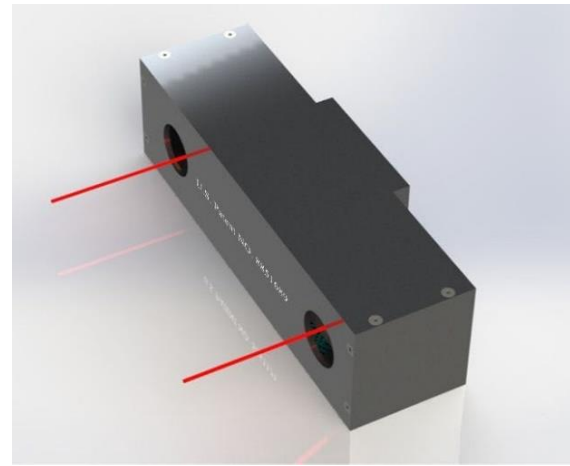


The PLX Lateral Transfer Hollow Periscope™ (LTHP) and Lateral Transfer Hollow Retroreflector™ (LTHR) are used to offset a beam any distance while maintaining parallelism to the input beam. They are extremely temperature stable and have a beam output as accurate as one arc second.

The PLX LTHP and LTHR have many uses in applications such as alignment, beam delivery and bore sighting.



LTHP - shift a beam laterally



LTHR - folding light 180°

### Specifications

Substrate	Pyrex/Fused Silica
Housing material	Aluminum
Surface Flatness	$\lambda/2 - \lambda/10$ @p.v.633nm
Surface Quality	80-50 Scratch-Dig
Beam Deviation	1.0 – 30.0 Arcsecond

In applications when the LTHP or the LTHR is subjected to vibration, the exiting beam remains static and maintains perfect parallelism with the entrance beam. The LTHP and LTHR are also useful where one of the mirrors is a 50-50 beamsplitter. This configuration produces two output beams, precisely parallel to each other, providing 2 separate line of sights. In addition, the LTHP and LTHR are extremely temperature stable because all component parts have the same coefficient of thermal expansion (CTE). For applications where the major beam must be aligned with two or more other optical axis. PLX Rotary Movement Device™ (RMD) can be used to attach two or more LTHP or LTHR at their respective entrance and exit apertures.

### Custom configurations for specialized applications

Standard Clear Apertures are 1 and 2 inches, but PLX engineers can create a custom LTHP or LTHR for your application. Potential variations include: the flat mirrors inside the LTHP or LTHR can be replaced with beamsplitters; smaller and larger apertures; modified housing and/or interface plate; dielectric mirror coatings for high-powered lasers; and units able to withstand military and space environments.

#### Important Notice

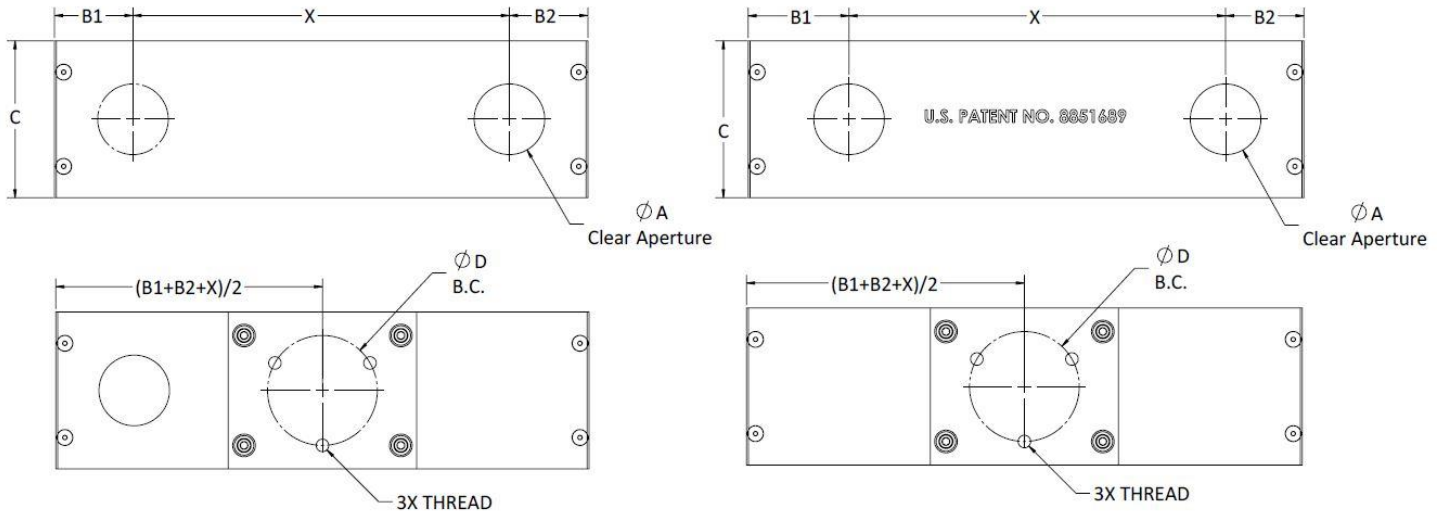
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# Lateral Transfer Hollow Periscope™ - LTHP™

