

COST EFFECTIVE EQUIPMENT | APOGEE® X-PRO II WORKSTATION

Facility and Utility Requirements

Full size (4-bay) and half size (2-bay), with ducted exhaust, fan filter unit or ductless recirculation tops

For planning only. These figures are for facility planning. Final installation details must be checked against the installation drawing and manual that Cost Effective Equipment (CEE) issue with the system you order, and confirmed with CEE before construction.

1. Overview

The CEE Apogee® X-Pro II Workstation is a modular cleanroom bench in two footprints. This document sets out the facility utilities for both sizes, to help you plan the room ahead of installation.

Configuration	Bay positions	Enclosure options	Nominal width
Full size	Four: up to four 1-bay modules, up to two 2-bay modules, or a mix	Ducted exhaust, fan filter unit (FFU) or ductless recirculation	70.5" (1800 mm)
Half size	Two: up to two 1-bay modules or one 2-bay module	Ducted exhaust, fan filter unit (FFU) or ductless recirculation	39.5" (1003 mm)

1-bay modules: Apogee Spin Coater, Apogee Developer/Cleaner and Apogee Bake Plate. 2-bay modules: Apogee 450 Spin Coater, Apogee 450 Developer/Cleaner and Apogee 300 Bake Plate, which are larger and take two bay positions each. A full-size cabinet with 2-bay modules fitted therefore holds fewer than four tools, as the bay count is a capacity limit. Unused positions can be filled with a prepared 1-bay or 2-bay workspace for future equipment, or with a DI sink on a 1-bay position.

2. Utility summary: full size

Utility	Requirement
Electrical	208-230 VAC, single phase, 50/60 Hz, 26.2 A maximum full load current, 30 A breaker
Vacuum	1/4" push-to-connect or 1/4" FNPT, below 20 inHg (33 kPa abs). Not needed if bought with vacuum pumps
Nitrogen / CDA	70 psi (482 kPa), 1/4" push-to-connect or 1/4" FNPT
Cabinet / drawer exhaust	4" OD
Hood exhaust (ducted exhaust top only)	8" OD, 540 cfm at 0.4" H ₂ O (100 Pa at 917 CMH)
Capacity	Four 200 mm modules, two 300 mm modules, or two 200 mm plus one 300 mm
Under-cabinet storage	6.8 sq ft (0.637 m ²) drawer, plus 6.8 sq ft (0.637 m ²) of side compartments
Dimensions, installed (W x D x H)	70.5" x 45" x 80" (1800 x 1143 x 2032 mm)
Height, sash fully open	83" (2108 mm), for ceiling and overhead clearance
Width across open sash	77.6" (1970 mm), wider than the cabinet, so allow for it at the sides
Front swing envelope, doors fully open	73.0" (1855 mm)
Crated dimensions (W x D x H)	75" x 48" x 96" (1905 x 1220 x 2439 mm)
Machine weight	750 lb (340 kg), excluding modules
Shipping weight	1,000 lb (454 kg), excluding modules

3. Utility summary: half size

Utility	Requirement
Electrical	208-230 VAC, single phase, 50/60 Hz, 26.2 A maximum full load current, 30 A breaker
Vacuum	1/4" push-to-connect or 1/4" FNPT, below 20 inHg (33 kPa abs). Not needed if bought with vacuum pumps
Nitrogen / CDA	70 psi (482 kPa), 1/4" push-to-connect or 1/4" FNPT
Cabinet / drawer exhaust	4" OD
Hood exhaust (ducted exhaust top only)	6" OD, 540 cfm at 0.4" H ₂ O (100 Pa at 917 CMH)
Capacity	Two 200 mm modules or one 300 mm module
Under-cabinet storage	6.8 sq ft (0.637 m ²) drawer
Dimensions, installed (W x D x H)	39.5" x 45" x 80" (1003 x 1143 x 2032 mm)
Height, sash fully open	Not yet published by CEE for the half size
Width across open sash	44.4" (1130 mm), wider than the cabinet, so allow for it at the sides
Front swing envelope, door fully open	75.3" (1915 mm)
Crated dimensions (W x D x H)	48" x 48" x 87" (1220 x 1220 x 2210 mm)
Machine weight	400 lb (181.4 kg), excluding modules
Shipping weight	800 lb (362.9 kg), excluding modules

