



CLEANROOMS ARE BY NO MEANS STATIC, BUT DYNAMIC PRODUCTION AREAS IN CONTAMINATION CRITICAL ENVIRONMENTS. PEOPLE AND GOODS ARE CONSTANTLY IN MOTION. INSTALLATIONS, PRODUCTION LINES AND MACHINERY DO REQUIRE PERIODICAL ADJUSTMENT AND REDESIGN ACCORDING TO THE SPECIFIC PRODUCTION REQUIREMENTS OF DIFFERENT TYPES OF PHARMACEUTICALS OR



SEMICONDUCTOR PRODUCTS. THE PERTAINING STANDARD ISO 14644-3 MAKES IT MANDATORY FOR OPERATORS OF CLEANROOMS TO GIVE PERIODICALLY EVIDENCE OF THE IN-SITU AIR FLOW SITUATION BY AIR FLOW MAPPING STUDIES SUPPORTED BY HIGH PURITY CLEANROOM FOGGERS (AIR FLOW MAPPERS).

SISTEMA'S ULTRAPURE AP35-3 AND AP100-3 NITROGEN-DI-WATER FOG MACHINES BOTH PROVIDE AN EXTREMELY **UBANDANT VOLUME OF HIGH PURITY FOG OF DRY CHARACTER AND PAPER WHITE DENSITY**. THE TECHNOLOGY BOTH AP35-3 AND AP100-3 DO APPLY TO DO SO IS UNMATCHED BY ANY OTHER CLEAN ROOM SUITABLE FOG GENERATING TECHNOLOGY MAY IT BE TRANSDUCER TECHNOLOGY, DRY ICE OR FLUID/HOT WIRE TECHNOLOGY. BOTH THE AP35-3 AND AP100-3 NITROGEN-DI-WATER FOG MACHINES ARE SUITABLE FOR EVERY TYPE FROM MID TO VERY LARGE-SCALE CONTAMINATION FREE 'SMOKE STUDDIES' AND AIR FLOW MAPPING STUDIES IN CLEAN ROOMS, STERILE ROOMS, MEDICAL SURGERY ROOMS, ISO SUITES, ETC. ACCORDING TO ISO 14644-3 ANNEX B7.



KEY FEATURES

- **FLEXIBLE CONTROL OF FOG VOLUME, DENSITY AND AIRFLOW VIA BUILT-IN FAN** (CONTROLLABLE FROM 0 TO 100 % OUTPUT), **SELCTABLE TEMPERATURE PROFILE AND NITROGEN FLOW CONTROL**
- **MULTIPLE FOG SPOT DESIGN** (POSSIBILITY OF WORKING WITH A SINGLE AFM-NEO AT SEVERAL LOCATIONS AT THE SAME TIME)
- **WIRELESS REMOTE CONTROL** (OPT.) FOR DEVICE FUNCTIONALITY, SWITCH & FLASH MODE, FAN UP/DOWN
- MEDIA TANK FILLING ON THE FLY (OPT.)
- **BUILT IN REDUNDANCY AND UP TO 5 YEARS WARRANTY**
- **SANITIZABLE WITH 6% HYDROGEN PEROXIDE OR CALCIUMHYPOCHLORIT 0,2 ML/100ML OR ISOPROPYL ALCOHOL**
- **GENERATING AN IDEAL FOG DROPLET SIZE RANGE**

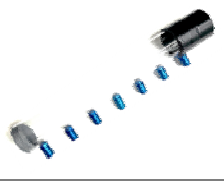














< 0.3 µm	–	28 % OF GENERATED DROPLETS
0.3 µm	– 0.5 µm	72 % ...
0.5 µm	– 1.0 µm	0 % ...
1.0 µm	– 5.0 µm	0 % ...
> 5.0 µm		0 % ...