## Lateral Transfer Hollow Retroreflector™ - LTHR™



### Outline Drawings (Left: LTHP; Right: LTHR)



Item	X (in)	ØA (in)	B1 (in)	B2 (in)	C (in)	D (in)	THREAD
P-10	3.5-26	1.13	1.25	1.25	2.50	1.75	¼-20
P-20	3.5-26	2.13	2.00	2.00	4.00	1.75	¼-20
L-10	3.5-26	1.13	1.61	1.25	2.50	1.75	¼-20
L-20	3.5-26	2.13	2.33	2.00	4.00	1.75	¼-20

P-10: Ø1.0" Clear Aperture LTHP; P-20: Ø2.0" Clear Aperture LTHP  
 L-10: Ø1.0" Clear Aperture LTHR; L-20: Ø2.0" Clear Aperture LTHR

### Specifications

Item	Operating Temp(°C)	Storage Temp(°C)	Relative Humidity
P-10, L-10	10 to 40	0 to 50	0-90%
P-20, L-20	10 to 40	0 to 50	0-90%

### Coating Type

SUFFIX	WAVELENGTH RANGE (nm)	AOI 55° PER-SURFACE REFLECTANCE (AVG)
A	400 - 700	93%
B	600 - 1,600	89%
C	225 - 10,000	90%
D	225 - 700	89%
E	450 - 10,000	96%
G	650 - 16,000	97%
H	650 - 20,000	97%
I	400 - 750	87%

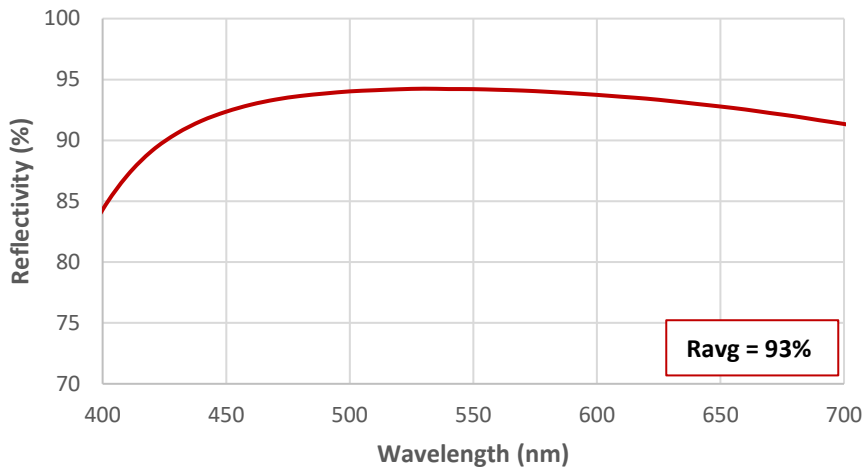
# Lateral Transfer Hollow Periscope™ - LTHP™

