



*Downflow Booths*



# **Telstar** ACE *Downflow Booths*

## ***Highest operator protection***

The TELSTAR ACE downflow booth provides the highest levels of operator protection from potentially harmful airborne contaminants generated during manual powder handling operations such as sampling, charging and dispensing.

Achieving Operator Exposure Levels (OEL) typically between 50 and 100 $\mu\text{g}/\text{m}^3$  TWA the booth also provides product protection (Class ISO 5) from surrounding area contamination by creating a clean processing zone minimizing cross contamination risk from other products/processes. Lower levels of containment (10 $\mu\text{g}/\text{m}^3$ ) can be achieved by utilizing purpose designed workstations and containment screens.

TELSTAR ACE downflow booths are available in "compact" or "modular" construction in powder coated carbon steel, 304L/316L stainless steel or a combination of both. With a variety of standard dimensions (height, width and safe working depths) our booths can also be custom engineered to any size.



The downflow booth operates on a recirculatory push-pull airflow principle providing containment by air movement. A clean, constant, turbulence free, laminar downflow of air is supplied from the ceiling, suppressing any dust clouds generated during open powder processing, removing and capturing airborne particles from the operator's breathing zone.

Exhaust air grilles at the base of the rear wall capture the airborne contaminants generated. The exhaust airflow then passes through a series of filtration stages before returning through the booth ceiling plenum. A small percentage of air is discharged from the booth through the bleed exhaust port to maintain the working space under negative pressure, minimizing airborne contamination breakout.

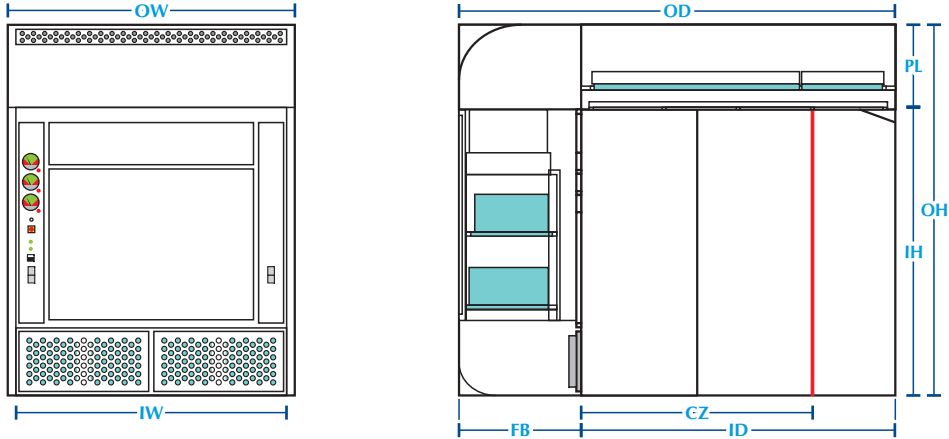
The common advantages of containment by airflow systems are:

- Unrestricted operator access to the target operation (i.e. no physical impediment offered by the containment equipment).
- Flexibility to handle a large range of container types (i.e. fibre kegs, bags, IBC's, etc.).
- Capability to integrate additional process equipment.

