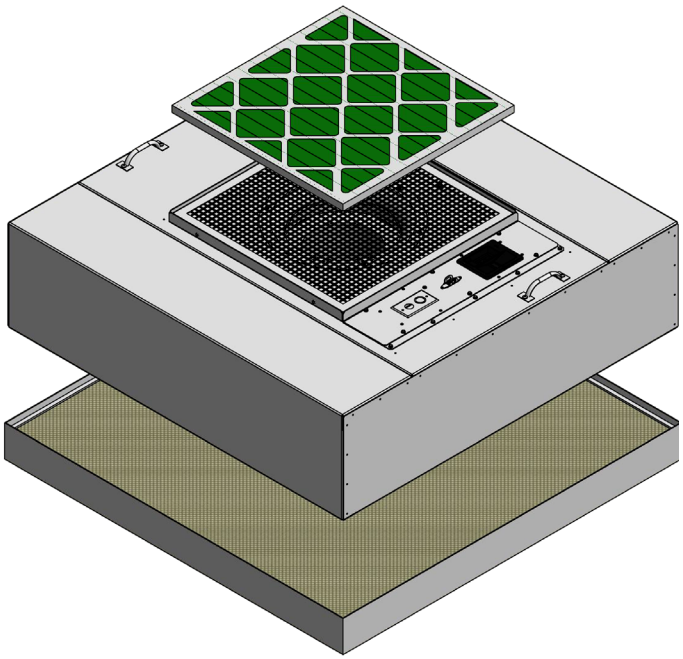
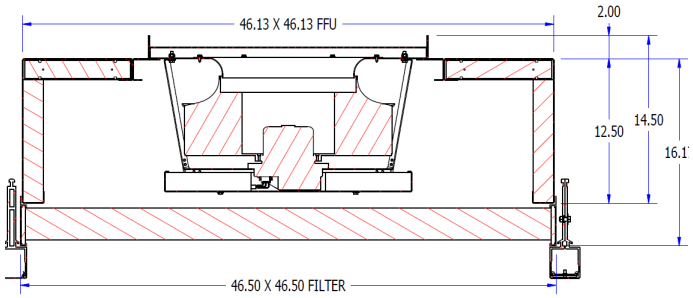
NORTEK AIR SOLUTIONS CLEANPAK

FAN FILTER UNIT CPFFU-EC-ZA-4x4

- High maximum capacity of 1440 CFM true airflow volume at 1.5 iwg TSP
- Powder-coated housing
- Acoustically baffled and insulated
- Unit is ETL listed per UL 1995.
- High efficiency UL listed brushless DC electronically commutated external rotor motor with integrated electronics.
- Permanently lubricated ball bearings with bearing L10 life > 100,000 hours
- Integrated method to mitigate electrical arcing across the bearings
- Integrated encapsulated electronics with built-in electronic motor overload protection, locked rotor protection, active thermal management, and active power factor correction
- Integrated ModBus RTU communication for direct control from building management system. Unit is capable of accepting speed and status setpoints, and reporting out motor/controller alarms, and speed and status. Several other Modbus RTU points are available. Capable of handling up to 62 FFUs per Modbus master line. 2 female RJ45 jacks provided in FFU for daisy chaining of FFU patch cables.