## Lateral Transfer Hollow Retroreflector™ - LTHR™

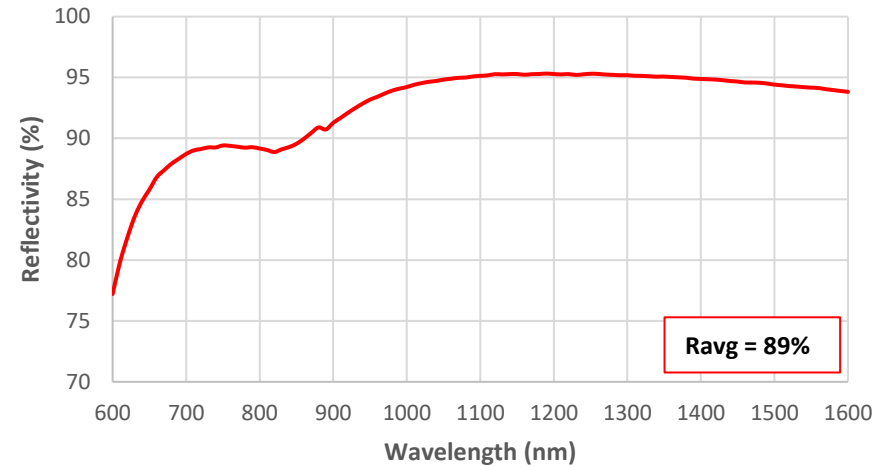
### Coating Curve

AOI 55°

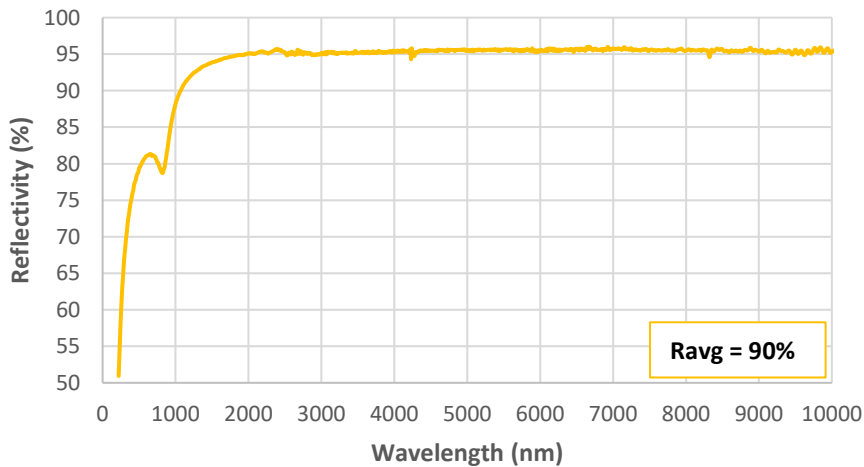
**A - Enhanced Aluminum Coating 400-700 nm**



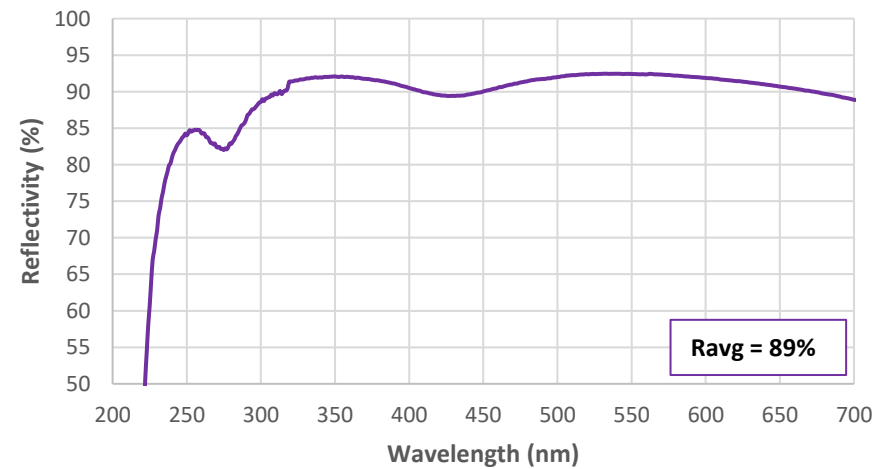
**B - IR Enhanced Aluminum Coating 600-1600 nm**



**C - Unprotected Aluminum Coating 225-10000nm**



**D - UV Enhanced Aluminum Coating 225-700 nm**



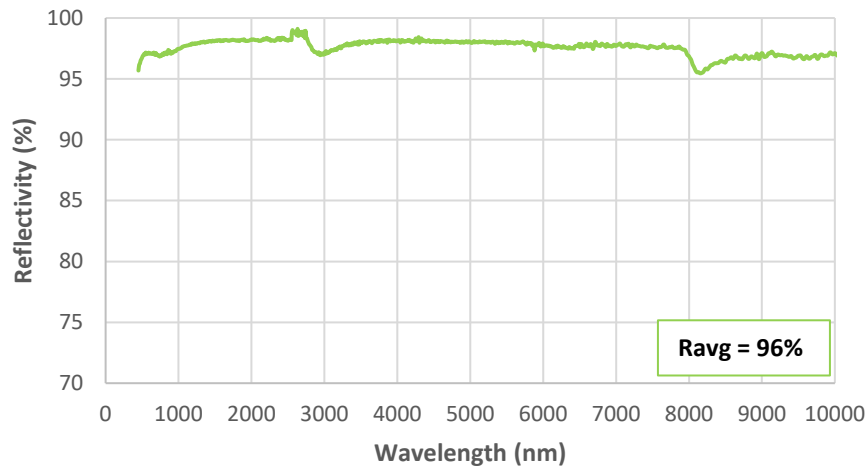
**Note:** Coatings meet Ravg requirement, but coating curves are for reference as R( $\lambda$ ) may vary  $\pm 2\%$  per lot.

