



Press Release

USHIO EUROPE, B.V.

Breguetlaan 53, 1438 BD Oude Meer, The Netherlands

Tel: +31 20 446 9333

Email: info@ushio.euwww.ushio.eu

Ushio releases new 600 mW 405 nm violet laser diodes

Ushio Inc. (Japan) has announced the release of two new violet laser diodes (LDs), [HL40113MG](#) and [HL40115MG](#), emitting a [wavelength](#) of 405 nm.

The latest additions to Ushio's [violet LD](#) product line-up have a continuous wave (CW) optical output power of 600 mW. Although HL40113MG and HL40115MG share characteristics with existing Ushio LDs, they bring several significant areas of improvement. These include wall-plug efficiency (WPE)^[1], slope efficiency^[2], and an extended overall lifetime.

For comparison, HL40113MG and HL40115MG offer a seven point increase in wall-plug efficiency over the existing Ushio LDs HL40063MG and HL40065MG (the WPE values are 28.6% and 21.4%, respectively), further reducing power consumption, and heat dissipation requirements. HL40113MG and HL40115MG also provide an 18% improvement in slope efficiency compared to HL40063MG or HL40065MG, creating advancements for overall system optimisation.

HL40113MG and HL40115MG additionally improve their LD lifetime by 40% in comparison to HL40063MG and HL40065MG. Ushio's persistent development of its laser collection enables longer-lasting, more productive, and more cost-efficient violet laser systems. These specific laser diodes are optimised for applications such as laser direct imaging, including photo-lithography and printed circuit board (PCB) manufacturing, as well as many bio-medical and life science fields.



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Features of HL40113MG and HL40115MG laser diodes

Details

- Optical output power: 600 mW (CW)
- Visible lasing (violet): 405 nm
- Low operating current: 500 mA Typ.
- Low operating voltage: 4.2 V Typ.
- Built-in monitoring photodiode ([HL40115MG only](#))
- Small package: $\phi 5.6$ mm can
- Multiple transverse mode
- TE mode oscillation

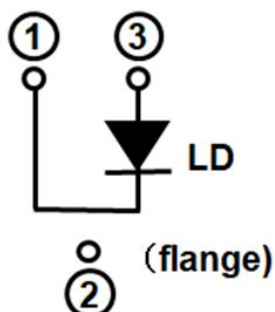
Applications

- Direct imaging
- Measurement
- Bio-medical

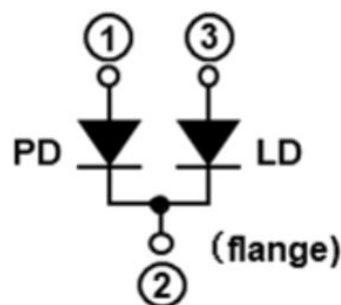
Packaging

- Ushio standard MG (TO-56) package; two internal circuits available

HL40113MG



HL40115MG





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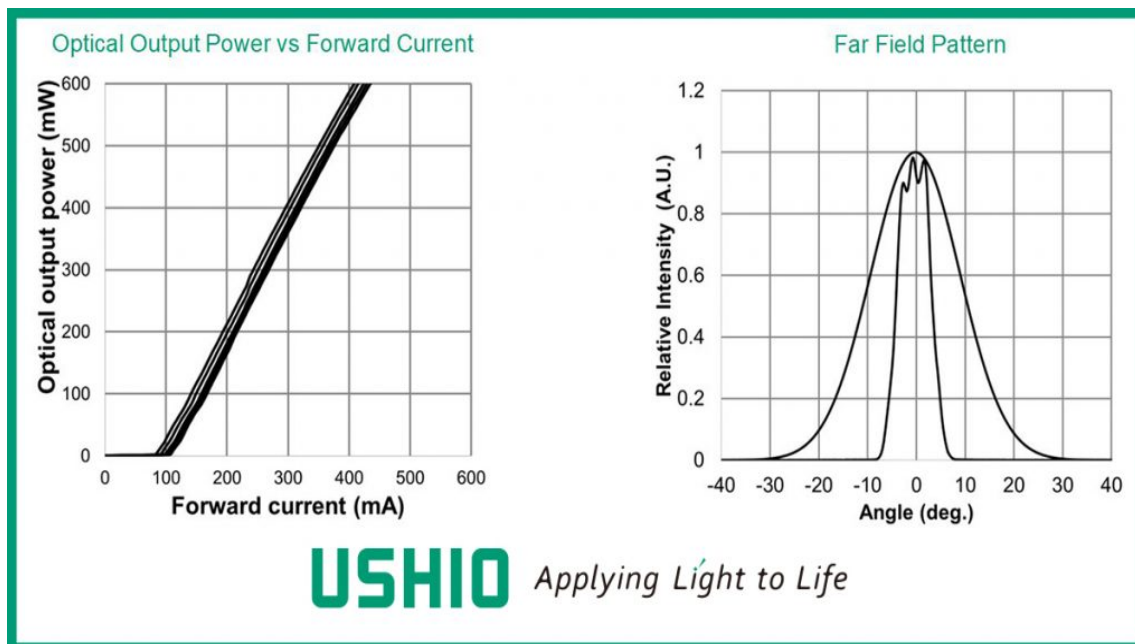
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Contact Ushio Europe to place your violet laser diode orders

Clients located in the EMEA region can receive more information about HL40113MG or HL40115MG by filling in the form on the Ushio Europe [contact page](#).

Download HL40113MG and HL40115MG 405 nm UV laser diode datasheets

[Datasheet: HL40113MG UV LD 405 nm | Ushio Europe B.V.](#)

[Datasheet: HL40115MG UV LD 405 nm | Ushio Europe B.V.](#)

^[1] Wall-plug efficiency (WPE) is the energy conversion efficiency with which the system converts electrical power into optical power.

^[2] Slope efficiency represents the amount of input current used for optical light output power.

Original release: <https://www.ushio.eu/600mw-405nm-violet-uv-laser/>