



DESIGN QUALIFICATION PROTOCOL FOR DISPENSING BOOTH

CUSTOMER:

EQUIPMENT: DISPENSING BOOTH

(_____ W x _____ D x _____ H mm)

SUBMITTED BY:

PHARMA ENGINEERS

PLOT NO. 113/A/1, LANE 8, PHASE II,

IDA CHERLAPALLI, HYDERABAD- 500051.

Tel No.91-40 27261113, 27261114

DESIGN QUALIFICATION PROTOCOL APPROVAL

This document is prepared by the documentation team of **M/S. PHARMA ENGINEERS** for

EQUIPMENT : DISPENSING BOOTH

PLANT /PROJECT :

CLIENT :

Hence this document before being effective shall be approved by *Client / Customer*

M/s. PHARMA ENGINEERS:

	Name	Designation	Signature	Date
Prepared By				
Reviewed By				

CLIENT / CUSTOMER:

	Name	Designation	Signature	Date
Reviewed By				
Approved By				

Client:

Supplier/ Manufacturer: **PHARMA ENGINEERS, HYDERABAD**

Equipment: **DISPENSING BOOTH** (____ W x ____ D x ____ H mm)

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DESIGN QUALIFICATION (DQ)

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1. OBJECTIVE

The objective of this document is to comply with **URS** Document Number:
_____ pertaining to design specification of DISPENSING
BOOTH.

2. SCOPE

Design Specifications of Dispensing Booth Comprising of the following main
Equipments.

- Material of Construction
- Blower Motor Assembly
- Filters
- PVC split curtain



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3. RESPONSIBILITIES

M/s. Pharma Engineers:

1. Shall agree and follow the URS.
2. To Prepare the detailed engineering drawings.
3. To submit the technical details of equipment as per the scope of supply.
4. To ensure safe delivery of equipment
5. To Complete the equipment qualification.



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4. EQUIPMENT DESCRIPTION

Dispensing Booth is designed to obtain cleanliness level complies with Class 100/ISO-5 at rest condition and ability to sweep away contaminants generated during handling and to maintain the required classified conditions.

ISO STD	MAXIMUM CONCENTRATED LIMITS (PARTICLE/M3 OF AIR) FOR PARTICLE EQUAL & LARGER THAN THE CONSIDERED SIZES AS PER ISO 14644-1 (2015)	
	0.5 micron	5 microns
ISO-5		
Particles per Cubic Meter	3520	29

Dispensing Booth chamber is constructed in stainless steel of grade SS 304, 20G, with PVC split curtain operation.

The top portion of dispensing booth is housed with blower motor assembly followed by HEPA filter and bottom portion shall have return air path with pre-filter and fine filter.

Blower was sized to maintain the laminar air below the HEPA Filter and also to take care of pressure drop across the filter. The speed of the blower shall be adjusted with Speed regulator.

The air is drawn through pre-filter and blows over the HEPA Filter with a velocity of 90 feet per minute; however, the variation of velocity is accepted up to $\pm 20\%$ feet per minute. Thus, the chamber is maintained for a class of cleanliness confirms to Class 100 / ISO-5.

Pressure differential across the HEPA Filter, Fine Filter and Pre-Filter shall be monitored with a differential pressure gauge.

Lights shall be provided at working area. Approx. 400 Lux intensities shall be maintained.

Required ports are provided for D.O.P and pressure drop measurement

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5. SYSTEM ARCHITECTURE

DESCRIPTION	PARAMETER
Room Name / Location of Equipment	
Classification Grade	
Pressure Maintained	

