

# Laser Hologage LGH – High Resolution, High Accuracy

**Series 542 — Resolution: 0.005μm**

- The Mitutoyo Laser Hologage is a high-end digital gaging system that employs laser beam interference to make highly accurate and repeatable measurements.
- The compact gage head reduces the cost required for assembling the laser scale unit for each device. The head can also contribute to downsizing the entire system. The master gage is the best tool available for measuring tools or for a length measurement sensor of the control unit, as well as for measuring high-precision components.



- High resolution and high accuracy. Highly accurate measurement due to an ultra-high resolution of 0.000005mm (0.005μm), which is close to the performance of laser interferometers.
- Excellent measuring stability. The design is also highly resistant to unfavorable environmental conditions such as air movement and atmospheric pressure changes.
- Low measuring force models are also available. Low measuring force models are available for easily deformed precision workpieces.
- High reliability and excellent durability. High-precision linear ball bearings are used in the spindle guide for extremely smooth movement and exceptional durability.
- 0.005μm resolution LGH is for use with counter EH-102S.

## SPECIFICATIONS

Code No.	542-720A	542-721A
Configuration	Set of 1-axis gage head and display unit	Set of 1-axis gage head and display unit
Measuring range	10mm	
Resolution	0.005μm (.5 microinch)	
Measuring accuracy (20°C)	0.1μm*1	
Repeatability (2σ)	0.02μm	
Retrace error	0.05μm	
Measuring force	Contact point upward	Approx. 0.65N or less
	Contact point horizontal	Approx. 0.55N or less
	Contact point downward	Approx. 0.45N or less
Stylus	ø3mm carbide-tipped (fixing screw: M2.5 (P=0.45)×5), standard contact point No.120058	
Output cable length	2m	
Display range	± 99.999995mm	
Minimum reading	0.01μm	
Operating temperature (humidity) range	15 to 25°C (RH 30-60%, no condensation)	
Storage temperature (humidity) range	-10 to 60°C (RH 20 to 80%, (no condensation)) The temperature and humidity range for storage after unpacking is the same as that for operation.	
Standard accessories	Wrench for contact point: <b>No. 538610</b> AC adapter: <b>No. 357651</b> AC cable (USA): <b>No.02ZAA010*</b>	
Mass (gage head + display unit)	1400g	

\*1: Indication accuracy applies when used with counters.

## Laser Beam Safety Precautions

This system uses a low-power invisible laser beam (780nm) which corresponds to a CLASS 1 (invisible radiation) of IEC60825-1 for measurement. The CLASS 1 laser warning label as shown below is attached to the main unit.

**CLASS 1 LASER PRODUCT**



Refer to Bulletin No. (2263) for more details.



## Optional Accessories

- Laser hologage stand: **No.971750**
- Stem fixture for fixing to top surface: **No.971751**
- Stem fixture for fixing to bottom surface: **No.971752**
- Spindle lifting cable: **No.971753**
- Rubber boot: **No.238772** (spare)

## DIMENSIONS

Unit: mm

