

## Mini Computer Room Units

PASC CM Series  
 Ceiling / Floor / Wall Mounted  
 (19-110 Nominal MBH)

**2017**  
 Quality HVAC  
 Equipment



These marks apply to different products manufactured by Petra Engineering Industries Co.



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# Mini Computer Room Units

## Introduction

Petra Engineering Industries Company is a highly established HVAC manufacturing company that produces a wide range of sophisticated, high quality commercial and industrial HVAC equipment. Petra's products meet the requirements of globally recognized standards and procedures

To ensure the highest level of quality all procedures are carried out in accordance with ISO 9001:2008 Quality management systems and ISO14001:2004 environmental management system. Also, all Petra's major products are UL, ETL listed & AHRI certified

## Responsibility

Petra understands the importance of environmental control for sensitive equipment and offers its Mini Computer Room Split Air Conditioner "PASC CM" series. PASC CM Series is specifically designed to be used wherever temperature, humidity and filtered air have to be controlled continuously within close tolerance limits

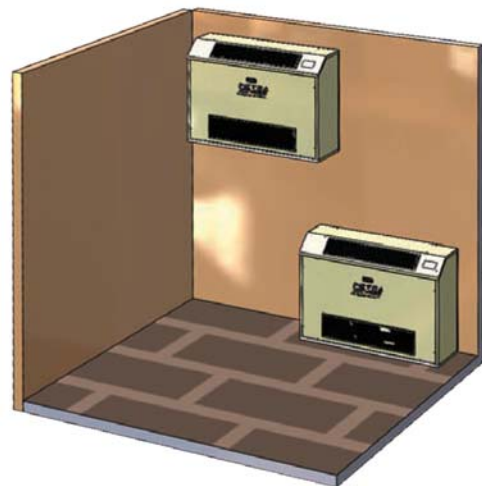
## Why to Choose Petra

Petra PASC CM units have been developed and based on proven design and in-house testing according to the highest international standards. It is used in various systems all over the world

Petra PASC CM units provide the highest energy efficiency and thus provide the lowest operating cost. This is achieved by using the most reliable and energy efficient electronic components. Savings are obtained by using Petra "piece of art" microprocessor controller

## Compact Physical Footprint

PASC CM units feature slim & compact footprints and are suitable for minimal service requirement spacing installation



Petra special compact design for PASC CM units requires minimal floor space. No floor space is required in the case of wall mounted

## Reliability

Unmatched corrosion resistance with oven baked polyester electrostatic powder coat certified up to 5,000 hours salt spray test as per ASTM 117 A&B

Microprocessor controller built to space requirements with intelligent alarm and diagnostic system that can prevent a problem before it occurs

Full refrigerant system control with air delivery variation to deliver the specific space load requirements with the lowest energy consumption ever

## Flexibility

Wall mounted and floor mounted configurations are available to suit a wide range of rooms applications. Front access panel for service and maintenance, that saves floor space. Front access allows Petra PASC CM to be mounted against a wall or partitions on adjacent to or back at other equipment. Built-in humidity and reheat devices. Ozone friendly refrigerants (R-407c & R-410a). Full microprocessor control panel with different BMS connectivities and full diagnostic system

## Full Control

Sensitive Electronic devices require demanding & controllable environment throughout the year (24/7). Such devices have to be controlled in terms of humidity and internal temperature to close tolerance limits

Typical requirements of such environment is to maintain internal conditions between 16-28 °C (60.8-82.4 °F) with moisture content of 50-60% relative humidity. Computers & communications systems generate 6-10 times the heat load of normal occupied spaces and they require state of art air conditioning equipment to control them

## Applications

Petra PASC CM units can be installed in data centers, telecommunications centers, laboratories, computer server data rooms, network operation centers, testing facilities and others

# Mini Computer Room Units

## Microprocessor Controller

The efficient performance & the advanced functions of PETRA mini computer room units impose to have a control strategy that can embody & satisfy these features.

This control strategy offers a smart & precise control of temperature & humidity required for the critical applications like server rooms, data centers Laboratories, Telecommunication room, etc.



Here, it's good to mention some of the advanced & strong features of this control:

- 1- The Continuous & fast technological development is reflected in the evolution of this control so that it is up to date.
- 2- Connectivity: the controller of this unit features numerous plug in options for communicating with the most commonly-used BMS.
- 3- Monitoring & Setting the various unit's parameters through user-friendly & attractive keypad with LCD & Plug and Play technology
- 4- Precise humidity & temperature control that is compatible with the sensitive nature of the environment being controlled
- 5- Ability to receive the unit's alarms via mobile SMS (Optional)





# Mini Computer Room Units

## Introduction

Petra's PASC CM Precision Cooling systems control the cooling, humidity and air distribution required by sensitive electronic equipment with range of sizes and configurations in order to meet varying sites' needs. Advanced microprocessor technology allows easy, precise control, and menu-driven monitoring keeps you informed of system operation. These features, combined with Petra's quality construction and reliable components, guarantee satisfaction from installation through operation

## Filters

- > Factory installed 1" aluminum filter (MERV 4)
- > Pleated & Synthetic media filters are also available



## Steam Humidifier

- > Self-contained steam cylinder type complete with electronic controls for water level regulation and automatic flushing