***Downflow booth  
working principle***

# Technical details

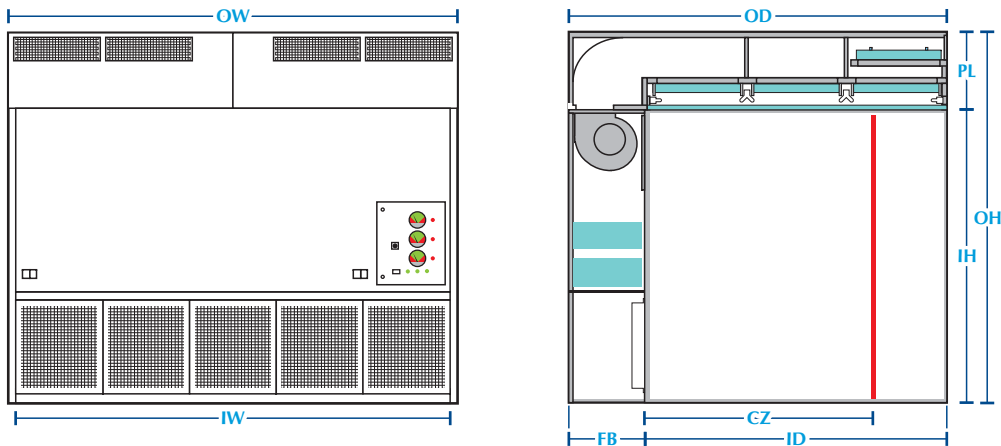
## Modular design



FEATURE		MDFB 1500	MDFB 2000	MDFB 2500	MDFB 3000	MDFB 4000	MDFB 5000
Dimensions (mm)	OW	1590	2060	2530	3180	4120	5060
	OD*	3720	3720	3720	3720	3720	3720
	OH	2850	2850	2850	2850	2850	2850
	IW	1490	1960	2430	3080	4020	4960
	ID*	2720	2720	2720	2720	2720	2720
	IH	2300	2300	2300	2300	2300	2300
	CZ*	1800	1800	1800	1800	1800	1800
	PL	550	550	550	550	550	550
	FB	1000	1000	1000	1000	1000	1000

Also available with the containment zone (CZ) of 1400 mm (\*dimensions change)

## Compact design



FEATURE		CDFB 1350		CDFB 1600		CDFB 1950		CDFB 2600		CDFB 3000	
		I	II	I	II	I	II	I	II	I	II
Dimensions (mm)	OW	1325		1630		1935		2565		3175	
	OD*	1900		2530	2710	2530	2710	2530	2710	2530	2710
	OH	2650		2650		2650		2650		2650	
	IW	1235		1540		1845		2475		3085	
	ID*	1350	1450	1980	2160	1980	2160	1980	2160	1980	2160
	IH	2100		2100		2100		2100		2100	
	CZ*	900	950	1350	1450	1350	1450	1350	1450	1350	1450
	PL	550		550		550		550		550	
	FB	550	450	550		550		550		550	

Also available with the containment zone (CZ) of 1800 mm (\*dimensions change)

I: Micro-perforated SS air distribution screen II: PLF air distribution screen

## ***Modular design downflow booths***

TELSTAR ACE modular solutions allow the designer to fully integrate the downflow booth to the facility architecture giving a high degree of flexibility and integration appeal.

The booths are available in a series of standard widths and depths however the design of these systems enables them to be customized to suit almost any footprint.

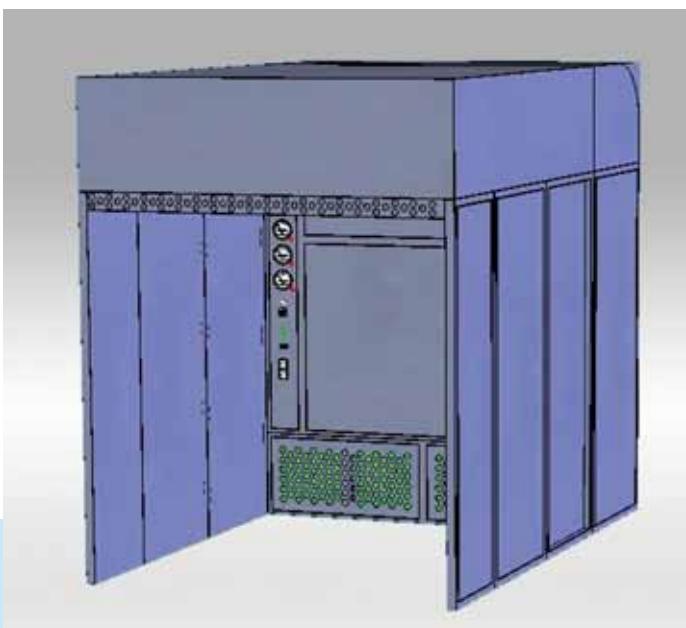
### ***Operating conditions***

- Laminar flow velocity: 0,35 - 0,5 m/s (70 - 98 fpm)
- Bleed air: 5-10%
- Containment zone: 1,4m (4,6') or 1,8m (5,9')
- Light intensity: > 650 lux
- Voltages:
  - 230V Iph + E / 50Hz
  - 400V IIIph + E + N / 50Hz
  - 208V IIIph + E / 60 Hz
  - 480V IIIph + E / 60Hz
  - Other voltages available under request

### ***Standard Feature***

- Available in epoxy coated mild steel, 304L / 316L stainless steel or a combination of both
- Triple Stage filtration
  - Pre-filter
  - Fine dust pre-filter
  - HEPA filter
- Air distribution screens
- Re-circulation or Single Pass systems available
- On board Lighting
- Closed loop system

***Modular SS 304 recirculation downflow booth***



***Leaders in customizing fully integrated systems***

## Compact design downflow booths

TELSTAR ACE stand alone downflow booths are the optimal solution when it is required to install the equipment within an existing facility or location.