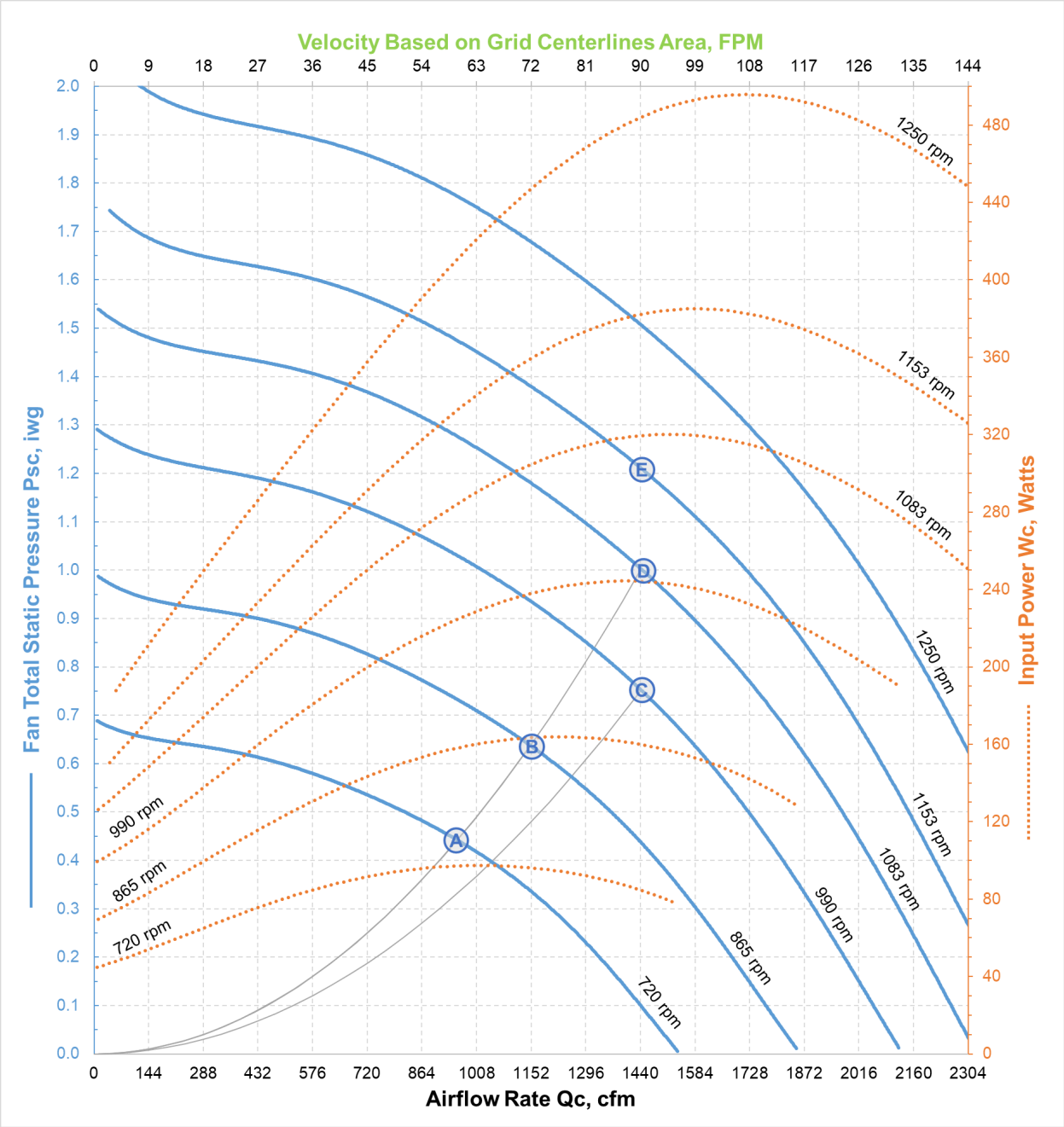
Voltage	Max W	Unit Label FLA	Weight (no filter)
200-277VAC 1~ 50/60 Hz	480	2.4-1.7	100 lbs

Can be custom rated at lower FLA

	48”x48” grid centerlines	Part that mates to grid			Filter		Fan housing		Height
	Loading and grid style	Grid surface	W	L	W	L	W	L	Fan Cabinet excluding filter
☐	Top load flush 2.6 grid	☐ Gasket ☐ Gel	46.5”	46.5”	46.5”	46.5”	46.125”	46.125”	12.5” (14.5” with inlet guard)
☐	Other								

Filter efficiency	☐ HEPA 99.99% 0.3 microns	☐ ULPA 99.9995% 0.12 microns	
Filter pack depth	☐ 53 mm (2”) Standard	☐ 70 mm (3”)	☐ 100 mm (4”)

CPFFU-EC-ZA-4x4 FAN STATIC PRESSURE AND INPUT POWER VERSUS AIRFLOW



Data at 0.075 lbm/cu ft standard air density.