## Construction

- > Insulated by closed cell foam insulation with aluminum foil
- > Floor or wall mounted construction
- > Galvanized steel painted with electrostatic oven baked powder paint with 5000 hours spray test certified according to (ASTM 117 A&B)

## Electric heater

- > Finned sheathed tube electric heating elements (SS)
- > Mounted on the coil face to reduce unit footprint
- > Automatic & Manual safety cutout are included



## Coils

- > Coils are manufactured from seamless copper tubes mechanically expanded into aluminum fins
- > All coils are manufactured in house in PETRA factory
- > Stainless steel drain pan under coil with closed cell foam insulation with aluminum foil

## Supply Fan

- > Standard DWDI forward curved fans (direct drive)
- > Fans are statically and dynamically balanced
- > Single phase direct drive motors (PSC type)
- > Motor isolated by rubber-in-shear vibration isolator

## Petra LCD Keypad

- > Used to interface with unit main microprocessor (mounted on outdoor remote condenser) to control & monitor the unit's parameters & readings such as temperatures, alarms, changing the unit on/off, controlling the temperature set point...etc.



# Mini Computer Room Units

## Outdoor Unit

- > Copper tubes & Aluminium fins condenser coil
- > Propeller direct drive condenser fans
- > Zinc coated galvanized steel painted with electrostatic powder paint, oven baked
- > Hermetic scroll compressors running on R410a / R407c refrigerant

## Unit Name Plate



## Microprocessor Controller



- > (Mounted on outdoor remote condenser unit)
- > Programmable microprocessor controller, developed for a wide range of applications for the management of air conditioning units
- > Set parameters are permanently saved in the flash memory, preventing data loss in the case of power failure (back up battery is not required)
- > Microprocessor controller is connected to LCD keypad mounter on indoor unit

## R407c Performance Data

Model Name (Outdoor + Indoor)	Ambient Temperature			
	95 °F		115 °F	
	Cooling Capacity (Btu/Hr)	EER	Cooling Capacity (Btu/Hr)	EER
DSPc 18 + PASC CM 15	21,289	11.69	18,974	9.08
DSPc 24 + PASC CM 15	24,658	11.80	22,184	9.17
DSPc 36 + PASC CM 20	42,791	11.67	39,291	9.04
DSPc 48 + PASC CM 20	56,073	11.84	50,920	9.17
DSPc 60 + PASC CM 24	66,304	11.79	58,446	9.12
DSPc 95 + PASC CM 30	101,904	11.69	92,061	9.05

