



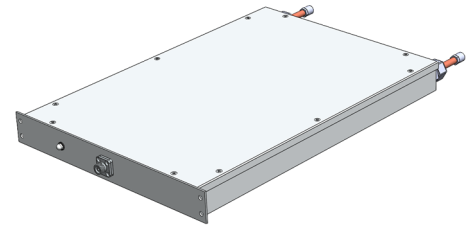
Part No. **NUU103E**

Features

- Typical Optical Output Power: 6W
- Typical Peak Wavelength: 375nm
- Multi-transverse Mode

Specifications

- Bundle-fiber: Outside diameter : 650um (NA=0.22)
- Power supply: DC24V (4.5A)
- Cooling conditions: Coolants : 100% Distilled water
Water temperature (T_w) : 15~20°C
Flow rate : 2 liter / min
Connection : 4 (inner diameter) x 6 (outer diameter) mm Nylon tube



Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Ratings	Unit
Optical Output Power ¹	P _O	Figure 1	W
Forward Current	I _F	4.5	A
LD Drive Current Control Signal	DRV_LD	1.8	V
Storage Temperature	T _{stg}	-40 ~ 70	°C
Ambient Temperature	T _A	18 ~ 28	°C
Humidity ²	-	70	%RH
Airborne Particle Cleanliness ^{3, 4}	-	ISO Class 6	-

¹ The maximum rating provided in Figure 1 should not be exceeded.

As the forward current and/or the operating case temperature become higher, the lifetime of the LD will become shorter.

² No condensation

³ Reference Standard: ISO 14644-1

⁴ Chemical filter(s) must be used.

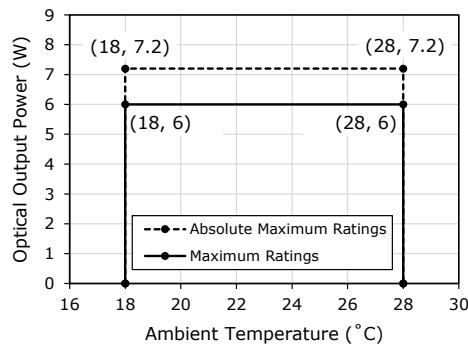


Figure 1. Derating Characteristics

Initial Electrical/Optical Characteristics^{5, 6}

Item	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak Wavelength	λ _p	P _O =6W	370	(375)	380	nm
LD Drive Current Control Signal	DRV_LD	P _O =6W	-	(1.2)	1.5	V

⁵ Characteristics values are values measured under Nichia's measurement conditions/environments; there may be variations for the measurement repeatability/reproducibility of these values. The values in parentheses are for reference purposes only.

⁶ Characteristics at T_w = 20°C and measured in CW mode.

This model is Engineering Sample for evaluation or design purpose only. Life time is not guaranteed. The above specifications are for reference purpose only and subjected to change without prior notice.

NICHIA CORPORATION

◆ HEADQUARTERS

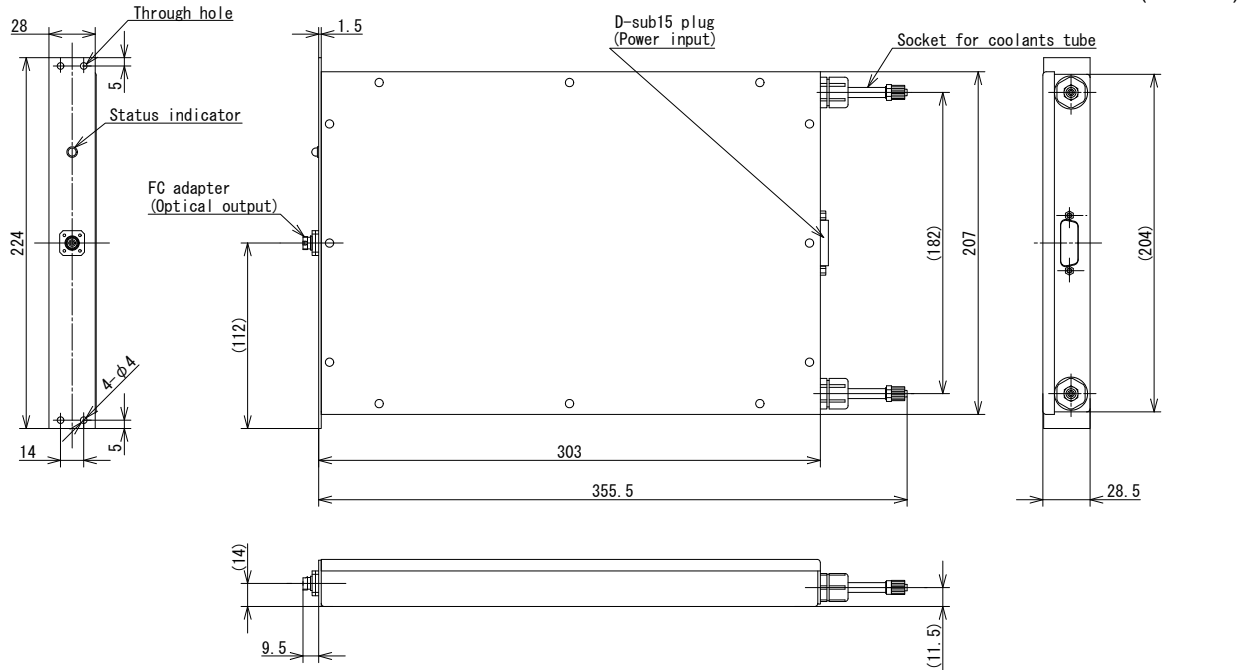
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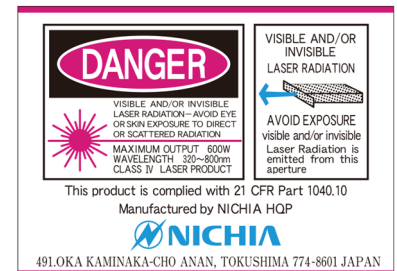
■ Outline Dimension