4. Utility connections

Connection	Type	Full size	Half size
System nitrogen / CDA	1/4" PTC or FNPT	70 psi	70 psi
System vacuum	1/4" PTC or FNPT	Below 20 inHg (33 kPa abs)	Below 20 inHg (33 kPa abs)
Hood exhaust (ducted exhaust top only)	OD tube	8" at 540 cfm	6" at 540 cfm
Cabinet / drawer exhaust	OD tube	4"	4"
Spinner drain (per spin module)	3/4" OD, external	3/4" OD	3/4" OD
Spinner exhaust (per spin module, X-Pro variant)	2" OD	2" OD	2" OD
Bake plate exhaust (per bake module)	2" OD	2" OD	2" OD
Power in	Single phase, supplied plug	208-230 VAC, 30 A breaker	208-230 VAC, 30 A breaker

Module drain and exhaust requirements don't change with cabinet size. They belong to the process module fitted, not the cabinet.

5. Process module requirements (X-Pro variant)

CEE sells each process module in three mounting variants: benchtop, flange mount and X-Pro. Almost every X-Pro II is supplied with X-Pro variant modules, which mount inside the workstation and take their electrical, vacuum and N₂/CDA from the cabinet utilities in sections 2 to 4. Only the drain and exhaust are specific to each module.

Module	SKU	Drain	Exhaust port	Full load current
Apogee 200 Spin Coater	A-X-SC2-2	3/4" OD	2" OD, 5.8 cfm, 0.4" H ₂ O (100 Pa at 10 CMH)	6 A max
Apogee 450 Spin Coater	A-X-SC3-2	3/4" OD	2" OD, 30 cfm, 0.4" H ₂ O (100 Pa at 50 CMH)	6 A max
Apogee 200 Spin Developer	A-X-SD2-2	3/4" OD	2" OD, 5.8 cfm, 0.4" H ₂ O (100 Pa at 10 CMH)	6 A max
Apogee 450 Spin Developer	A-X-SD3-2	3/4" OD	2" OD, 30 cfm, 0.4" H ₂ O (100 Pa at 50 CMH)	6 A max
Apogee 200 Bake Plate	A-X-BP2-2	n/a	2" OD, 10 cfm, 0.4" H ₂ O (100 Pa at 17 CMH)	6.3 A
Apogee 300 Bake Plate	A-X-BP3-2	n/a	2" OD, 10 cfm, 0.4" H ₂ O (100 Pa at 17 CMH)	16.3 A

Full load current is drawn from the workstation's shared supply, not a separate circuit. It's listed so the modules on an order can be totalled and checked against that unit's data plate, since a heavily configured cabinet can draw more than the 26.2 A headline figure. The exhaust port on X-Pro variant spin modules is 2" OD. The benchtop and flange variants of the same tools use 1" OD (200) or 1 1/2" OD (450), so don't size X-Pro ducts from the benchtop datasheets.

6. Installation clearances

Location	Minimum clearance
Rear	18" (457 mm)
Sides	3" (76.2 mm), plus the extra width of the open sash
Front	Allow for the door swing envelope in sections 2 and 3
Above	Allow for the sash-open height

7. Compliance

The X-Pro II is CE marked. CEE's EC Declarations of Conformity cover every X-Pro II model and the Apogee process modules fitted to it, and we can send copies on request.

8. Installation notes

- Provide a sturdy, level floor. The unit is freestanding and moves on locking casters once unpacked.
- Connect house vacuum to the system vacuum fitting, unless the unit comes with an optional vacuum pump.
- Connect house nitrogen or CDA to the system nitrogen fitting.
- Connect each spin module's drain and exhaust, and each bake module's exhaust, to facility services (sections 4 and 5).
- DI water is only needed where a spin developer has developer spray or backside rinse, and must be supplied below 30 psi.
- The top can be a ducted exhaust enclosure, a fan filter unit (HEPA/ULPA) or ductless recirculation. Check which is quoted: the utility connections stay the same, but the exhaust routing changes. The cabinet exhaust and every module exhaust and drain are needed with every top.
- If the optional safety package is fitted, the monitored utilities must be live before the workstation will start, so commission exhaust and nitrogen before the installation visit.
- Allow the clearances in section 6 for installation and ongoing service access.
- Confirm final connection positions against the approved installation drawing for your system.
- Crates are normally delivered kerbside. You'll need a forklift on site to move them into the building and to lift the workstation off the crate base once the top and side panels are removed.

- SiSTEM can arrange forklift hire for you at extra cost, depending on the access and lifting capacity needed. Send us your site access details in advance so we can scope it.