## R410a Performance Data

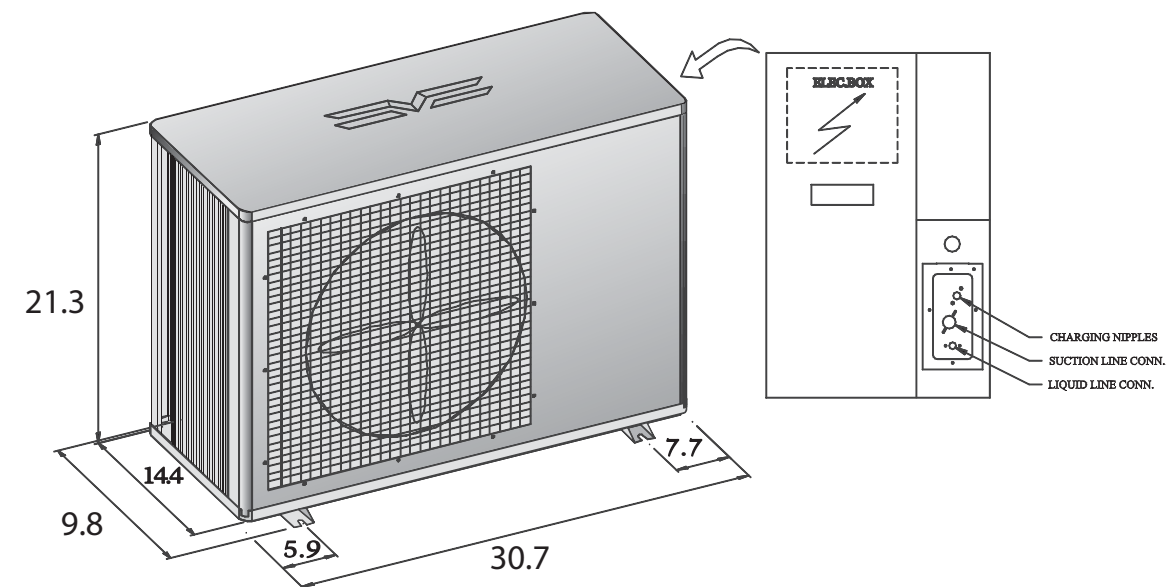
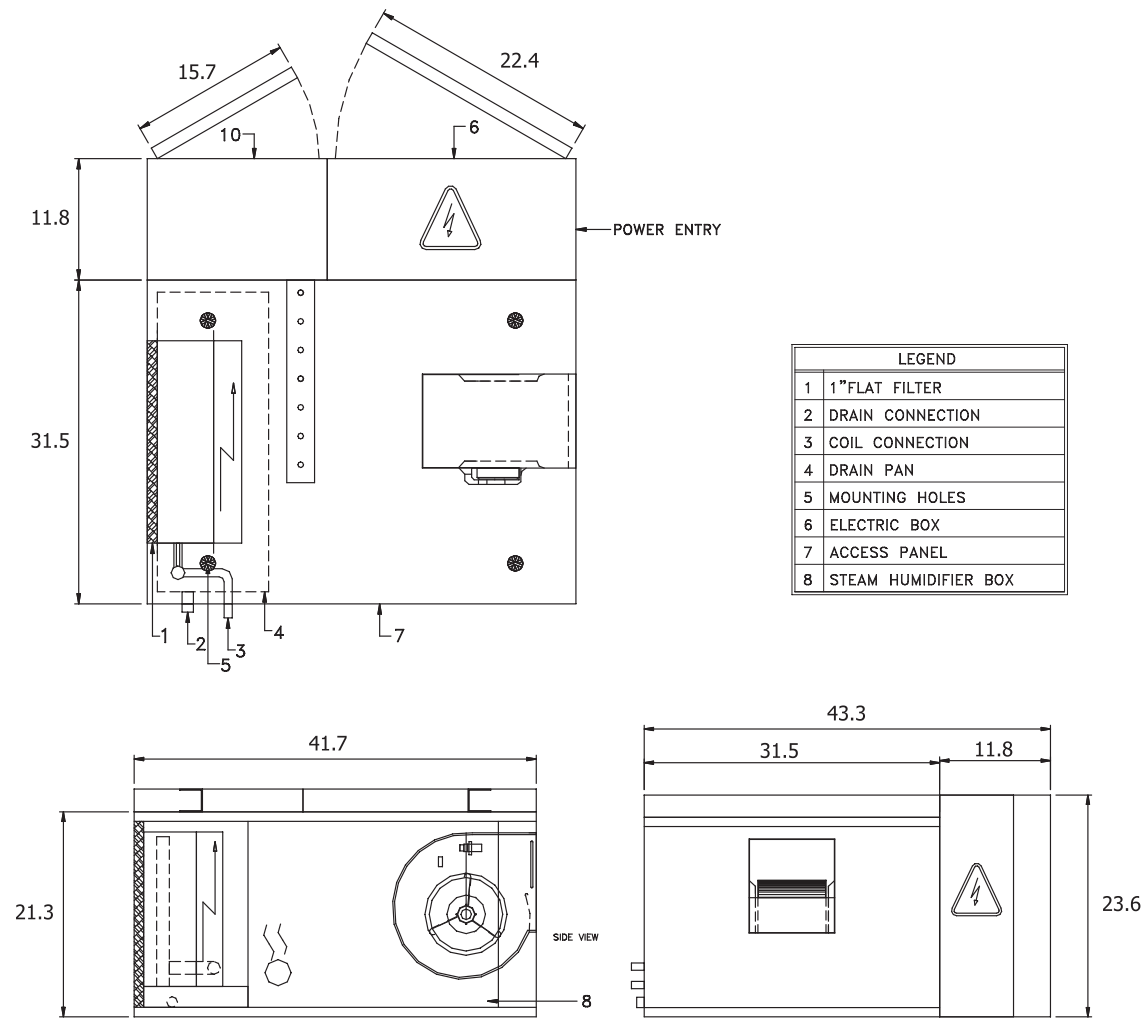
Model Name (Outdoor + Indoor)	Ambient Temperature			
	95 °F		115 °F	
	Cooling Capacity (Btu/Hr)	EER	Cooling Capacity (Btu/Hr)	EER
DSP4 18 + PASC CM 15	25,127	11.74	21,304	9.03
DSP4 24 + PASC CM 15	28,422	11.82	25,448	9.08
DSP4 36 + PASC CM 20	41,333	11.68	37,188	8.98
DSP4 48 + PASC CM 20	56,011	11.85	54,653	9.10
DSP4 60 + PASC CM 24	69,458	11.79	64,131	9.07
DSP4 95 + PASC CM 30	109,420	11.71	98,983	9.01

\* Above data was calculated based on ANSI/AHRI Standard 210/240 Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment & ANSI/ASHRAE Standard 37-2009-Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment

