

Specifications

General

Particle size:

Suspensions, emulsions, dry powders

Principle:

Laser light scattering

Analysis:

Mie and Fraunhofer scattering

Data acquisition rate:

10 kHz

Typical measurement time:

<10 sec

Dimensions (W, D, H):

690mm x 300mm x 450mm

Weight:

30 kg

Optics

Red light source:

Max. 4mW He-Ne, 632.8nm

Blue light source:

None

Lens arrangement:

Reverse Fourier (convergent beam)

Effective focal length:

300mm

Detector

Arrangement:

Log-spaced array

Angular range:

0.032 - 60 degrees

Alignment:

Automatic

Size

Particle size:

0.1 - 1000 μm *

Number of size classes:

100 (user adjustable)
Accuracy:
Better than 0.6% **
Precision / Repeatability:
Better than 0.5% variation *
Reproducibility:
Better than 1% variation *

System compliance

Laser safety:
Class 1, IEC60825-1:2007 and CFR Chapter I: Sub-chapterJ: Part 1040 (CDRH)
Regulatory testing:
RoHS and WEEE compliant CE / FCC compliant Meets requirements of the European Low Voltage directive

System

Power:
100/240 v, 50/60 Hz 50W (no dispersion units connected) 200W maximum (2 dispersion units connected)
Humidity:
80% maximum for temperatures up to 31°C, decreasing linearly to 50% at 40°C. Non condensing.
Product storage temperature:
-20°C to +50°C
Ingress Protection (IP) rating:
IP41B
Operating temperature (°C):
+5°C to +40°C

Notes

*:
Sample and sample preparation dependent.

**:
Accuracy defined for the recovery of the mean size of a narrow log-normal distribution. Sample and sample preparation dependant.

Patents:
The Mastersizer 3000E optical bench is protected by patent GB2,340,932; together with patents based on applications WO2013038161 and WO2013038159. Hydro MV and LV protected by EP1167946A2 and related filings.