9. Reference drawings

Full size

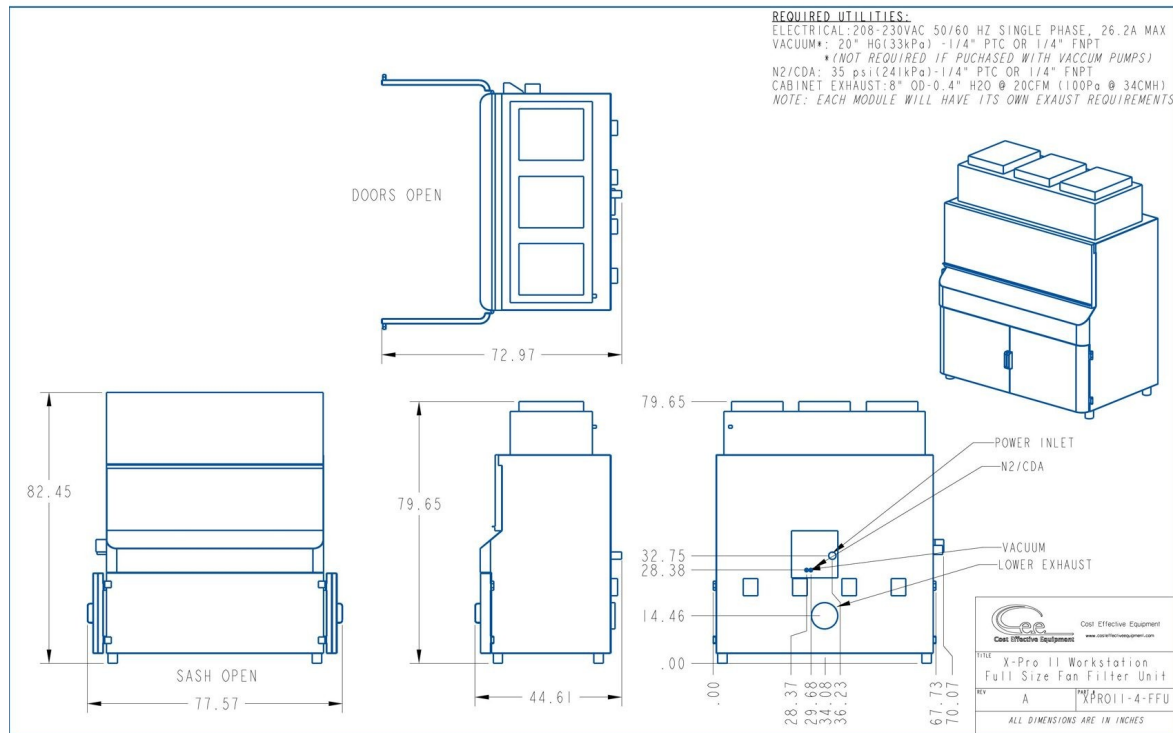


Figure 1 Full-size fan filter unit (FFU): elevations, clearances and utility connections

