

Part Description: MDR-5

Part Number: 10291963

This is a Class 4 laser product in accordance with the IEC 60825-1 Edition 3.0 of 2014-05.

This laser safety datasheet lists the laser and hazard parameters of the emergent laser beam from the product with an assumed ideal Gaussian beam profile. The laser parameters presented here are for under any reasonably foreseeable single fault conditions. The minimum beam diameter and divergence are determined where the radiant exposure (or irradiance) is $1/e^2$ (0.865) times that of the peak radiant exposure (or irradiance). The hazard parameters include the Nominal Ocular Hazard Distance (NOHD), Extended NOHD (ENOHD), Nominal Skin Hazard Distance (NSHD) and the exposure duration, after which time the risk of injury increases. Lastly, it is specified if Laser Eye Protection (LEP) is required and if so, the minimum Optical Density (OD) of the LEP.

1. Laser Parameters

a. Wavelength(s)	1064 nm	1572 nm
b. Lasing media	Nd:YAG	OPO-shifted Nd:YAG
c. Source type	Small	Small
d. Minimum beam diameter	28.09 mm	29.7 mm
e. Minimum beam divergence	250 μ rad	250 μ rad
f. Operation	Pulsed	Pulsed
g. Maximum output	110 mJ	33 mJ
h. Minimum pulse duration	10 ns	6 ns
i. Maximum pulse repetition rate	22 Hz	10 Hz


2. Hazard Parameters

a. Ocular Maximum Permissible Exposure	0.02 J/m ²	10000 J/m ²
• NOHD	16.9 km	0 m
• ENOHD	118 km	830 m
• Exposure duration	1ns	10s
b. Skin Maximum Permissible Exposure	1000 J/m ²	10000 J/m ²
• NSHD	0 m	0 m
• Exposure duration	N/A	N/A

3. Laser Eye Protection

a. LEP required	Yes	No
b. Minimum OD of LEP	4.18	N/A

Approval

System Engineer	Name: <u>Anton Gibhard</u>	Signature: 	Date: <u>2021-12-09</u>
Design Safety Officer	Name: <u>Johan Pelser</u>	Signature: _____	Date: <u>2021-12-09</u>
Laser Safety Officer	Name: <u>Francois Prinsloo</u>	Signature: _____	Date: <u>2021-12=09</u>

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