



## 4.10 DOP High Efficiency Air Supply Outlet



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### Classification

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Purification Equipment

### Product Description

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#### DOP High Efficiency Air Supply Outlet

##### ※Terminology/ What is DOP?

In the context of air filtration, especially HEPA filters, "DOP air outlet" refers to the outlet of a device or system that is being tested using the DOP testing method. DOP stands for Dispersed Oil Particulate, and the testing method is used to verify the integrity of HEPA filters by exposing them to a high concentration of oil particles and measuring the amount that passes through. Essentially, it's a way to ensure that the filter is working as designed, preventing particles from passing through the air outlet.

Here's a more detailed explanation:

##### DOP Testing:

DOP testing is a procedure where a dispersed oil particulate (DOP) aerosol is introduced into the airflow upstream of a HEPA filter.

##### Filter Integrity:

The test checks whether the HEPA filter is functioning correctly and has no leaks or damage.

##### Downstream Measurement:

**A photometer(see pic. below) is used to measure the number of particles in the downstream airflow, which is the air coming out of the filter.**



**Ensuring Compliance:**

**This measurement ensures that the filter meets the required efficiency standards for removing particles of a specific size (typically 0.3 microns).**

**Purpose:**

**DOP testing is crucial in various settings, such as healthcare, cleanrooms, and laboratories, to ensure that the air filtration system is effectively removing harmful particles and meeting air quality standards.**

**Here comes more:**

**DOP testing is the process that verifies HEPA(High Efficiency Particulate Air) or ULPA(Ultra Low Penetration Air) filters are properly installed,that there is absence of bypass leakage of the filter installation,and that the filters are free of leaks and defects(small holes and other damage in the filter medium,frame,seal and leaks in the filter bank framework).**

**The test is performed in the as-built or at-rest state,and is undertaken when commissioning new cleanrooms and clean zones e.g.Laminar Flow Cabinet(LFC),when existing installations require requalification or after filters have been replaced.**

**Test is performed by introducing an aerosol challenge upstream of the filters,then scanning downstream of the filters and support frame,or sampling in a downstream duct. Using an aerosol generator,oil is dispersed into the upstream flow of the filter media,while the number of particles in the downstream flow is measured using a**



photometer. During the test, the whole filter face is tested to ensure that any damage or leak will be detected and located.

For filters with an integrated efficiency of 99.95% or greater, the acceptance criteria described in ISO 14644-3:2019 stated any leak detected in excess of 0.01% of the upstream mass concentration is deemed to exceed the maximum allowable penetration.

It is important to note that DOP testing does not determine the efficiency of the filter medium, this test is performed during the manufacture of HEPA and ULPA filters.

#### **※Product Introduction**

The liquid-tank sealed fine-efficiency air supply outlet is equipped with a replaceable fine-efficiency filter and sealed by jelly-like adhesive. They are widely used in hospitals, biopharmaceuticals, semiconductors, liquid crystal manufacturing, precision machinery, optics and other technical fields.

Surface treated with electrostatic spraying, enabling strong corrosion resistance. The liquid-tank sealing design further enhances its sealing performance.

#### **※Product Features**

1. The liquid-tank air supply outlet achieves sealing by inserting the knife-edge type into the jelly-like adhesive of the liquid-tank filter, avoiding air leakage from the installation gap, and can pass the integrity test of DOP dust generation at one time.
2. Two DOP connectors are installed on the liquid-tank air supply outlet, one for dust generation and one for detection. This enables users to conduct DOP dust generation detection and test the differential pressure of the fine-efficiency filter on the outlet side of a single filter. The hose connected under the quick-disconnect connector leads to the bottom of the outlet body, ensuring a uniform dust concentration upstream of the filter.
3. The rotary pressing block facilitates safe and rapid replacement of the filter; the liquid-tank seal ensures no leakage during filter replacement.

#### **※Size&Data**





Mini pleat fine efficiency air supply outlet	Model	LJ-DCT320-1	LJ-DCT484-1	LJ-DCT610-1
	Box size (W*L*H) (mm)	390*390*380	554*554*380	680*680*380
	Filter size (W*L*H) (mm)	320*320*96	484*484*96	610*610*96
	Flange size (A*B) (mm)	200*200	320*200	400*200
	Rated airflow (m³/h)	500	1000	1500

Besides the size above, custom size acceptable.

Related Products

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