



Testing Lab No 2682

lasermet
laser safety solutions

Lasermet Limited

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Report Date: 02 November 2012

Test Date: 19 October 2012

Laser Product Classification to IEC/EN 60825-1

REPORT NUMBER: 1414. CEL-71x Microdust.

SUMMARY

The tested product is an aerosol and dust monitoring instrument. The unit contains a laser diode which is collimated, and the light is scattered and focussed onto a photodetector. The radiation from the laser is not externally accessible.

This product series will meet the requirements for Class 1 laser products to IEC/EN 60825-1 (2007) under all operating and single-fault failure conditions when the conditions in Section 7 of this report are met.

1) Product Data

a) Client

Casella Measurement
Regent House
Wolseley Road
Kempston
Bedfordshire
MK42 7JY.



2682
ISO/IEC 17025:2005

b) Manufacturer/Supplier

As above.

c) Product Name(s) / Type Numbers

CEL-71x Microdust. The models vary by software functionality only.

d) Serial Number (if applicable)

Alpha 10.

e) Laser(s)

i) Manufacturer(s) and type details if different from 1 (a)

Opnext HL6354MG-A.

ii) Wavelength(s) (State whether measured or manufacturers data.)

635nm (manufacturer's spec).

iii) Pulsed or continuous

Modulated.

iv) If pulsed (data for each laser):

Manufacturers stated data:

4ms pulses, 125Hz.

Measured data (or reasons for not measuring):

Confirmed.

v) Other relevant data (e.g. beam diameter, beam divergence)

Diameter < 3mm, divergence < 5mrad.

vi) Accessibility of Radiation (Locations for measurements)

The radiation is not externally accessible.

2) Radiation Measurements:

a) Control Settings (give details of settings used to maximize output)

None.

b) Measured Output (give details of limiting aperture etc)

i) Meter(s) used for measurement:

The accessible radiation under service conditions was measured with Lasermet's calibrated ADM1000 power meter.

Lasermet's power and energy meters are regularly cross-checked for calibration against a power meter calibrated by the UK National Physical Laboratory.

ii) Apparent Source size/angular subtense.

Manufacturers data.

None.

Measured.

The beam is a point source.

iii) Measurement Aperture.

7mm under service conditions.

iv) Measurements.

The enclosed output was 143 μ W peak pulse power.

v) Corrections, if any.

None.

c) AEL (give details)

Service only:

Class 3B: 500mW.

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d) Reasonably foreseeable failures (effect of failure in drive circuitry etc.)

Unknown, but will not exceed Class 3B.

e) CONCLUSION (tentative classification)

There is no accessible output, therefore the product is Class 1.

3) Required Accuracy of Measurements, Uncertainties.

Not applicable.

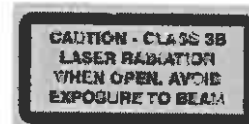
4) Engineering Controls:

None required. The housing can only be removed with the use of tools. The only point of access is too small to incorporate a reflective probe.

5) Labelling:

The unit requires the following labelling:

Protective housing:



A Class 1 label is optional.

6) User Information:

The user information requires the following information:

- A copy of the labels required on the product, including a statement of where each is on the product.
- The output specification of the product.
- The optical output specification of the enclosed source.
- A statement of the laser class of the product.
- A statement of the location of any apertures.
- The statement: "Caution – use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure".

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7) Class Awarded:

Class 1, subject to fulfilling the requirements of sections 5 and 6 of this report.

Conditions (state changes required for full conformity)

This classification is based on the performance of the lasers supplied to us for testing. The manufacturer is responsible for ensuring that the samples supplied are representative and that sufficient quality control during manufacturing is in place to ensure that the classification is valid.

Signature



Robert Wells

Checked



Paul Tozer