

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:

Max. 10mW LED, 470nm

Lens arrangement:

Reverse Fourier (convergent beam)

Effective focal length:

300mm

Detector

Arrangement:

Log-spaced array

Angular range:

0.015 - 144 degrees

Alignment:

Automatic

Size

Particle size:

0.01 - 3500 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 *

Software

21 CFR part 11:

Enables an operating mode that assists with ER/ES compliance

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.

Operating temperature (°C):

+5°C to +40°C

Product storage temperature:

-20°C to +50°C

Ingress Protection (IP) rating:

IP41B

Notes

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Sample and sample preparation dependent.

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Accuracy defined for the measurement of monomodal latex standards. This specification accounts for the manufacturer's uncertainty in the latex size. Sample and sample preparation dependant.

Patents:

The Mastersizer 3000 optical bench is protected by patents; US6,778,271 and related filings; GB2,340,932; together with patents based on applications WO2013038161, WO2013038160 and WO2013038159. Hydro MV and LV protected by EP1167946A2 and related filings.