# Mini Computer Room Units

## Ceiling Type Drawings

DSP 18 + PASC CM 15

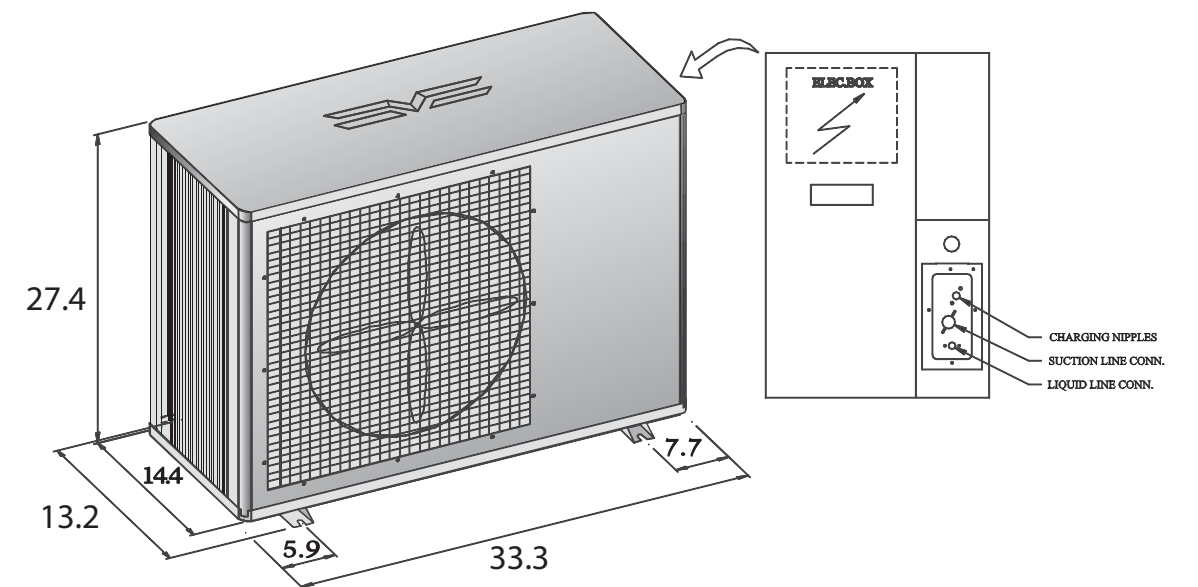
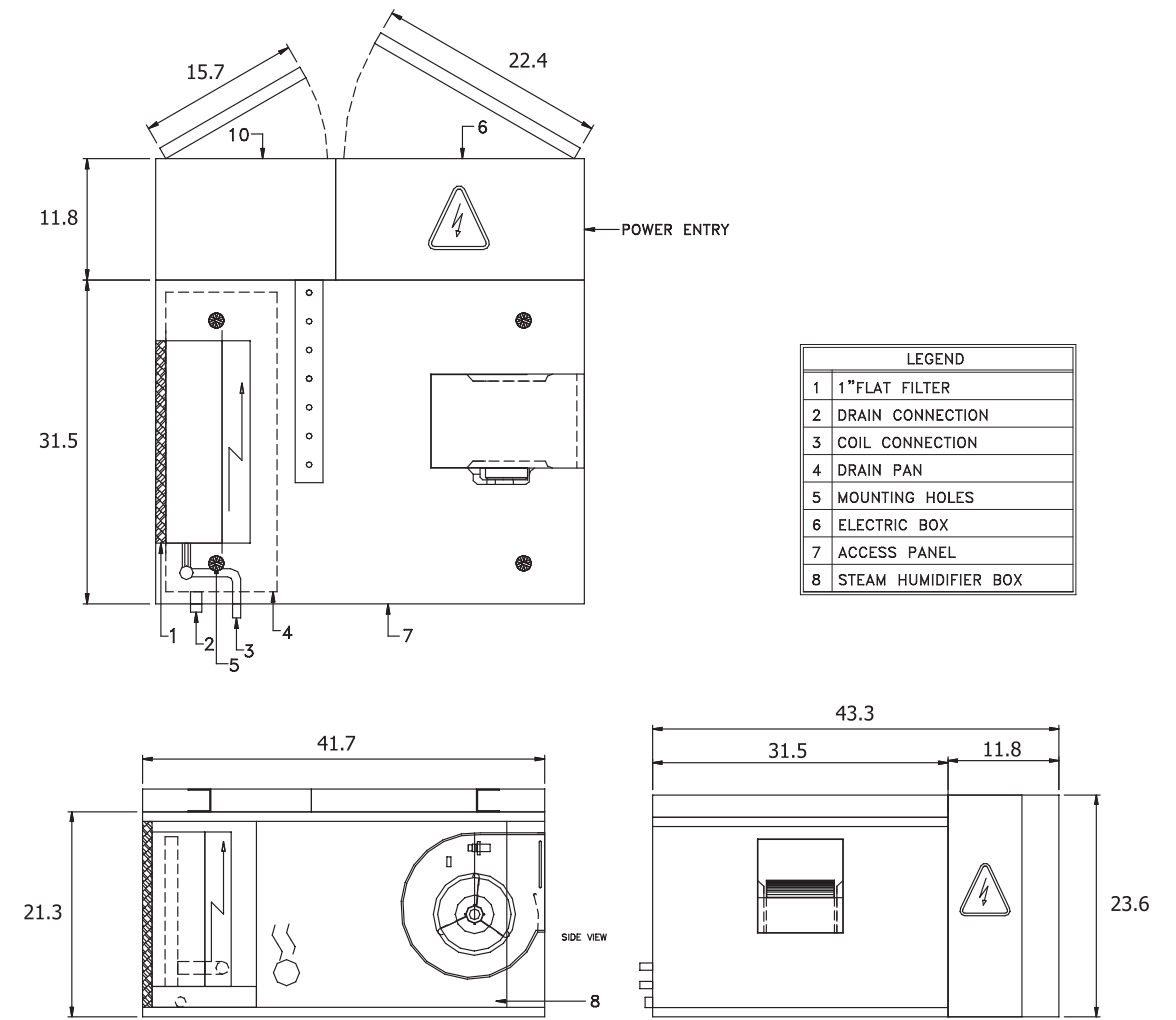