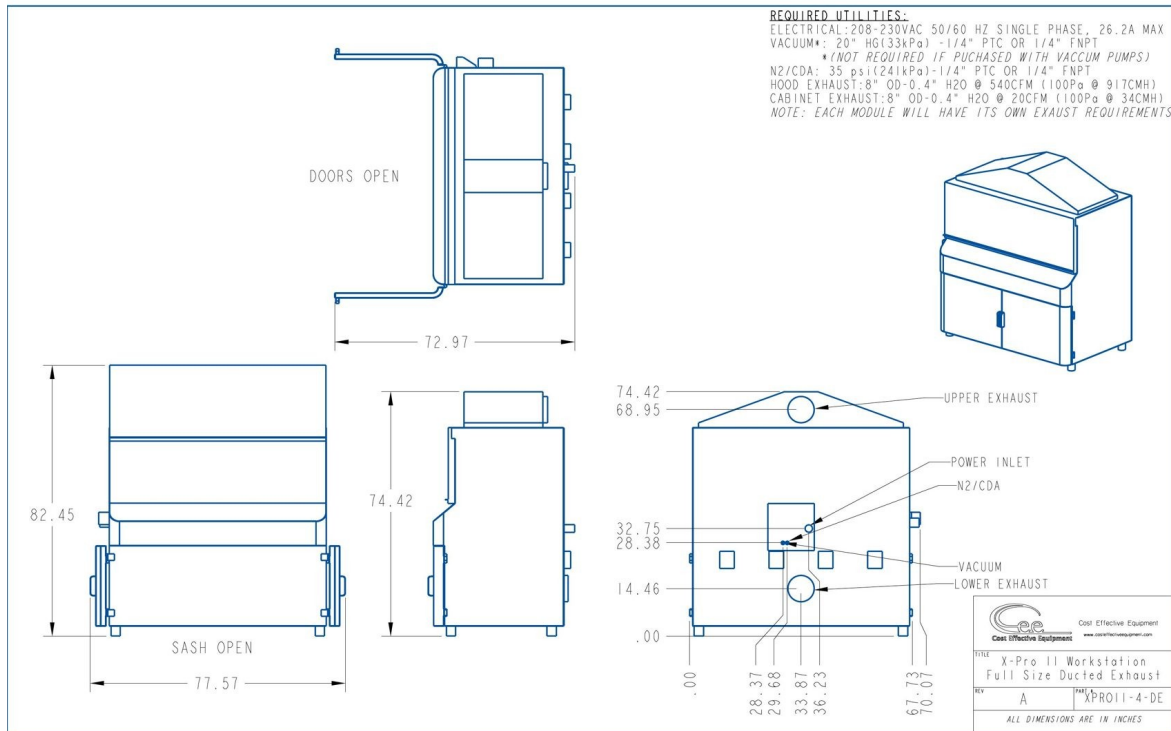


Figure 2 Full-size ducted exhaust: elevations, clearances and utility connections, including the hood exhaust