# Lateral Transfer Hollow Periscope™ - LTHP™ Lateral Transfer Hollow Retroreflector™ - LTHR™

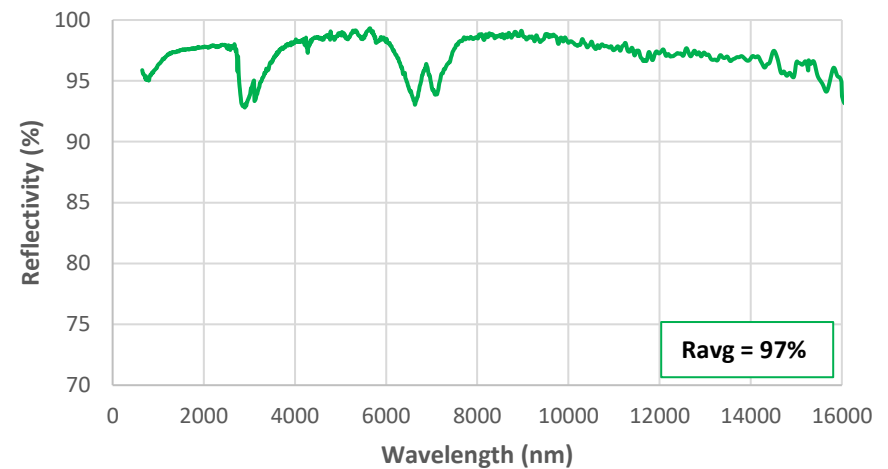
## Coating Curve

AOI 55°

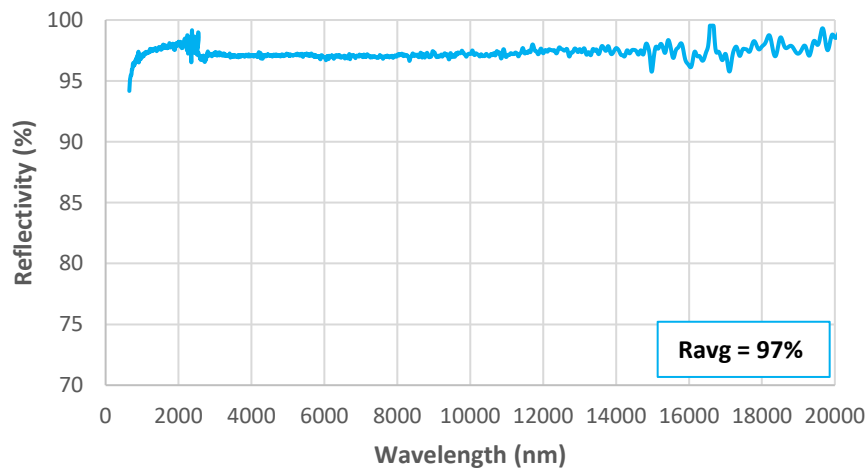
E - Protected Silver Coating 450-10000 nm



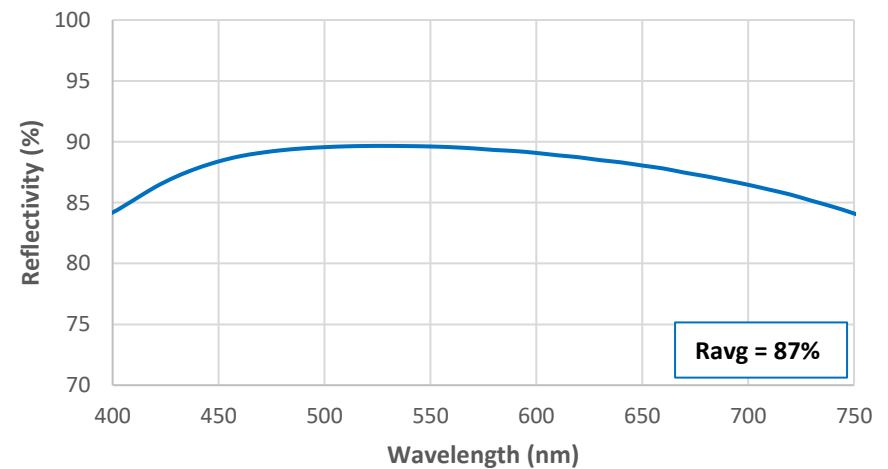
G - Protected Gold Coating 650-16000 nm



H - Unprotected Gold Coating 650-20000 nm



I - Protected Aluminum Coating 400-750 nm



**Note:** Coatings meet Ravg requirement, but coating curves are for reference as  $R(\lambda)$  may vary  $\pm 2\%$  per lot.