All dimensions are in inch

# Mini Computer Room Units

## Ceiling Type Drawings

DSP 24 + PASC CM 15

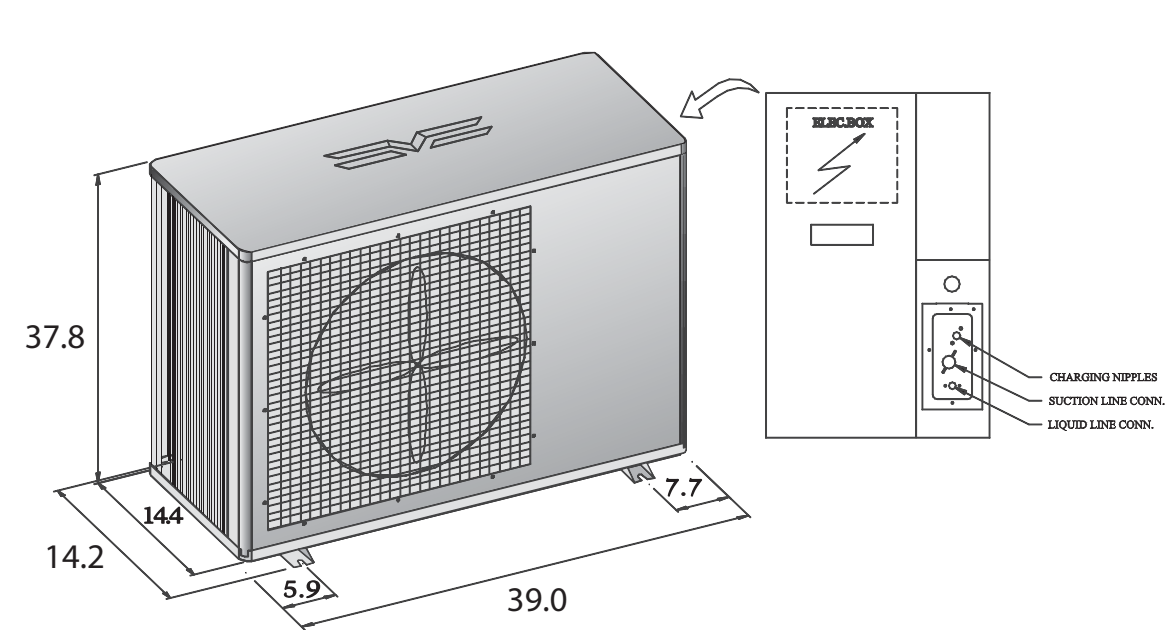
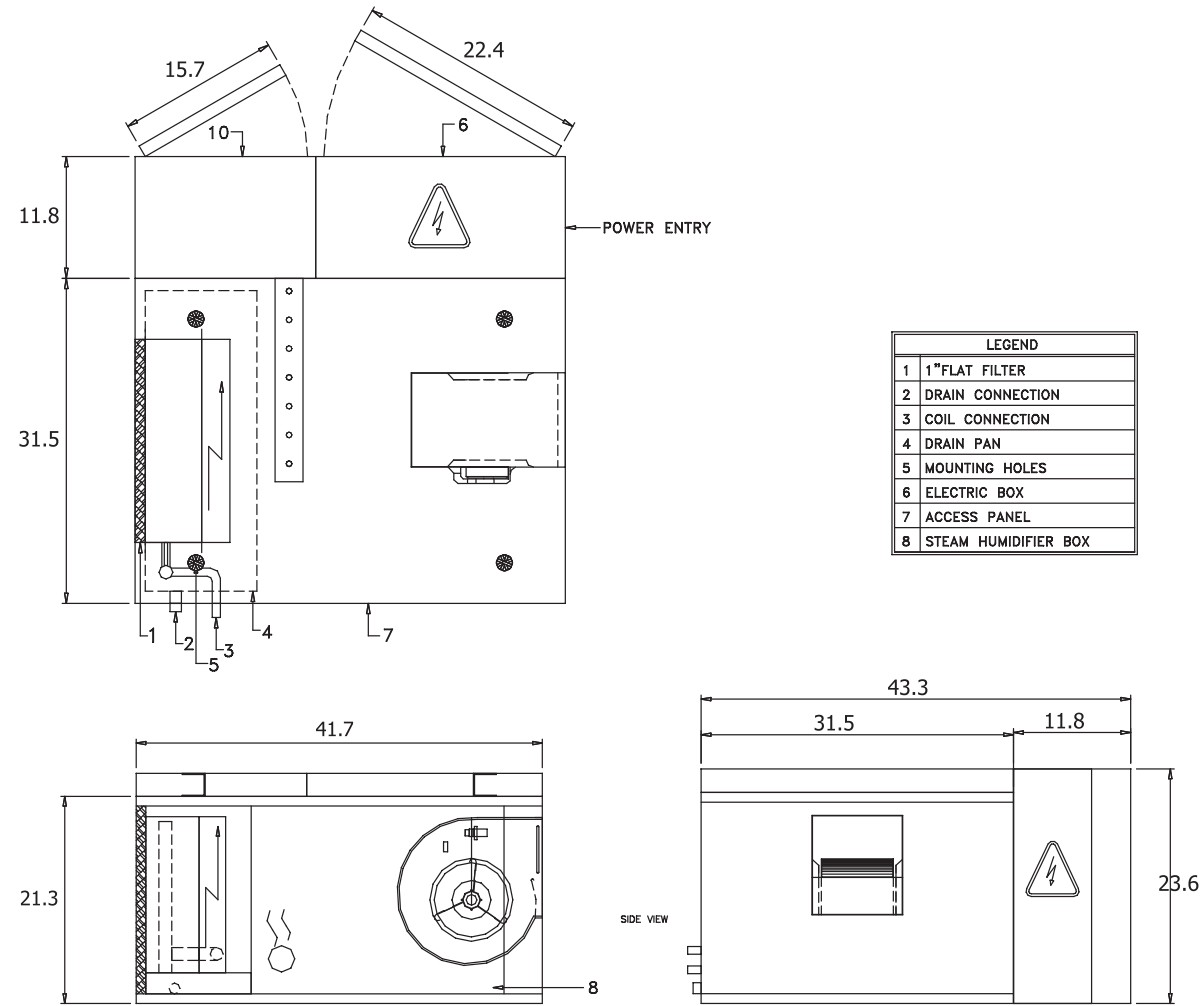