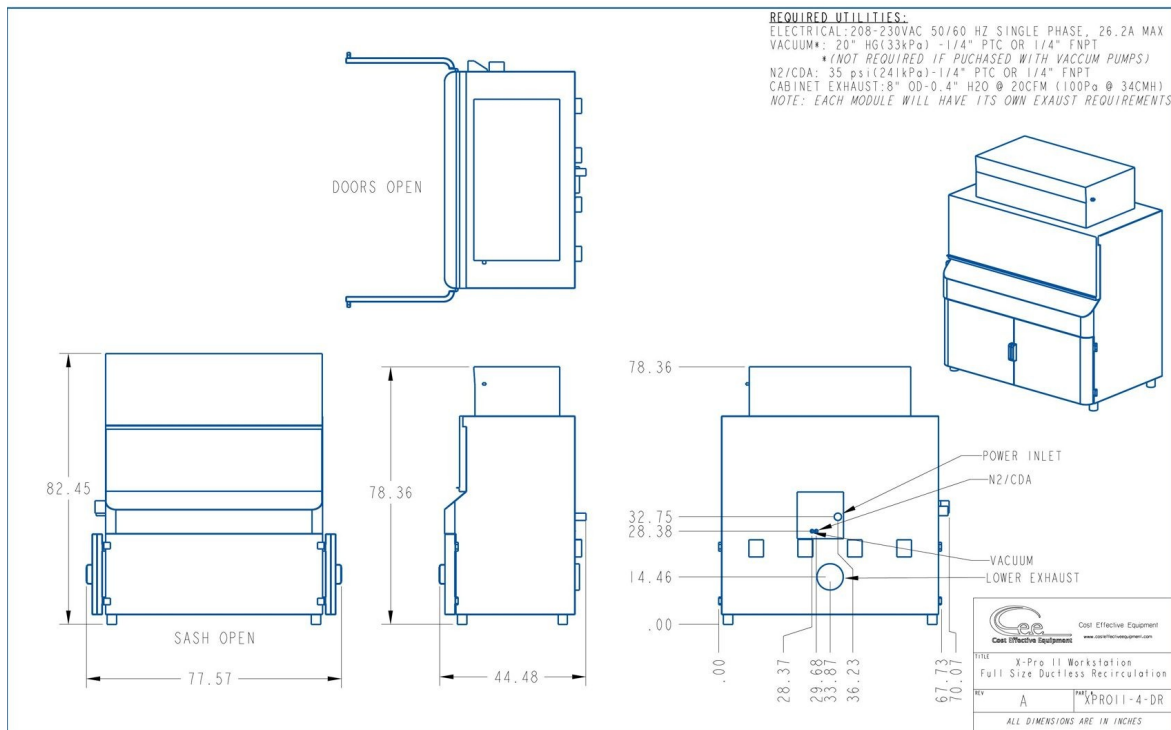
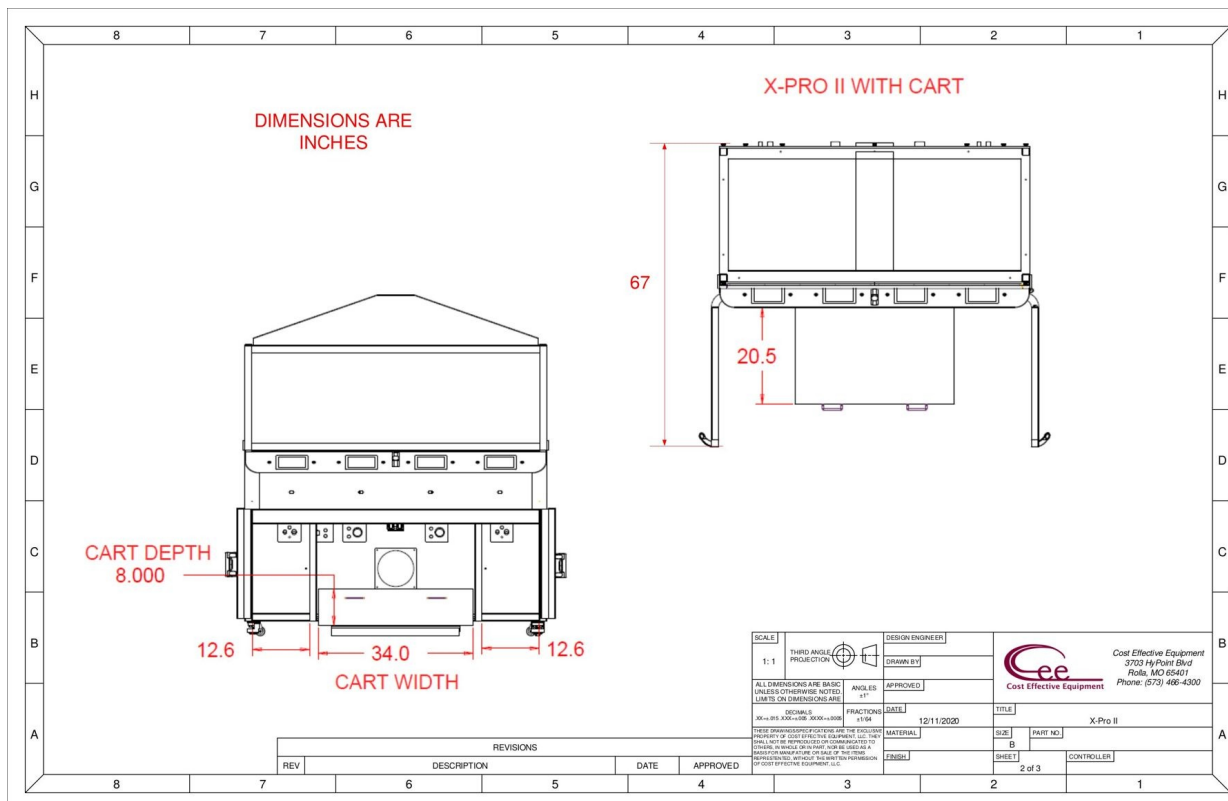