TYPICAL APPLICATIONS

- **AIRFLOW RECOVERY TESTS** GUIDED BY ISO 14644-3 ANNEX B12
- **AIRFLOW VISUALIZATION TESTS** GUIDED BY ISO 14644-3 ANNEX B7
- **USP 797 IN-SITU AIRFLOW ANALYSIS AND USP 800 COMPOUND PHARMACY AIRFLOW TESTS**
- **AIRFLOW TESTS FOR NSF 49 AND BIO-SAFETY CABINETS**
- **AIRFLOW REQUIREMENTS USING SEMICONDUCTOR CLEAN ROOM GUIDELINES** AND GUIDED BY **FEDERAL STANDARD 209E**
- **CONTAINMENT TRANSPORT STUDIES ON PROCESS TOOLS**
- OPTIMIZATION OF EQUIPMENT LOCATIONS
- **TRACKING ROUTES OF AIR INFILTRATION INTO CLEANROOMS**
- **PRESSURE BALANCING** (ROOMS AND SPACES)
- **OPERATORS TRAININGS**

LINE	ITEM (PICTURE)	ITEM DESCRIPTION
1	<p style="text-align: center;">AP35 -3 (LN2)</p> 	<p>AP35-3 (LN2) ULTRAPURE WHITE FOG CLEANROOM FOGGER</p> <ul style="list-style-type: none"> – SINGLE (OPT. DOUBLE) Ø 80 mm FOG OUTLET PORT – 9 L WFI-WATER TANK AND 35 L LN2 DOUBLE WALL DEWAR – DUAL HEATING SYSTEM (2 HEATING COILS BUILT-IN) – CONTROL UNIT, WATER TANK AND DEWAR IN STAINLESS STEEL – STAINLESS STEEL CARRIAGE ON TOTAL 4 CASTORS W/PROTECTIVE TRANSPORT FRAME (SEMICIRCULAR DEMOUNTABLE HOUSING) – 1 PCE. Ø 80 x 650 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES – 1 PCS. 5 m FLEXIBLE TUBE WITH END TIPS (Ø 80 mm) <p> – MAX. CYCLE TIME WITH ONE FILLING: 47 min (REFILL WATER TANK AND EXCHANGE LN2 DEWAR ON THE FLY)</p> <p>– GENERATED FOG VOLUME: 8,2 m³/min (290 cft/min)</p> <p>– DENSITY PER MINUTE: 866 ml</p> <p>– FOG CHARACTERISTICS: EXTREMELY DENSE AND PAPER WHITE FOG</p> <p>– TOTAL FOG VOLUME PER 60 min CYCLE TIME: 492 m³</p> <p> – VISIBLE FOG DISTANCE: 7 TO 10 m</p> <p>– TYPE OF GENERATED FOG: HIGH VOLUME OF DENSE WHITE PURE FOG</p> <ul style="list-style-type: none"> – OPTIONAL REMOTE CONTROL – PRESSURE BUILD-UP CONTROLLER AND PRESSURE REDUCTION CONTROLLER – FILL LEVEL CONTROL FOR WATER TANK AND NITROGEN DEWAR – PRESSURELESS SYSTEM WORKING ON 0,3 BAR (43.5 PSI) ONLY – DIMENSIONS (L x W x H): 121 x 59 x 88 cm (47.6 x 23,2 x 35 in) – POWER SUPPLY: 100-240V 47/63HZ
2	<p style="text-align: center;">AP100 -3 (LN2)</p> 	<p>AP100-3 (LN2) ULTRAPURE WHITE FOG CLEANROOM FOGGER</p> <ul style="list-style-type: none"> – DOUBLE Ø 80 mm FOG OUTLET PORT – 9 L WFI-WATER TANK AND 100 L LN2 DOUBLE WALL DEWAR – DUAL HEATING SYSTEM (2 HEATING COILS BUILT-IN) – CONTROL UNIT, WATER TANK AND DEWAR IN STAINLESS STEEL – CONTROL UNIT SECTION AND DEWAR SECTION EACH EQUIPPED WITH 4 CASTORS (TWO MOVABLE AND TWO FIXED). BOTH CAN BE DECOUPLED FROM EACH OTHER AND BE MOVED INDEPENDENTLY OF EACH OTHER. – 2 PCE. Ø 80 x 650 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES – 2 PCS. 5 m FLEXIBLE TUBE WITH END TIPS (Ø 80 mm) <p> – MAX. CYCLE TIME WITH ONE FILLING: 90 min (REFILL WATER TANK AND EXCHANGE LN2 DEWAR ON THE FLY)</p> <p>– GENERATED FOG VOLUME: 14 m³/min (495 cft/min)</p> <p>– DENSITY PER MINUTE: 866 ml</p> <p>– FOG CHARACTERISTICS: EXTREMELY DENSE AND PAPER WHITE FOG</p> <p>– TOTAL FOG VOLUME PER 60 min CYCLE TIME: 840 m³</p> <p> – VISIBLE FOG DISTANCE: 10 TO 14 m</p> <p>– TYPE OF GENERATED FOG: HIGH VOLUME OF DENSE WHITE PURE FOG</p> <ul style="list-style-type: none"> – OPTIONAL REMOTE CONTROL – PRESSURE BUILD-UP CONTROLLER AND PRESSURE REDUCTION CONTROLLER – VACUUM SEAL LIMITTING LN2 LOSS IF NOT IN OPERATION – FILL LEVEL CONTROL FOR WATER TANK AND NITROGEN DEWAR – PRESSURELESS SYSTEM WORKING ON 0,3 BAR (43.5 PSI) ONLY – NITROGEN FILLING HOSE WITH PHASE SEPERATION – DIMENSIONS (L x W x H): 121 x 59 x 127 cm (47.6 x 23,2 x 50 in) – POWER SUPPLY: 100-240V 47/63HZ 