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# Mini Computer Room Units

## Ceiling Type Drawings

DSP 36 + PASC CM 20

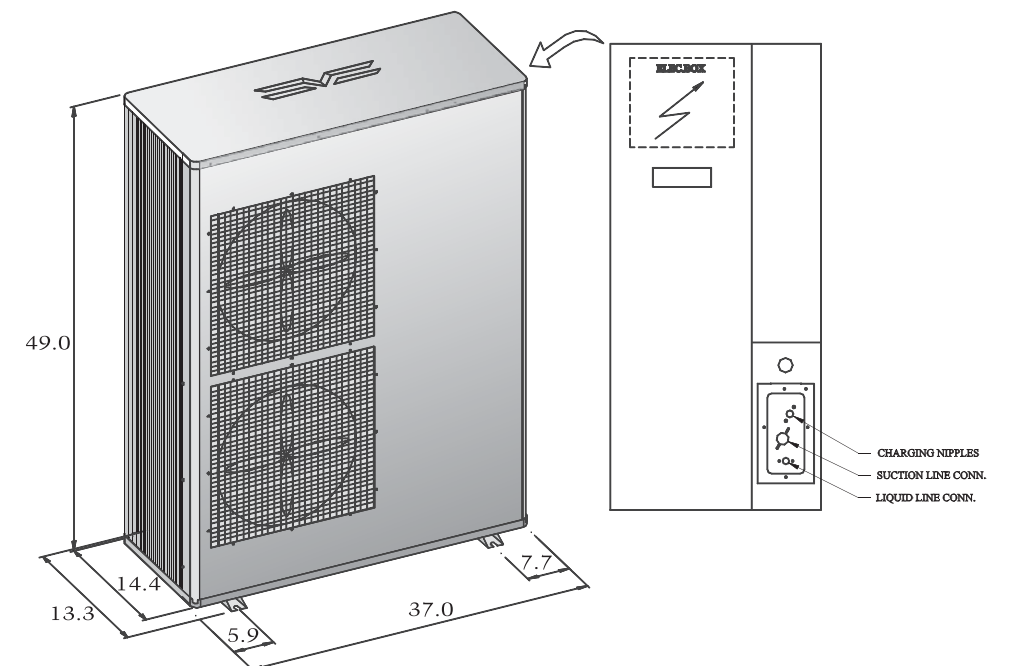
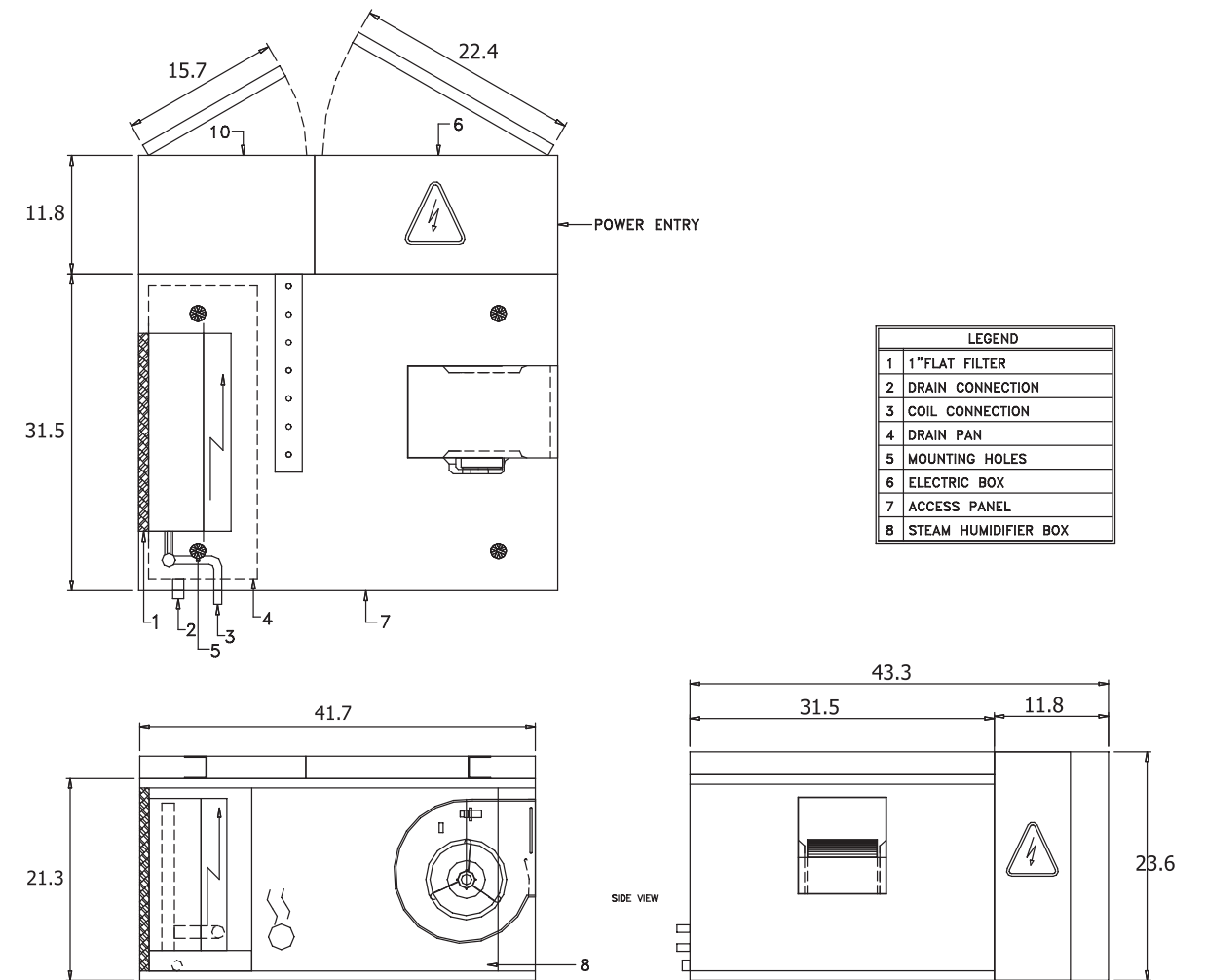


