FILTRATION AND ATMOSPHERE MANAGEMENT FOR ADDITIVE MANUFACTURING AND 3D PRINTING

- Fused deposition modeling
- VAT polymerization
- Material jetting
- Directed energy deposition
- Powder bed fusion
- Binder jetting
- Sheet lamination
- Post-processing

METALS | POLYMERS

CONTENTS

3D printing is a rapidly growing industry, with new applications and materials being processed every day. With more affordable solutions on the market, 3D printing is fast becoming part of everyday small scale and mass manufacturing.

The use of an effective atmosphere management and filtration system is an important part of your overall strategy to help protect employee safety and maintain reliability of the equipment to help safeguard the quality.

Our 3D PrintPRO and AM ranges have been developed specifically for the 3D printing and additive manufacturing markets, applying our 35 years of experience designing, developing and manufacturing cutting-edge portable fume extraction systems for a range of industries. We work with customers to understand individual requirements and help ensure you have the most appropriate system for your process.

FOR MORE INFORMATION

Speak to our knowledgeable team today!

Email. bofasalesus@donaldson.com
Tel. +1 (618) 205 5007
Web. bofainternational.com/us

'Print your own' connectors

- for small to medium format 3D printers

Don't have a way to connect your extractor to your 3D printer? The print your own connector files are **free of charge** and available from our website - **bofainternational.com/us/print-your-own**

There are five different sizes available with a choice of adhesive or bolted options.

Spigot sizes:	50 / 75 mm
Axial fan sizes:	60 / 70 / 92 / 120 mm

60 mm – 50 mm
70 mm – 50 mm
92 mm – 50 mm
92 mm – 75 mm
120 mm – 50 mm
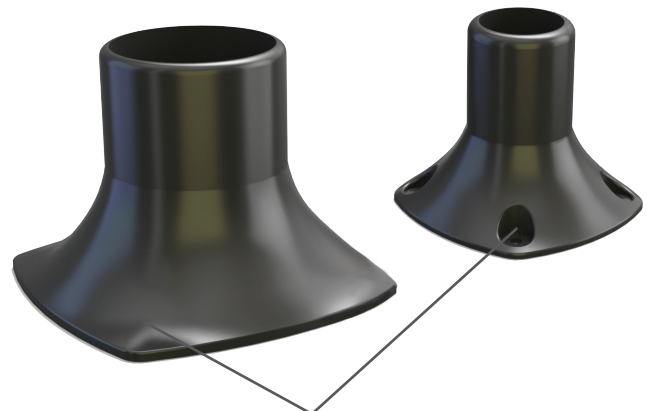120 mm – 75 mm

Connected to 3D printer

Hose connected to fume extractor

75mm	50mm	

For connection types not shown here, contact us.
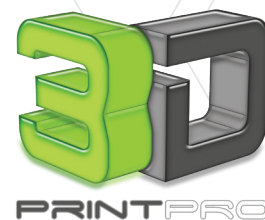
Designed with or without screw holes

bofainternational.com/us/print-your-own

3D PrintPRO 2
filtration and atmosphere management system
- for small format 3D printers (build volume < 0.03m^3)

Suitable for: FDM; SLA; DLP

Filters fume	✓ Filtered air, environment and printer chamber ✓ Helps protect people and equipment ✓ Reduces odor
Long filter life	✓ Maximum uptime
HEPA filter status indicator	✓ Accurate and timely filter changes
Remote start / stop	✓ Integrated to turn on / off with host unit
Moves air	✓ Ability to help manage heat
Low noise	✓ Less aural disruption
Compact and lightweight	✓ Easy to maneuver ✓ Small footprint
Simple set up	✓ Quick, intuitive installation
Universal voltage	✓ Single part number for global use
Detachable power lead	✓ Easy part set up for multiple locations

Dimensions	12.99 x 11.42 x 10.63"
Airflow	26cfm / 9mbar
Approvals	CE and UKCA

3D PrintPRO 3
filtration and atmosphere management system
- for medium sized 3D printers (0.03m^3 < build volume < 0.2m^3)

