



DESIGN QUALIFICATION PROTOCOL FOR VERTICAL LAMINAR AIR FLOW UNIT

CUSTOMER:

EQUIPMENT:

VERTICAL LAMINAR AIRFLOW UNIT

(_____ 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 : VERTICAL LAMINAR AIR FLOW UNIT (VLAF-01)

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: VERTICAL LAMINAR AIRFLOW UNIT (____ W x ____ D x ____ H mm)

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DESIGN QUALIFICATION (DQ)

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DESIGN QUALIFICATION (DQ)

1. OBJECTIVE

The objective of this document is to comply with **URS** Document Number:
_____ pertaining to design specification of Vertical LAF
VLAF -01.

2. SCOPE

Design Specifications of Vertical LAF Comprising of the following main
Equipments.

- Material of Construction
- Blower Motor Assembly
- Filters



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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

Vertical Laminar Air Flow unit 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

Vertical Laminar Air Flow unit chamber is constructed in stainless steel of grade SS 304, 20G, with blower motor assembly followed by HEPA Filter.

The air is drawn through Pre-filters passed through HEPA Filter which is installed below the blower and finally reaches to working area.

The complete chamber is fabricated as per GEP.

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

5. TECHNICAL SPECIFICATIONS:

NOMENCLATURE:	
Equipment TAG Number	VLAF - 01
Manufacturers name	M/s Pharma Engineers
Qty	01 No.
CONSTRUCTION DETAILS:	
Internal size (width x Depth x Height) mm	1860 X 762 X 620 mm
External size (width x Depth x Height) mm	2000 X 950 X 2150 mm
M.O.C	SS 304, 20G, Matt Finish
BLOWER DETAILS	
Make	ZIEL - ABEGG
Model	GR19V 41P.Z8.AR

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Power	Ø1, 50 Hz, 150 W
Qty	4 Nos
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	610X305X50 mm
Qty	4 No.
HEPA FILTER	
Make	AAF
Type	Box Type
Test Method	EN 1822
Filter Classification as per EN1822	H-14
Media	Micro Fiber Glass
Avg. Efficiency at MPPS	< 99.995%
Washable compatibility	No
Equivalent particle size in terms of market language	99.999% down to 0.3 micron-Un authenticated data
I.P.D of Filter (Approximate)	11-18 mm WC
F.P.D of Filter (Approximate)	50 mm WC
Size of filter	915 X 762 X 69 mm
Quantity	2 No's
NOTE: I.P.D & F.P.D values change based on AIRFLOW; hence customer should set the limits after commissioning.	
INSTRUMENTATION DETAILS	
DIFFERENTIAL PRESSURE GAUGES	
Make	DWYER
Type	Analog Gauge
Range	0 to 50 mm of WC
Location	Across HEPA Filter
Qty	1 No

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CFL LIGHT	
Make	OSRAM
Length	4 feet
Qty	1 No
UV LIGHT	
Make	PHILIPS
Length	4'
Qty	1 No.
HOUR METER	
Make	Selec
Range	999999 Hrs
Qty	01 No's
ACCESSORIES	
ON/OFF Switch for Blower	6 Amps Selector Switches / 01 No's
ON/OFF Switch for UV/ CFL LIGHT	6 Amps Selector Switches / 01 No's
PAO, ATM & DOP Ports	SS 304 with Matt finish
Gasket	Food grade gasket

6. 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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7. UTILITIES REQUIRED

S.NO	DESCRIPTION	CONSUMPTION
1.	Electricity	600 W 1Ø

8. LIST OF DRAWINGS AND DOCUMENTS ENCLOSED

S.NO	DRAWING NAME	ENCLOSED (YES / NO)
1.	GA Drawing for Vertical LAF	
2.	Electrical Drawing for Vertical LAF	



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