All dimensions are in inch

# Mini Computer Room Units

## Ceiling Type Drawings

DSP 48 + PASC CM 20

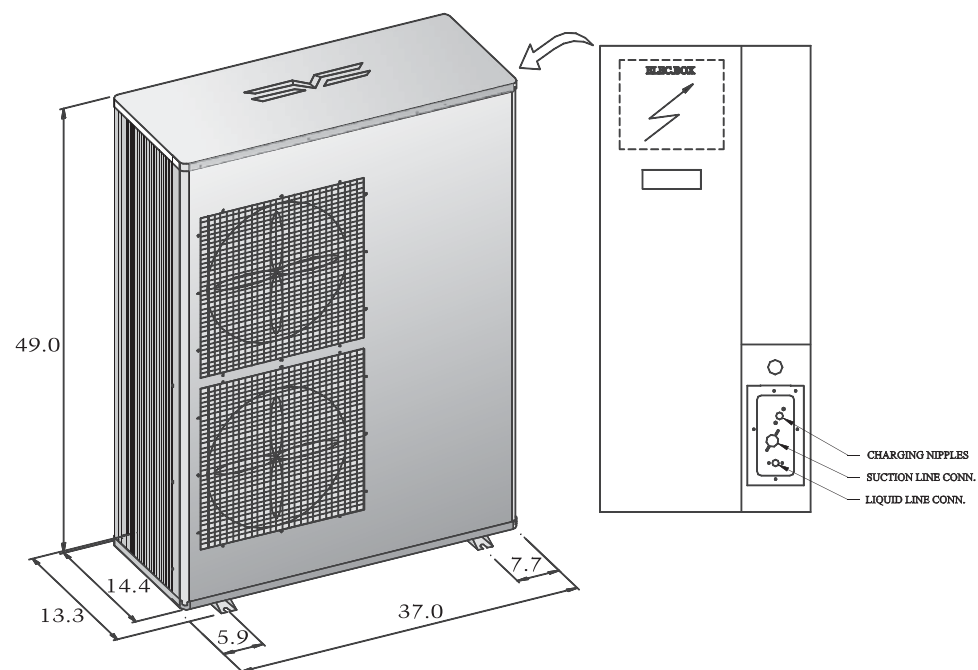
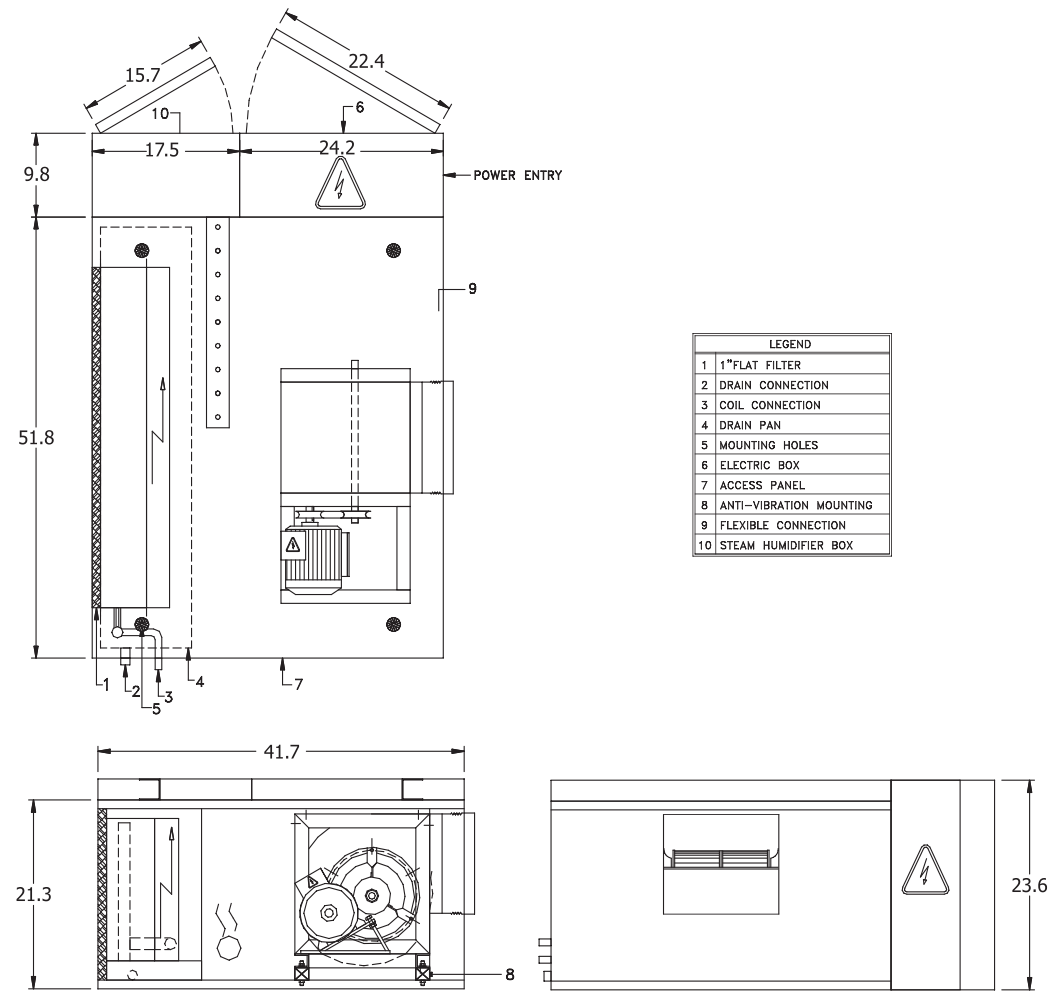