CPFFU-EC-ZA-4x4 PERFORMANCE TABLES

Point	AIRFLOW						POWER					
	Speed RPM	True Airflow CFM	Nominal Velocity FPM	I iwg	TSP iwg	ESP iwg	Vrms V	Irms A	Input Power W	S VA	PF	Ithd% %
POINTS AT VARYING SPEEDS AND OPERATING CONDITIONS												
A	720	960	60	0.34	0.44	0.10	279	0.40	96	112	0.86	17%
B	865	1153	72	0.41	0.63	0.22	279	0.62	161	172	0.94	10%
C	990	1442	90	0.52	0.75	0.23	280	0.89	240	248	0.97	10%
D	1083	1442	90	0.53	0.99	0.46	280	1.15	315	323	0.98	9%
E	1153	1441	90	0.53	1.19	0.66	284	1.37	376	384	0.98	8%
POINTS ALONG FIXED SPEED FAN CURVE												
	990	962	60	0.39	1.07	0.68	279	0.80	215	224	0.96	10%
	990	1154	72	0.45	0.98	0.53	279	0.85	229	237	0.96	10%
C	990	1442	90	0.52	0.75	0.23	280	0.89	240	248	0.97	10%
	990	1597	100	0.56	0.62	0.06	281	0.86	232	241	0.96	10%

Nominal Velocity is based on area of 16 SF (4 ft x 4 ft)
I = Filter pressure drop of 70mm ULPA filter (can vary depending on efficiency and depth of media pack and filter sizing)
ESP = External SP available less ULPA loss

Point	SOUND FROM SINGLE UNIT															
	Discharge Sound Power Levels, Lw, dB re 1 pico Watt								Sound Pressure Levels, Lp, dB re 20 micro Pa, at a distance of 1 m from filter face							
	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K
POINTS AT VARYING SPEEDS AND OPERATING CONDITIONS																
A	64	52	53	48	48	37	28	20	61	49	47	45	44	32	23	20
B	64	57	56	53	53	43	34	23	60	52	51	50	49	37	28	20
C	60	69	59	55	56	47	37	27	58	64	54	53	52	41	32	22
D	67	68	62	58	59	50	41	31	67	61	56	55	55	44	35	24
E	57	68	64	60	60	52	43	33	60	58	60	56	56	46	37	26
POINTS ALONG FIXED SPEED FAN CURVE																
	66	68	61	55	54	46	37	27	63	62	55	53	50	40	32	21
	60	66	61	55	55	46	37	26	60	61	55	52	51	40	31	21
C	60	69	59	55	56	47	37	27	58	64	54	53	52	41	32	22
	62	68	60	56	56	48	39	27	60	64	53	52	53	42	32	22

Sound Power Levels taken using the sound intensity method

CPFFU-EC-ZA-4x4 SPECIFICATION

[Optional items]

Fan cabinet shall be powder-coated steel and aluminum. Unit shall incorporate a sound baffle with sound absorbent insulation. Unit shall carry an ETL listing per UL 1995.

The nominal 4x4 foot FFU shall be capable of producing 1440 CFM (2446 CMH) of true airflow volume at up to 1.5 iwg (373 Pa) of fan static pressure. The fan shall consist of an integrated motor, controller, and centrifugal plug fan. The impeller shall have backward-curved blades and be mounted directly to the rotor of the motor. Motor shall be an electronically commutated brushless DC external rotor motor with permanently lubricated ball bearings. The motor shall have an isolated shaft for mitigation of electrical arcing across the bearings. The motor shall have an integrated controller directly attached to it that shall have encapsulated electronics, built-in electronic motor overload protection, built-in locked rotor protection, built-in active thermal management and active power factor correction. Motors shall be designed for IP54 protection and a thermal class of THCL 155. The fan assembly shall be statically and dynamically balanced as per ISO 1940, class G2.5. The housing shall incorporate a finger guard on the inlet side of the fan that requires tooled removal. Power input to the unit shall be 200-277VAC 50/60 Hz. The FFU shall have integrated Modbus RTU communication.

[Provide a 1” (25 mm) thick 24”x24” (600x600 mm) 30% pre-filter mounted on top of the unit.]

Provide a plenum style final filter with a 50 [70] [100] mm pack depth with an anodized extruded aluminum frame. HEPA filter shall have a minimum DOP efficiency of 99.99% @ 0.3 microns. [ULPA filter shall have a minimum DOP efficiency of 99.9995% @ 0.12 microns.]

The final filter shall have a knife-edge for mating into the gel ceiling grid. The final filter shall be gasketed on the upstream face. [The final filter shall have a flat bottom face for seating onto the gasketed style ceiling grid. The final filter shall be gasketed on the upstream and downstream faces.] The fan cabinet shall sit directly on the final filter. The final filter shall have a coated metal screen on the downstream face to protect the filter.