LINE	ITEM (PICTURE)	ITEM DESCRIPTION	
3	FL650.60-STR		Ø 60 x 650 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES
4	FL.1300.60-STR		Ø 60 x 1.300 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES
5	FL.650.80-STR		Ø 80 x 650 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES
6	FL.1300.80-STR		Ø 80 x 1.300 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES
7	FL.1850.80-STR		Ø 80 x 1.850 mm FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES
8	FL.1350.80-T	 Ø 80 x 1.300 mm FOG RAKE T-PATTERN VERSION, FOG RAKE, FITTED W/OUTLET DIRECTION NOZZLES	
9	TUBE.3000.60-BS	 3 m FLEXIBLE TUBE WITH END TIPS (Ø 60 mm)	
10	EXT.TUBE.3000.60-BS		Ø 60 mm FLEXIBLE TUBE EXTENSION (PER EACH ADDITIONAL m OF LENGTH ON TOP)
11	TUBE.3000.80-BS		3 m FLEXIBLE TUBE WITH END TIPS (Ø 80 mm)
12	TUBE.5000.80-BS		5 m FLEXIBLE TUBE WITH END TIPS (Ø 80 mm)
13	EXT.TUBE.3000.80-BS		Ø 80 mm FLEXIBLE TUBE EXTENSION (PER EACH ADDITIONAL m OF LENGTH ON TOP)
14	THROTTLE.60		Ø 60 mm THROTTLE VALVE FOR A 0 TO 100 % OUTPUT ADJUSTMENT AT HOSE TIP
15	THROTTLE.80		Ø 80 mm THROTTLE VALVE FOR A 0 TO 100 % OUTPUT ADJUSTMENT AT HOSE TIP
16	OUTLET.45° (80)	 45° FLEXIBLE Ø 80 mm HOSE TO BE CONNECTED TO FOG OUTLET PORT PROVIDING A STABLE OUTPUT RIGHT ON SPOT.	
17	80.60 RED	 REDUCTION FROM 80 TO 60 mm DIAMETER (THIS REDUCTION COMES WITHOUT THROTTLE VALVE!)	
18	TUBE.CON (60)		OD 60 mm TUBE CONNECTOR COUPLING TWO HOSES
19	TUBE.CON (80)		OD 80 mm TUBE CONNECTOR COUPLING TWO HOSES
20	NOZ.350	 350 mm BROAD FLAT FOG OUTPUT NOZZLE	
21	NOZ.500	 500 mm BROAD FLAT FOG OUTPUT NOZZLE WITH INSIDE BLADE STRUCTURE FOR A HOMOGENEOUS FOG PICTURE	
22	T-SPLITTER.80-STRD	 EXTRA T-PATTERN SPLITTER FOR CONFIGURATING OF A 1.300 mm T-PATTERN FOG RAKE VERSION OF 80 mm OD (TOGETHER WITH TWO FL.650.80-STR FOG RAKE ELEMENTS)	
23	Y-SPLITTER.80-S*	 Y-PATTERN SPLITTER FOR SPLITTING ONE TO TWO HOSES ENABLING WORKING PARALLELY AT TWO VISUALIZATION SPOTS . COMING WITH SHORT HOSE CONNECTING AFM-NEO TO Y-SPLITTER.	
24	Y-SPLITTER.80-THROTTLE	 Y-PATTERN SPLITTER WITH ADDITIONAL BUTTERFLY VALVE IN EACH OUTGOING TUBE FOR SPLITTING ONE TO TWO HOSES ENABLING A 0 TO 100 % OUTPUT ADJUSTMENT AND PARALLEL WORKING AT TWO VISUALIZATION SPOTS . COMING WITH SHORT HOSE CONNECTING AFM-NEO TO Y-SPLITTER.	
25	QUAD	 1 IN 4 OUT Y-PATTERN SPLITTER FOR SPLITTING ONE TO FOUR HOSES ENABLING FOGGING PARALLELY AT FOUR VISUALIZATION SPOTS (ONLY AVAILABLE FOR AFM40-NEO AND AFM40-NEO DUAL)	
26	LED.BOOST-GEN2	 DUAL LIGHT SOURCE KIT TO ESTABLISH HIGHER CONTRAST CONSISTING OF (1) LIGHT SOURCE #1 (360 POWERFUL LEDs 0,5 W SMD 2835 COLD WHITE) ... AND (2) LIGHT SOURCE #2 (LIGHT BAR VECTOR PIXEL BAR WITH PIXEL CONTROL AND 18x15W LEDs, RGBWA COLOUR MIXING, 45° BEMA ANGLE, 10/28/90/100 DMX CHANNELS)	