6. TECHNICAL SPECIFICATIONS:

NOMENCLATURE:	
Equipment TAG Number	DISPENSING BOOTH
Manufacturers name	M/s Pharma Engineers
Qty	01 No.
CONSTRUCTION DETAILS:	
Working Area (width x Depth x Height) mm	1870 x 1280 x 2000 mm
Overall Size (width x Depth x Height) mm	1970 x 1830 x 2400 mm
M.O.C	SS 304, 20G, Matt Finish
BLOWER DETAILS	
Make	KRUGER
Model	KDD 9X9 S
Power	405 W, 1 Ø, 50 Hz
R.P.M	1150 RPM
Qty	2 No
FILTRATION SCHEME WITH IN EQUIPMENT	
PRE-FILTER	
Make	M/s. ULTRAFIL AIR SYSTEMS
Type	Flange Type
Test Method	EN 779
Filter Classification as per EN779	G4
Media	Synthetic media
Avg. arrestance of synthetic dust	90 ≤ Am
Equivalent particle size in terms of market language	10 microns -Un authenticated data
Size	855x690x75 mm
Qty	2 No.
I.P.D of Filter (Approximate)	1 to 06 mm of WC
F.P.D of Filter (Approximate)	25 mm of WC

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NOTE: I.P.D & F.P.D values change based on AIRFLOW; hence customer should set the limits after commissioning.

FINE FILTER	
Make	M/s. ULTRAFIL AIR SYSTEMS
Type	Flange Type
Test Method	EN 779
Filter Classification as per EN779	M-5
Media	Synthetic media
Avg. arrestance of synthetic dust	$40 \leq E_m < 60\%$
Equivalent particle size in terms of market language	5 microns-Un authenticated data
Size	775 X 615 X 150 mm
Qty	2 No.
I.P.D of Filter (Approximate)	5 to 15 mm of WC
F.P.D of Filter (Approximate)	45 mm of WC

NOTE: I.P.D & F.P.D values change based on AIRFLOW; hence customer should set the limits after commissioning.

HEPA FILTER	
Make	AAF
Type of filter	BOX
Test method	EN 1822
Filter classification	H-14
Avg. efficiency at MPPS	99.995%
Media MOC	Micro fiber glass
Washable compatibility	No
Equivalent particle size in terms of market language	99.999% down to 0.3 micron-Un authenticated data
Size	915 X 610 X 69 mm
Qty	4 No's
I.P.D of Filter (Approximate)	10 to 15 mm of WC
F.P.D of Filter (Approximate)	50 mm of WC

NOTE: I.P.D & F.P.D values change based on AIRFLOW; hence customer should set the limits after commissioning.

EXHAUST HEPA FILTER	
Make	AAF
Type of filter	BOX
Test method	EN 1822
Filter classification	H-14
Avg. efficiency at MPPS	99.995%

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Media MOC	Micro fiber glass
Washable compatibility	No
Equivalent particle size in terms of market language	99.999% down to 0.3 micron-Un authenticated data
Size	610 X 150 X 69 mm
Qty	2 No's
INSTRUMENTATION DETAILS	
DIFFERENTIAL PRESSURE GAUGES	
Make	DWYER
Type	Analog Gauge
Range	0 to 50 mm of WC
Location	Across Pre-Filter, Fine Filter, HEPA Filter
Qty	3 No
CFL LIGHT	
Make	Havells
Length	4'
Qty	1 No
ACCESSORIES	
ON/OFF Switch for Blower	6 Amps Selector Switches / 01 No's
ON/OFF Switch for CFL LIGHT	6 Amps Selector Switches / 01 No's
PAO, ATM & DOP Ports	SS 304 with Matt finish
Gasket	Food grade gasket

7. SAFTEY FEATURES & INTERLOCKS

Sr.No.	ACTIVITY	ACTION	ALARMS
1.	Blower Over loaded	Beep sound blows, and blower is switched OFF	Indication is provided with Alarm

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2.	Safe guard for blower	Acts as protection during service	No Alarm Provided
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8. UTILITIES REQUIRED

S.NO	DESCRIPTION	CONSUMPTION
1.	Electricity 1Ø	728 W

9. LIST OF DRAWINGS AND DOCUMENTS ENCLOSED

S.NO	DRAWING NAME	ENCLOSED (YES/NO)
1.	GA Drawing for Dispensing Booth	
2.	Electrical Drawings	