Fundamental characteristics

(1) Optical output vs. forward current
This is the most fundamental characteristic of a laser diode. Fig. 20 shows the optical output vs. forward current curve of the RLD-78MA, and Fig. 21 shows the dependence of threshold current on temperature. As the temperature rises, the threshold current and operating current increase.

(2) Emission spectrum
The emission spectrum of a laser (longitudinal mode) is an important characteristic when actually using the laser. Before using a laser, consideration must be given to the dependence of the wavelength on temperature and the dependence of the emission spectrum on optical output. Fig. 22 shows the dependence of the wavelength of the RLD-78MA on temperature, and Fig. 23 shows the dependence of its emission spectrum on optical output.
(3) Far-field pattern
In addition to the longitudinal mode, lasers have a transverse mode. The optical intensity distribution of the transverse mode appearing at the laser facet is called the near-field pattern, and the optical intensity distribution at a sufficient distance from the facet is called the far-field pattern.

The dependence of the far-field pattern of the RLD-78MA on optical output is shown in Fig. 24. Due to its stable single transverse mode, there are no deviations of peak points or variations in the optical intensity distribution when operating within rated values.

Fig. 24 Far-field pattern
The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to “objective” criteria or an “informed” (by MITI clause) on the basis of “catch all controls for Non-Proliferation of Weapons of Mass Destruction.