Suitable for: FDM; SLA; DLP; material jetting

Filters fume *	✓ Filtered air, environment and printer chamber ✓ Helps protect people and equipment ✓ Reduces odor
Long filter life	✓ Maximum uptime
HEPA filter status indicator	✓ Accurate and timely filter changes
Remote start / stop	✓ Integrated to turn on / off with host unit
Variable air movement (speed control)	✓ Ability to help manage heat ✓ Better part quality ✓ Adjust to fit ideal flow rate ✓ Adjust to change settings between processes
Low noise	✓ Less aural disruption
Compact and lightweight	✓ Easy to maneuver ✓ Small footprint
Simple set up	✓ Quick, intuitive installation
Universal voltage	✓ Single part number for global use
Detachable power lead	✓ Easy part set up for multiple locations

Dimensions	15.75 x 11.42 x 11.81"
Airflow	88cfm / 18mbar
Approvals	CE and UKCA (available with UL** approval: 3D PrintPRO 3+)

* Supplied with connection hoses and print your own plenum instructions.

** Tested to UL and cUL standards, but testing may be provided by alternate nationally recognized test laboratories. Certain product configurations may affect the UL certification. Please speak to your sales representative.

3D PrintPRO 4

filtration and atmosphere management system

- premium system for large scale 3D printers; print farms with multiple 3D printers within a cabinet (build volume > 0.2m³)

Suitable for: FDM; SLA; DLP; material jetting

Filters fume	✓ Filtered air, environment and printer chamber ✓ Helps protect people and equipment ✓ Reduces odor
Extra long filter life	✓ Large carbon bed ✓ Maximum uptime
HEPA and optional gas filter status indicator	✓ Accurate and timely filter changes
Optional remote start / stop	✓ Integrated to turn on / off with host unit
Variable air movement (speed control)	✓ Ability to help manage heat ✓ Better part quality ✓ Adjust to fit ideal flow rate ✓ Adjust to change settings between processes
Override switch	✓ Extractor can operate without host machine ✓ Easier to test unit function
Low noise	✓ Less aural disruption
Compact	✓ Small footprint
Lockable castors	✓ Easy to maneuver
Simple set up	✓ Quick, intuitive installation
Universal voltage	✓ Single part number for global use
Detachable power lead	✓ Easy part set up for multiple locations

Dimensions	24.61 x 15.16 x 20.67"
Airflow	159cfm / 96mbar
Approvals	CE and UKCA | cUL | UL**

** Tested to UL and cUL standards, but testing may be provided by alternate nationally recognized test laboratories. Certain product configurations may affect the UL certification. Please speak to your sales representative.

AD 350

filtration and atmosphere management system
- for print farms with multiple 3D printers within a cabinet

AD

Suitable for: Versatile for large scale 3D printers; printing farms

Filters fume	✓ Filtered air, environment and printer chamber ✓ Helps protect people and equipment ✓ Reduces odor
Long filter life	✓ Increased uptime
HEPA filter and optional gas status indicator	✓ Accurate and timely filter changes
Optional remote start / stop	✓ Integrated to turn on / off with host unit
Variable air movement (speed control)	✓ Ability to help manage heat ✓ Better part quality ✓ Adjust to fit ideal flow rate ✓ Adjust to change settings between processes
Compact	✓ Small footprint
Simple set up	✓ Quick, intuitive installation
Universal voltage	✓ Single part number for global use
Detachable power lead	✓ Easy part set up for multiple locations

Dimensions	23.23 x 15.94 x 18.31"
Airflow	223cfm / 96mbar
Approvals	CE and UKCA | cUL | UL**

AD Oracle SA iQ

filtration and atmosphere management system
- for large scale production processes

