DUST AEROSOL GENERATOR MODEL 3410

CONSTANT DOSING OF VARIOUS SORTS OF TEST DUSTS AND POWDERS

The model 3410 Dust Aerosol Generator disperses dry dust and powders for applications that need continuous and stable dosing with high accuracy. These defined test aerosols are commonly used in aerosol science, filter testing, industrial processes, and quality assurance tasks. With the interchangeable dispersing units different materials, e.g. soot, TiO2, cellulose, or ISO 12103 test dust can be provided at different output concentrations. A pressurized cover keeps the material dry even in locations with higher ambient humidity.

The model 3410 comes in two versions (VDI 3491-3). **Model 3410U** is for poor flow powders at low dosing rates. Here the powder is continually poured onto a metal ring where excess material falls off the side and back into the reservoir. The material is then transported to an ejector nozzle with ceramic tube. Shear forces in the ejector nozzle disperse and de-agglomerate particles, e.g. for soot down to 150 nm. The reservoir can be refilled while in operation to accommodate even longer dosing intervals.

Model 3410L is metering powder by a moving toothed belt. The well-defined spaces between the teeth ensure a constant and reproducible supply of powder. The particle concentration of the output aerosol can easily be adjusted over a wide range by changing the speed of the feed belt. The dispersion is again accomplished by an ejector nozzle with ceramic tube. The ceramic tube considerably prolongs the time the nozzle can be used as some powders are quite abrasive. The specially designed reservoir with rotating scraper prevents the compaction of powder due to fill level which would cause uneven powder feed.

Features and Benefits

+ Generation and de-agglomeration of dry particles from 0.2 µm
+ Low (50 mg/m³) to high (160 g/m³) mass concentrations
+ Constant dosing independent of fill level in reservoir
+ Modular design, different feeding and dispersion units available
+ Dry powder generation even in humid environments

Applications

+ Instrument calibration and validation
+ Aerosol research
+ Tracer particles for laser velocimetry LDV, PIV, V3V (seed particles)
+ Inhalation and toxicology studies
+ Filter Testing
+ Dust holding capacity tests
+ Accessory for model 3321 APS often with 3302A diluter
+ Accessory for model 3330 OPS and 3340 Laser Aerosol Spectrometer

SPECIFICATIONS

DUST AEROSOL GENERATOR
MODEL 3410

Model 3410U

Output Concentration Range
50 mg/m³ to 20 g/m³

Output Mass Flow
0.05 g/h to 20 g/h

Aerosol Flow Rate
8 L/min to 35 L/min

Dimensions (H x W x D)
260 x 320 x 400 mm (10.2 x 12.6 x 15.7 in)

Weight
10.4 kg (22.9 lbs)

Model 3410L

Output Concentration Range
0.5 to 160 g/m³

Output Mass Flow
2 g/h to 250 g/h

Aerosol Flow Rate
25 L/min to 67 L/min

Dimensions (H x W x D)
320 x 320 x 400 mm (12.6 x 12.6 x 15.7 in)

Weight
12 kg (26.5 lbs)

Applicable to both Models

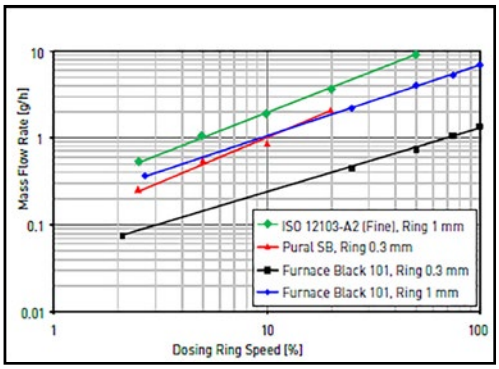
Compressed Air Supply
1 to 6 bar (100 to 600 kPa)

Maximum Overpressure
50 mbar (0.5 kPa)

Particle Size Range
0.2 to >100 µm, dependent on material

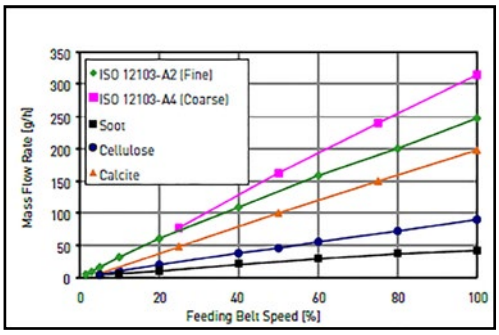
Can be refilled during operation
Yes

Power Requirements
100 to 260 VAC, 50 to 60 Hz



Model 3410U: Mass flow rate vs. dosing ring speed for different powders

Model 3410U



Model 3410L: Mass flow rate vs. feeding belt speed for different powders

Model 3413U: Dust aerosol generator inside full enclosure for difficult powders

TO ORDER

Dust Aerosol Generator

Specify	Description
3410U	Dust Generator for poor flow powders
3410L	Dust Generator for a wide range of powders

Optional Accessories

3012/3012A	Aerosol Neutralizer
3332	Dilution System
3302A	Aerosol Diluter
3413U	3410U with full enclosure
3413L	3410L with full enclosure

Contact us for remote control and other options

WARNING: Dispersed dust may be hazardous. TSI assumes no responsibility for personal injury or property damage due to inappropriate use of these instruments.

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