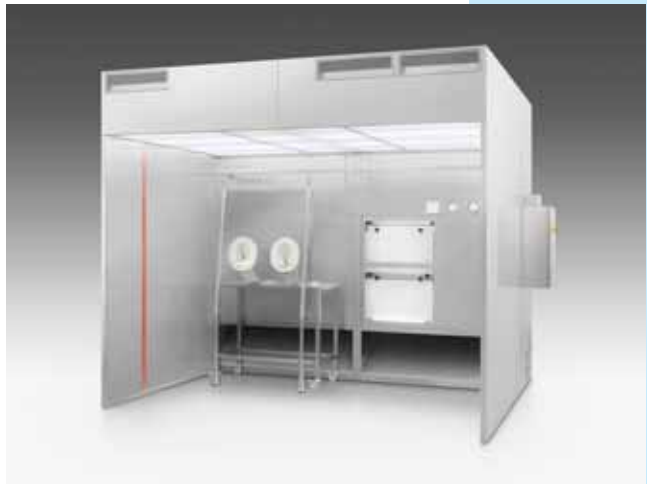
Many of our systems can be powered by a single point connection or for XP environments, can be set up with full or partial explosion proof electrics.

### Operating condition

- Laminar flow velocity: 0,35 - 0,5 m/s (70 - 98 fpm).
- Bleed air: 5-10%.
- Containment zone: 1,4m (4,6') or 1,8m (5,9').
- Light intensity: > 650 lux.
- Voltages:
  - 230V Iph + E / 50Hz.
  - 400V IIIph + E + N / 50Hz.
  - 208V IIIph + E / 60 Hz.
  - 480V IIIph + E / 60Hz.
  - Other voltages available under request.

### Standard features

- Stainless steel AISI 304L/316L or epoxy coated carbon steel frame.
- PVC strip curtains or double skin side panels.
- Three main filtration stages: Pre-filter, fine dust pre-filter and HEPA filter.
- Filter replacement at the rear technical area or from the working area (Internal access).
- Air distribution screens.
- Pre-filter pressure gauge (optional).
- HEPA filter pressure gauge.
- Control board with main switch, fan and light switch.



*Compact recirculation downflow booth epoxy coated*

*Compact SS 304 recirculation downflow booth installed inside the warehouse*



## Options and accessories

A complete range of alternatives, accessories, and options allows for a wide range of configurations to suit any containment application.

- Stainless steel AISI 316L frame.
- Double skin side panels with windows.
- Internal flexible continuous curtain (to divide working area).
- Front PVC strip curtains (for warehouse applications).
- Front doors (hinged/sliding/rapid roller).
- Front mounted pressurized airlocks.
- Disposable EU4 prefilters (High dust loading applications).
- Terminal Hepa H13/H14 filter with knife gel seal.
- Stainless steel or aluminium micro-perforated grille.
- Safe change Bag in/Bag out for return (exhaust filter stages).
- Once-through airflow systems.
- Filter blocked alarms (audible and visible).
- Automatic compensation of fans for progressive filter blockage (closed loop control).
- Noise attenuation systems.
- Velocity display included with automatic compensation fans.
- Touch screen HMI with audible and visual alarm packages.
- Cooling fan or chiller coil system for temperature regulation.
- Explosion proof electrics.
- Rigid containment screen with glove ports for improved operator protection (OEL <math>< 10\mu\text{g}/\text{m}^3</math>).
- Various fixed or mobile bench options mounted on rear booth wall.
- Utility services such as network connections, compressed air fittings, Nitrogen, water hose etc.
- Base plinth/curb allowing a clean and level floor interface.
- Pallet guides.
- Supply & integration of drum handling equipment.
- FAT documentation.
- IQ/OQ protocols.



Rigid containment screen



Fixed bench



Safe change bag in / bag out



Cooling fan system



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