■ Cautions

(1) Laser Hazard

- This LD Module is a laser diode classified as Class 4 per JIS C 6802, IEC 60825-1, and FDA/CDRH 21 CFR Part 1040.10; this is the most hazardous class. Ensure that the latest editions of IEC 60825-1 and/or applicable standards for general safety requirements and guidance for laser products are complied with.
- There is a risk of serious injury to the skin/eyes if they are exposed to the LD light. Even diffused/reflected light is harmful. It must be ensured that the maximum permissible exposure is not exceeded; use proper safety glasses for the wavelength and optical output power of the LD Module.



(2) Operating method

- The LD Modules may change light output power due to the fluctuation in temperature etc. It has some tendency to gradually increase electric current necessary to keep the output power constant during its operation. When precise optical output control is required, it is recommended to use an external photo diode to monitor output power and use APC (Automatic Power Control) function in the operating circuit.
- When the power supply is turned on or off, the circuit may have issues (e.g. chattering, current spikes, inrush current, etc.) resulting in the Absolute Maximum Rating of the Optical Output Power being exceeded. The circuit must be designed to prevent this from occurring.

(3) Electrostatic Discharges (ESD) and Electrical Surges

- This LD Module is sensitive to transient excessive voltages (e.g. ESD, lightning surge). If this excessive voltage occurs in the circuit, it may cause the LD Module to be damaged causing issues (e.g. the LD Module to become dimmer or not to illuminate). Ensure that when handling the LD Modules, necessary measures are taken to protect them from ESD.

(4) Absolute Maximum Rating

- This LD Module is a semiconductor device that has a high current density during operation in the emission layer. Exceeding the Absolute Maximum Ratings may damage the LD Module. The circuit must be designed to ensure that the Absolute Maximum Ratings (see Absolute Maximum Ratings and Figure 1) are not exceeded even if the LD Modules are operated only for a short period of time.

(5) Miscellaneous

- This LD Module is intended to be used for household appliances and electronic devices (e.g. mobile communication devices) laser diodes have been used in; it is not designed or manufactured for use in applications that require safety critical functions (e.g. automobiles, trains, vessels, aircraft, spacecraft, submarine repeaters, nuclear reactor control systems, traffic control equipment, combustion equipment, life support systems, safety devices, etc.). If the LD Modules are planned to be used for these applications, unless otherwise detailed in the specification, Nichia will neither guarantee that the LD Module is fit for that purpose nor be responsible for any resulting property damage, injuries and/or loss of life/health. This LD Module does not comply with IATF 16949 and is not intended for automotive applications.
- When using this LD Module for the chosen application (e.g. equipment, devices, etc.), design for safety must be considered to ensure that any LD Module failure does not cause any injuries to the human body and/or damage to property. This LD Module can fail at a certain rate. The failure rate and/or failure mode of the LD Module can vary depending on several factors (e.g. circuit, environmental conditions, etc.).
- Without prior written permission from Nichia, the customer will not reverse engineer, disassemble or otherwise attempt to extract knowledge/design information from the LD Module. In the case of any incident that appears not to conform to the foregoing specifications, the local Nichia sales representative should be notified to discuss instructions on how to proceed while ensuring that the LD Module in question is not disassembled.
- Both the customer and Nichia will agree on the official specifications for the supplied LD Modules before any programs are officially launched. Without this agreement in writing (i.e. Customer Specific Specification), changes to the content of this specification may occur without notice (e.g. changes to the foregoing specifications and appearance, discontinuation of the LD Modules, etc.).
- All copyrights and other intellectual property rights in this specification in any form are reserved by Nichia or the right holders who have granted Nichia permission to use the content. Without prior written permission from Nichia, no part of this specification may be reproduced in any form or by any means.