

**TCTECORA®**  
POLLUTION CHECK

tcr-tecora.com



# IMP8

## ACI 8 Stage

ANDERSEN CASCADE IMPACTOR



tcr-tecora.com



Made in Italy



OUTDOOR  
AIR QUALITY



LABORATORY



OUTDOOR  
AIR QUALITY



LABORATORY

# IMP8

8 STAGE ANDERSEN CASCADE IMPACTOR

## Applications

- ✓ Pharmaceutical Production
- ✓ Air Quality Studies
- ✓ Filter and Clean Rooms Efficiency
- ✓ Healthcare
- ✓ Food
- ✓ Cosmetics
- ✓ Defense & Military Sector

**MDI - Metered Dose Inhalers; DPI Dry Powder Inhaler**

## Aerodynamic particle sizing

The design concept of the Andersen Cascade Impactor evolves from the following information:

The human respiratory system tract is an aerodynamic classifying system for airborne particles. A sampling device can be used as a substitute for the respiratory tract as a collector of airborne particles, and as such, it shall reproduce to a reasonable degree the lung penetration by these particles.

The IMP-8, 8 Stage "Andersen type" Cascade Impactor ACI, with 400-201-96 small round jets per stage meets all the criteria for the efficient collection of airborne particles.

Produced with  
**AISI 316**



The 8 Stage ACI works at a standard constant flowrate of 28,3 L min<sup>-1</sup>, with particle cut size in the range from 0,4 to 9,0 µm.

Dry Powder Inhaler (DPI) testing requires to achieve a high pressure drop through the sampler (4 kPa), so that a higher flowrate than 28,3 L min<sup>-1</sup> is needed.

Conversion kits for 60 L min<sup>-1</sup> and 90 L min<sup>-1</sup> allow the standard 28.3 L min<sup>-1</sup> impactor to be upgraded to the higher flowrates for DPI and MDI Applications.

ACI - Conversion Kit @ 60L min <sup>-1</sup>		ACI - Conversion Kit @ 90L min <sup>-1</sup>	
Stage #	Cut Size (D <sub>50</sub> ) µm	Stage #	Cut Size (D <sub>50</sub> ) µm
-1	8,6	-2	8,0
0	6,5	-1	6,5
1	4,4	0	5,2
2	3,3	1	3,5
3	2,0	2	2,6
4	1,1	3	1,7
5	0,54	4	1,0
6	0,25	5	0,43

# IMP8

## 8 STAGE ANDERSEN CASCADE IMPACTOR

### Cascade Impactors-Impaction surfaces

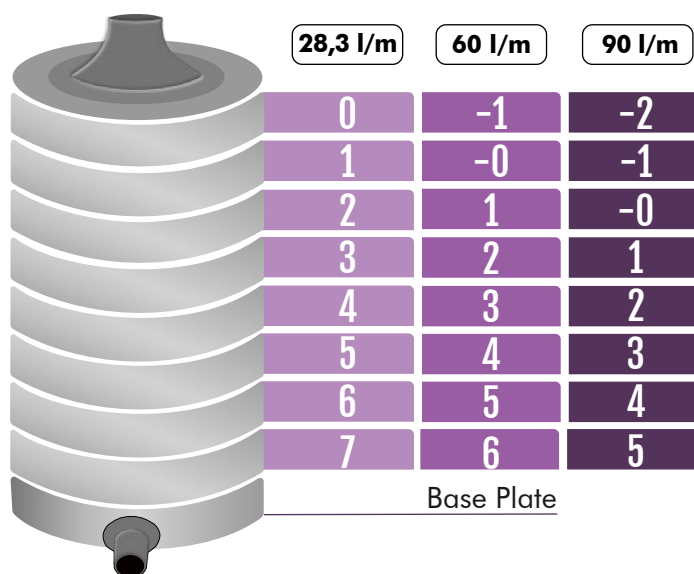
Cascade impactors are multi-jet, multistage devices operating at constant flowrates that allow the characterization of an aerosol in terms of its particle size distribution.

Different impaction surfaces can be used to collect the airborne particles on the impaction stages, and the features of the impaction surfaces depend on the analytical needs. Glass dishes, stainless steel plates, glass-fiber/quartz filter and other membranes are mostly used. Glass dishes (used for optical analysis) and stainless steel plates are used in DPI and MDI applications to test inhalation suspensions and spray. Glass-fiber filters are commonly used for gravimetric analysis because they are lighter and less hygroscopic. Other types of filters (quartz, PTFE, polycarbonate membrane..) can be used for chemical speciation and physical characterization of the sampled particles.

### Main Features:

- Aerodynamic particle sizing
- Sampling flow: 28,3 L / min<sup>-1</sup>
- Conversion Kit: 60 L / min<sup>-1</sup>; 90 L / min<sup>-1</sup>;
- Material: Aisi / Aluminium (on request)
- Height: 256mm
- Diameter: 105mm
- Weight: 3,5 Kg (Aisi) - 1,55Kg (Aluminium)
- Carrying case
- Dimensional Inspection Certificate

### Stages



### Single Stage Impactor

The Single Stage Impactor consists of a single state with 400 precision machined jet orifices. When the air is drawn through the sampler, multiple jets of air direct any airborne particles onto the surface of the collection plate.

Impactor is comprised of an inlet cone, a jet stage and a base plate that is held together by three spring action retainer clamps and sealed with o-ring gaskets.