27	RC.AFM.AD		REMOTE CONTROL FOR SYSTEM FUNCTIONS ON/OFF, SWITCH & FLASH MODE, FAN UP/DOWN, 2-1 BLOCK RUN
28	IQ/OQ		IQ/OQ DOCUMENTATION
29	TRIPOD-L/F		DOUBLE TRIPOD KIT INCLUDING TWO STAINLESS STEEL FOG RAKE HOLDER PLATES WITH TWO FASTENING STRIPES COMBINED TO UP TO 4 m HIGH DOUBLE TRIPOD FOR FOG RAKE LIFTING AND POSITIONING IN UP TO 4 m OF HEIGHT IN ORDER TO CREATE AN UP TO 4 m WIDE FOG CURTAIN
30	TRIPOD-900		900 mm HIGH STAINLESS STEEL DOUBLE TRIPOD COMING WITH TWO TOP MOUNTED FOG RAKE HOLDER PLATES WITH TWO SILICONE FASTENING STRIPES
31	TRIPOD-1200		1200 mm HIGH STAINLESS STEEL DOUBLE TRIPOD COMING WITH TWO TOP MOUNTED FOG RAKE HOLDER PLATES WITH TWO SILICONE FASTENING STRIPES
32	TRIPOD-1500		1500 mm HIGH STAINLESS STEEL DOUBLE TRIPOD COMING WITH TWO TOP MOUNTED FOG RAKE HOLDER PLATES WITH TWO SILICONE FASTENING STRIPES
33	BOX.AP35-3 BOX.AP100-3		HEAVY DUTY TRANSPORT BOX FOR AP35-3 BOX.AP100-3



REFERENCE LIST EXTRACT FROM AFM CUSTOMERS