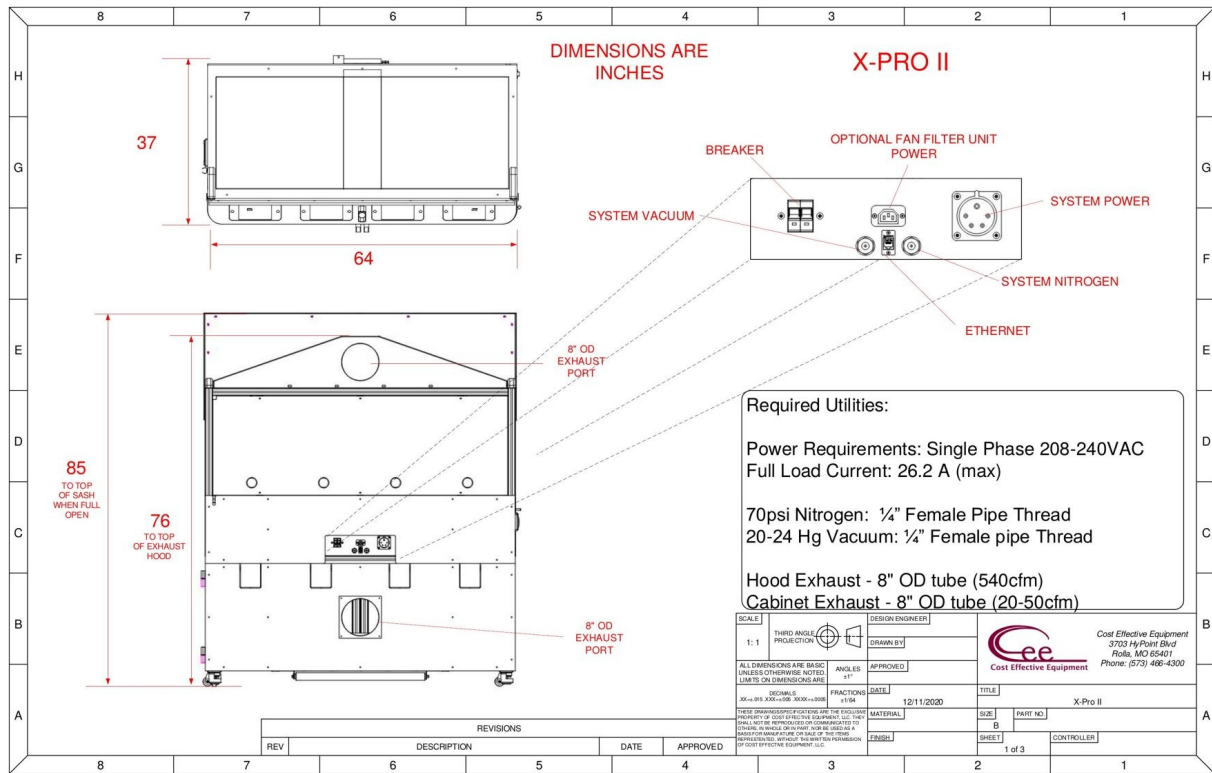