Suitable for: Material jetting; binder jetting; SLM and PBF of polymers

Filters fume	✓ Filtered chamber environment and clean laser lens ✓ Higher quality process ✓ Helps protect people and equipment
Long filter life	✓ Maximum uptime ✓ Less disruption
Flow control	✓ Adjust to fit ideal flow rate ✓ Constant flow, despite filter saturation ✓ Airflow measured and displayed ✓ Better part quality
System status indicator	✓ System alarms shown on screen / through signal wires ✓ Easy identification of extraction problems ✓ Easy download of log file to assess issues
Filter status indicator	✓ Accurate and timely filter changes
Remote start / stop	✓ Integrated to turn on / off with host unit
HEPA and gas filter status indicator	✓ Accurate and timely filter changes
Override switch	✓ Extractor can operate without host machine ✓ Easier to test unit function
Low noise	✓ Less aural disruption
Compact	✓ Small footprint
Lockable castors	✓ Easy to maneuver
Simple set up	✓ Quick, intuitive installation
Universal voltage	✓ Single part number for global use
Detachable power lead	✓ Easy part set up for multiple locations
Optional Cyclone inline filter	✓ Extends filter life and extraction performance

Dimensions	29.33 x 17.72 x 20.28"
Airflow	223cfm / 96mbar
Approvals	CE and UKCA | cUL | UL**

** Tested to UL and cUL standards, but testing may be provided by alternate nationally recognized test laboratories. Certain product configurations may affect the UL certification. Please speak to your sales representative.

AM 400

- for inert particulate filtration - powder bed fusion processes

AM ADDITIVE MANUFACTURING

Suitable for: Inert atmosphere powder bed processes

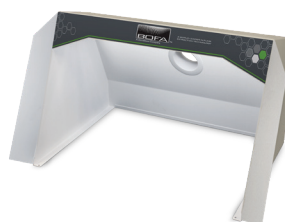**Inert filtration**

Remote isolated ergonomic filter housing	✓ Filter kept under inert conditions when housing removed ✓ Ability to move un-processed filter to remote, safe area for passivation ✓ Easy to move and use
Filters fume	✓ Clean chamber environment and laser lens ✓ Higher quality process ✓ Helps protect people and equipment
Long filter life	✓ Maximum uptime ✓ Less disruption
Low leakage	✓ Less oxygen ingress ✓ Higher quality of printed parts ✓ Less inert gas loss
Quick filter change	✓ Reduced time to change filter
Flow control	✓ Adjust to fit ideal flow rate ✓ Constant flow, despite filter saturation ✓ Airflow measured and displayed
System status indicator	✓ System alarms shown on screen / through signal wires ✓ Easy identification of extraction problems ✓ Easy download of log file to assess issues
Filter status indicator	✓ Accurate and timely filter changes
Remote start / stop	✓ Integrated to turn on / off with host unit
Easy to clean internals	✓ Enables complete and thorough cleaning of gas path
High performance pump	✓ Able to overcome complicated installations ✓ Consistent high volume flow
Lockable castors	✓ Easy to maneuver

Dimensions	31.10 x 33.74 x 65.75"
Airflow	224cfm / 250mbar
Approvals	CE and UKCA

Post-processing

Dusts and powders from mechanical finishing, solvents (IPA) from vapor finishing and support material removal

FumeCAB 250
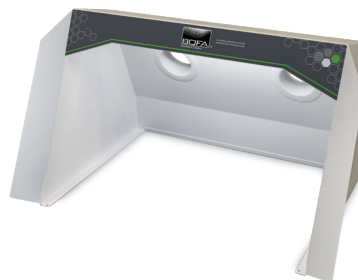**filtration and atmosphere management cabinet system**

A small but versatile fume cabinet which can be used for an array of 3D printing / AM post-processing applications.

Partial enclosures are steadily becoming the preferred option for greater protection on processes that produce potentially harmful fumes.

Suitable for manual post-processing of parts from AM processes.

bofainternational.com/fumecab-250

Dimensions	1.42 x 15.75 x 11.81" (290 x 400 x 300mm)
Opening dimensions	10.4 x 15.7" (265 x 400mm)

FumeCAB 600
filtration and atmosphere management cabinet system

Providing a larger working area with higher airflow for use in 3D printing / AM applications, the FumeCAB 600 boasts the same features as the FumeCAB 250 and works alongside the DustPRO 400 extraction system to help protect the operator and process.