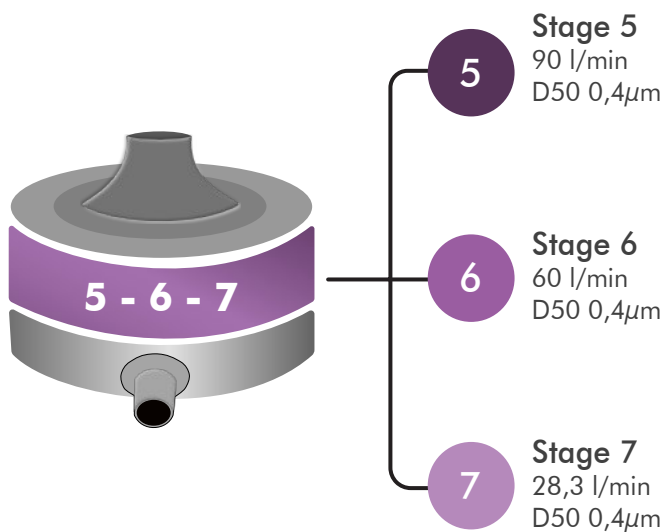
The spring action retainer clamps allow for easy disassembly and cleaning.

An optional carrying case is available and will accommodate the impactor and Petri dishes as well as the vacuum pump.





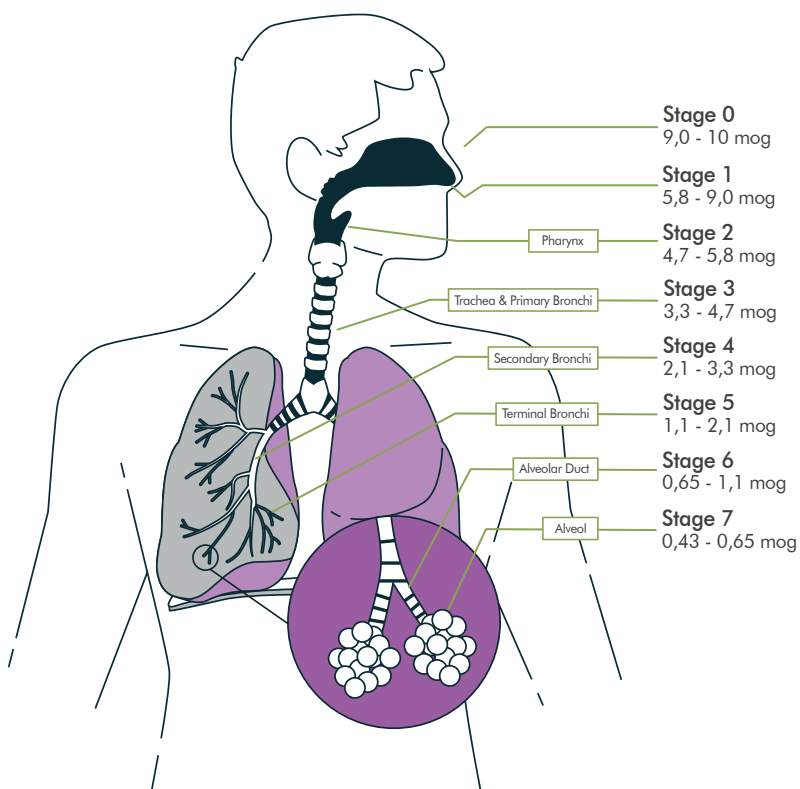
## Single Stage Impactor



## 8 Stage Impactor for Testing of MDIs

The results of characterizations using cascade impaction techniques are additionally used for the determination of fine particle fraction or fine particle dose which may be correlated to the dose or fraction of the drug that penetrates to the lung during inhalation by a patient.

8-stage impactors are specifically designed to meet the highest criteria laid down in the various Pharmacopoeia (European Pharmacopoeia Chapter 29.9.18 for characterizing aerosol clouds emitted by inhalers).



By analyzing the drug deposited on the individual stages and the final filter, the Fine Particle Fraction, the Fine Particle Dose, the Mass Median Aerodynamic Diameter (MMAD) can all be calculated.

The standard device with the inclusion of the Induction Port, a compatible mouth-piece adaptor and a suitable pump calibrated to the required flowrate (28.3 lpm) with the impactor in place and shown to be leak tight can be used without modification to characterize the inhaler output.

## Accessories



**Kit of Stainless Steel Disks**  
AC99-120-0016SP

*\*Available PTFE / Glass for Chemical Analysis on request.*

# BRAVO X H BIO

## Bravo X H BIO Sampler

Bravo X H Bio has Hepa Filters in order to protect the environment and for security of the operator.

It is a standard sampling pump, with an automatic flow control and touch screen 3.5 ".

Data is saved and can be downloaded using usb flash drive.

Bravo Bio has a wide range of flow regulation from few l/min till 120 l/min (no external connection).



**Bravo X H BIO**  
AA99-000-0744SP

## Product Codes

Product	Code
8 Stage Cascade Impactor (IMP-8)	AC99-120-0020SP
Conversion KIT 28.3/l to 60/l	AC99-120-0027SP
Conversion KIT 28.3/l to 90/l	AC99-120-0029SP
Conversion KIT 60/l to 90/l	AC99-120-0028SP
BRAVO X H BIO Sampler	AA99-000-0744SP