Figure 3 Full-size ductless recirculation: elevations, clearances and utility connections



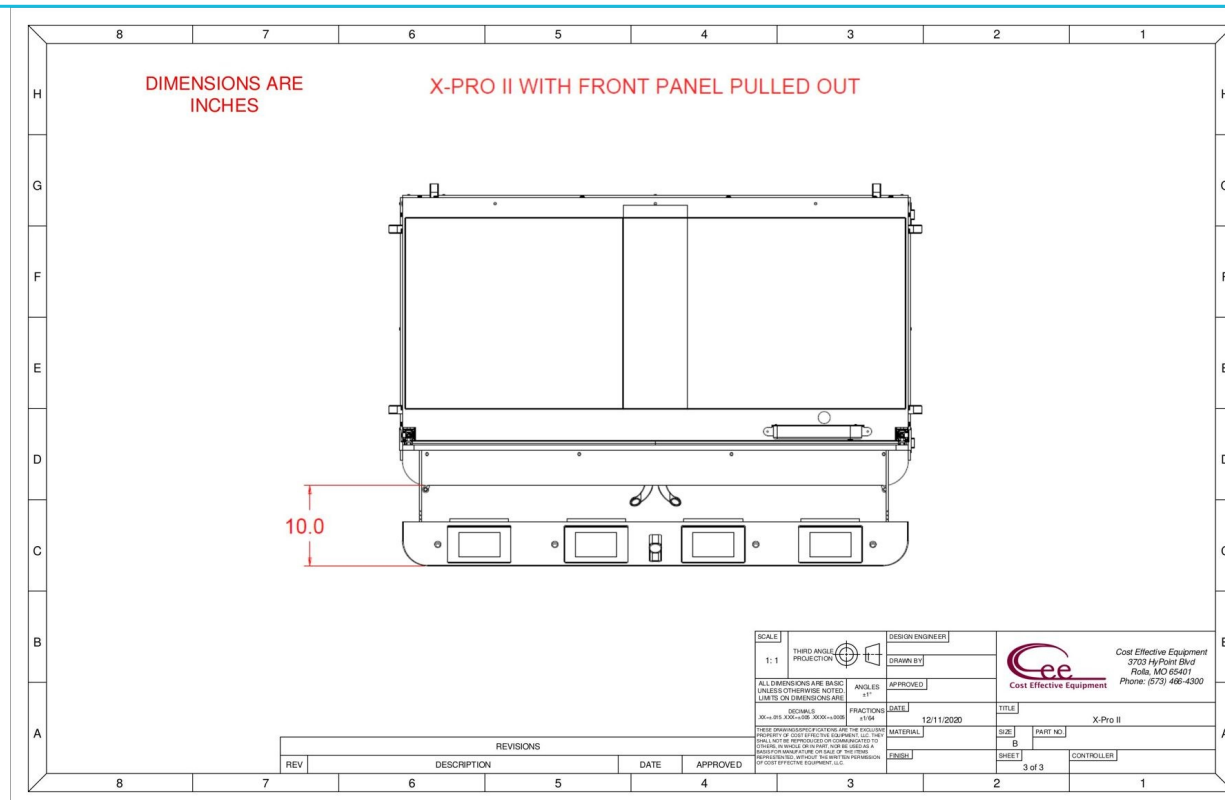


Figure 6 *X-Pro II with the front panel pulled out: service access*

Half size

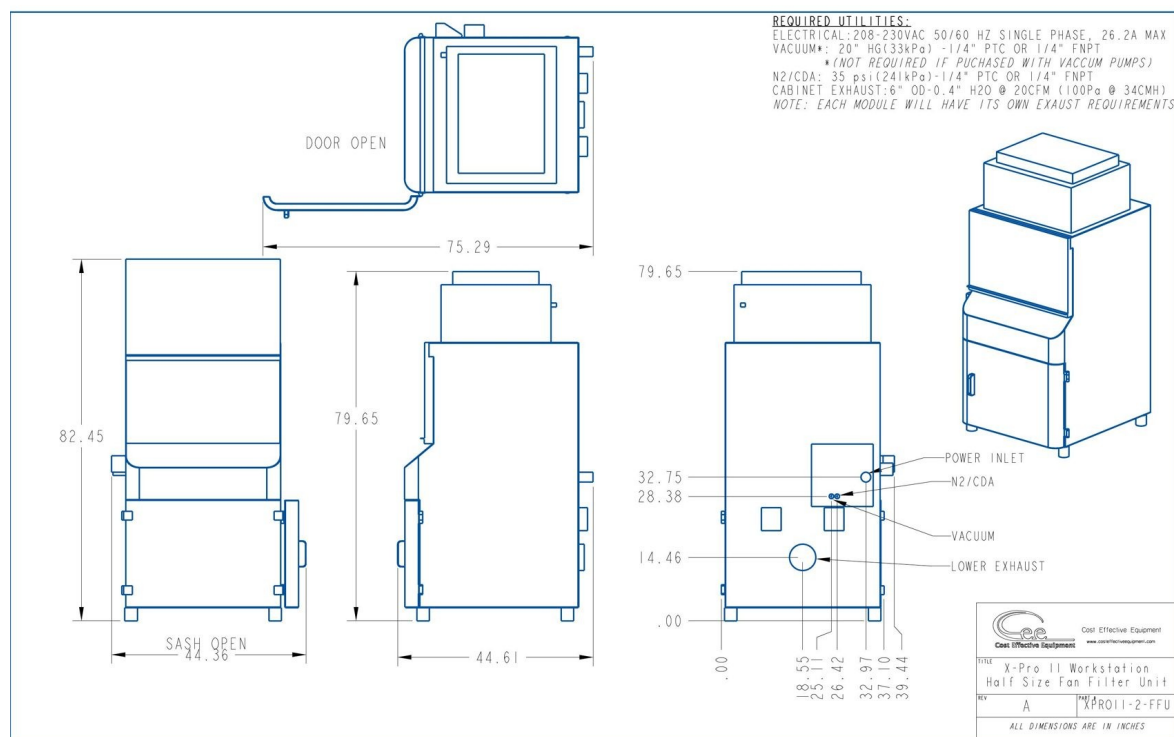


Figure 7 Half-size fan filter unit (FFU): elevations, clearances and utility connections