Suitable for manual post-processing of parts from AM processes.

bofainternational.com/fumecab-600

Dimensions	13.98 x 24.02 x 16.54" (355 x 610 x 420mm)
Opening dimensions	12.4 x 21.3" (315 x 540mm)

FumeCAB 700
filtration and atmosphere management cabinet system

Suitable as a post-processing filtration and atmosphere management system. This is an all-in-one enclosure with three levels of filtration and integrated LED lighting.

Suitable for manual post-processing of parts from AM processes and filtering off-gassing from washing and curing baths.

bofainternational.com/fumecab-700

Dimensions	30.71 x 27.56 x 19.29" (780 x 700 x 490mm)
Opening dimensions	26 x 8.8" (675 x 225mm)

FumeCAB 1000 iQ
filtration and atmosphere management cabinet system

Suitable as a post-processing filtration and atmosphere management system with a large working area. This all-in-one enclosure has three levels of filtration, integrated LED lighting and BOFA's Intelligent Operating System (iQ).

Suitable for manual post-processing of parts from AM processes and filtering off-gassing from washing and curing baths.

bofainternational.com/fumecab-1000-iq

Dimensions	39.49 x 39.37 x 25.79" (1003 x 1000 x 655mm)
Opening dimensions	11.2 x 39.4 x 25.6" (285 x 1000 x 650mm)

DustPRO 400
filtration and atmosphere management system

This filtration and atmosphere management system fits perfectly with the smaller FumeCABs and is compact enough to fit under a desk. It can also be used on its own with two arm connections and accessories.

Suitable for manual post-processing of parts from AM processes.

bofainternational.com/dustpro-400

Dimensions	23.62 x 11.42 x 10.63" (600 x 290 x 270mm)
Airflow / Pressure	235cfm / 96mbar (380m³/hr / 96mbar)

AD Oracle SA iQ
filtration and atmosphere management system

A compact filtration and atmosphere management system designed for multiple smaller FumeCABs / accessories or a larger 3D system.

Suitable for automated post-processing of parts from AM processes and filtering gases and particles from automatic finishing stations.

bofainternational.com/ad-oracle-sa-iq

Dimensions	29.33 x 17.72 x 20.28" (740 x 450 x 515mm)
Airflow / Pressure	223cfm / 96mbar (380m³/hr / 96mbar)

3D accessories
bofainternational.com/3d-accessories

WHICH PRODUCT IS MOST APPROPRIATE FOR YOU?

FILTRATION AND ATMOSPHERE MANAGEMENT SYSTEMS	APPLICATION					
	METAL BINDER JETTING / POWDER BED FUSION / DIRECT METAL LASER SINTERING / SELECTIVE LASER MELTING POLYMERS	FUSED DEPOSITION MODELING (FDM)	VAT POLYMERIZATION (SLA / DLP)	MATERIAL JETTING	POLYMER BINDER JETTING	POST-PROCESS
3D PrintPRO 2		✓	✓			
3D PrintPRO 3		✓	✓	✓		
3D PrintPRO 4		✓	✓	✓	✓	
AM 400	✓					
AD 350		✓	✓			
AD Oracle SA iQ	✓*			✓	✓	✓
DustPRO 400						✓
FumeCAB 250						✓
FumeCAB 600						✓
FumeCAB 700						✓
FumeCAB 1000 iQ						✓

* When enclosed.

We have 35 years' experience designing, developing and manufacturing fume extraction for a wide range of industries and applications, including laser, electronics, 3D printing and additive manufacturing, printing, dental and pharmaceutical. Speak to us today to discuss which BOFA products are most appropriate for your process.

Don't see what you need?

The 3D printing and additive manufacturing industry is moving at a rapid pace with new materials and processes being tested and implemented all the time.

We already work with companies to create personalized and bespoke systems, whether they are stand-alone; ride on; or integrated systems.

Work with BOFA to create the perfect system for you.

BOFA™
A Donaldson Company

**A WORLD LEADER IN FUME
EXTRACTION TECHNOLOGY**

For further information, please contact us

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