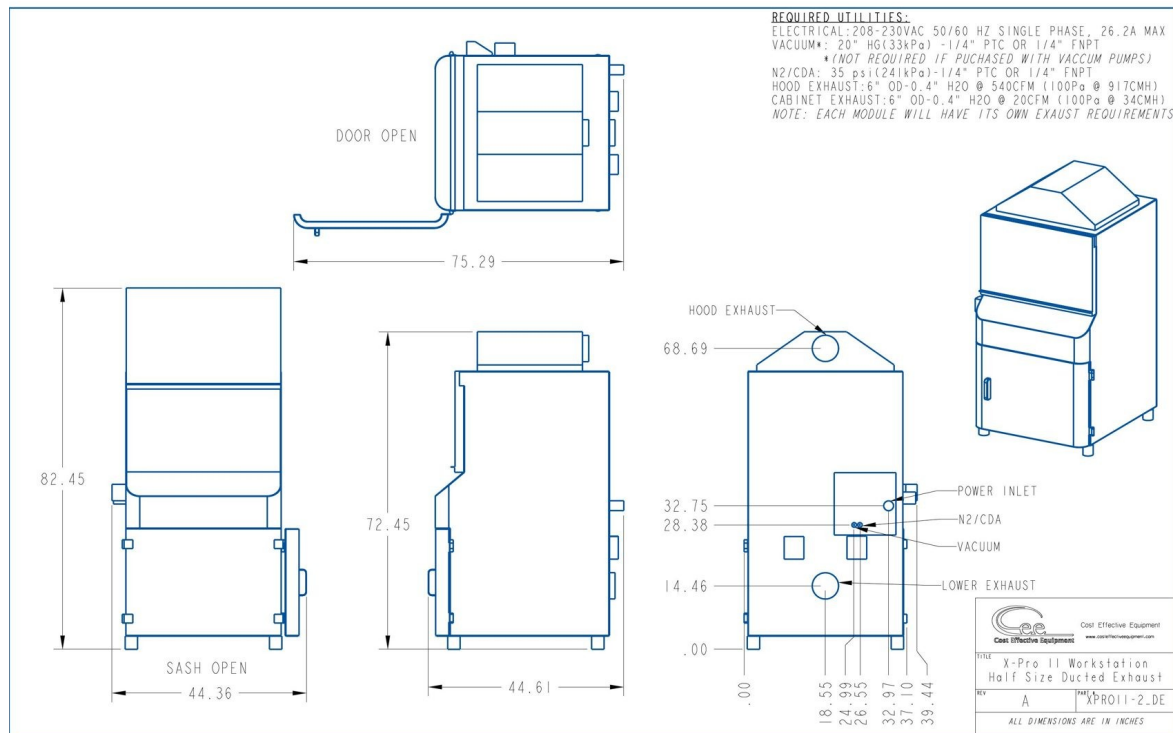


Figure 8 Half-size ducted exhaust: elevations, clearances and utility connections, including the hood exhaust

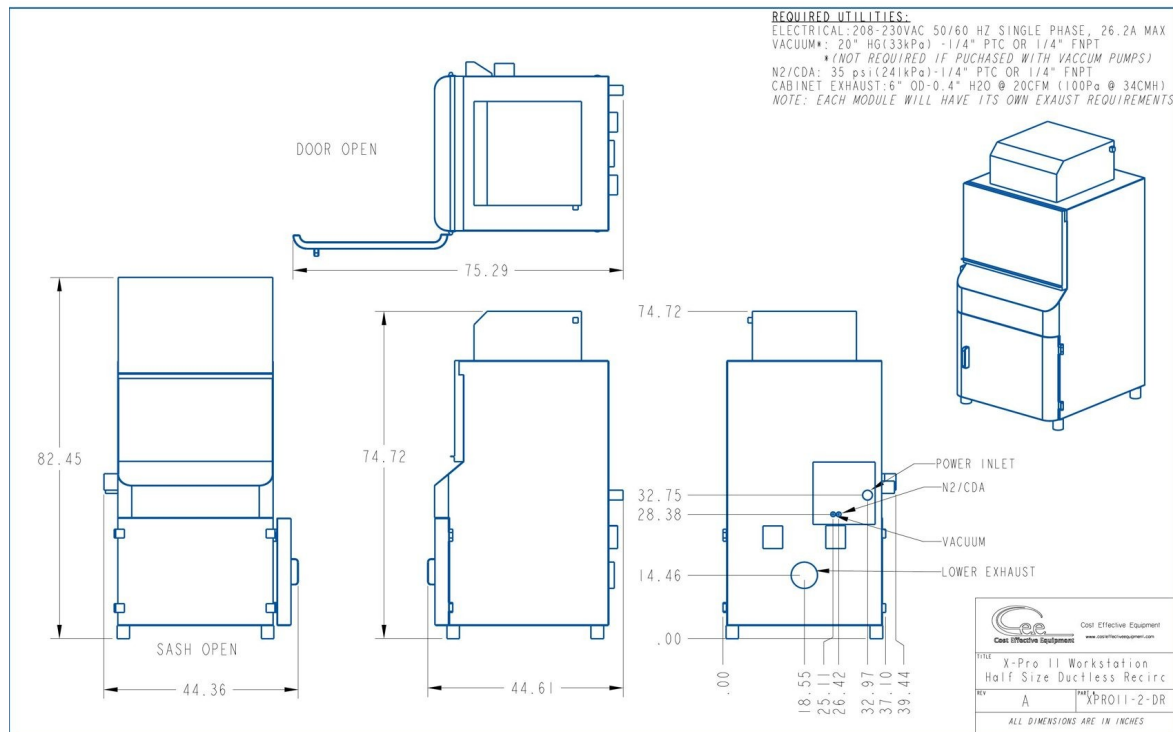


Figure 9 Half-size ductless recirculation: elevations, clearances and utility connections

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