All dimensions are in inch

# Mini Computer Room Units

## Ceiling Type Drawings

DSP 60 + PASC CM 24

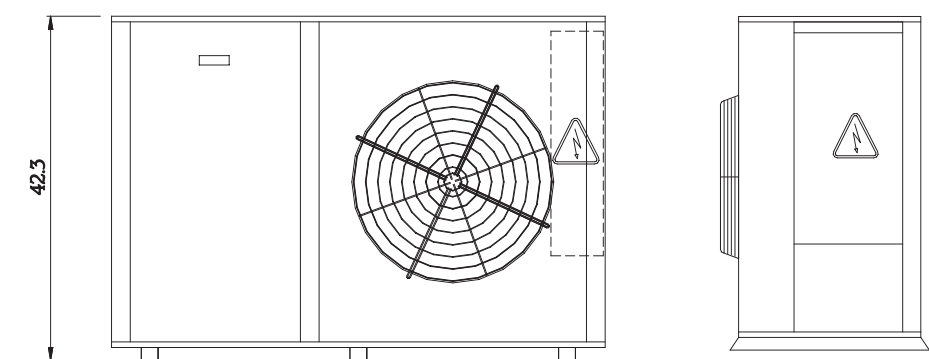
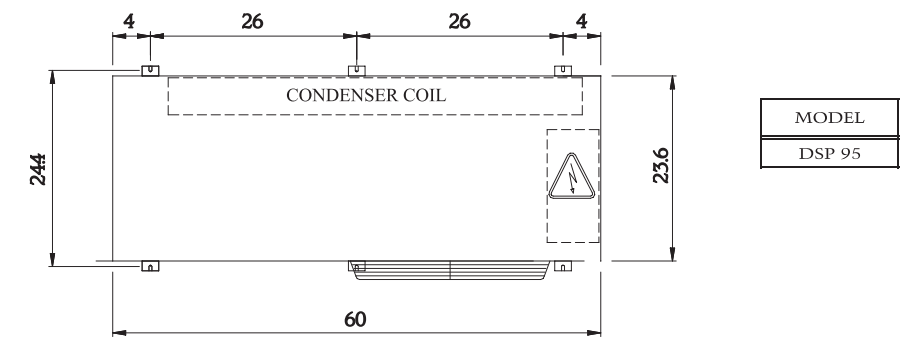
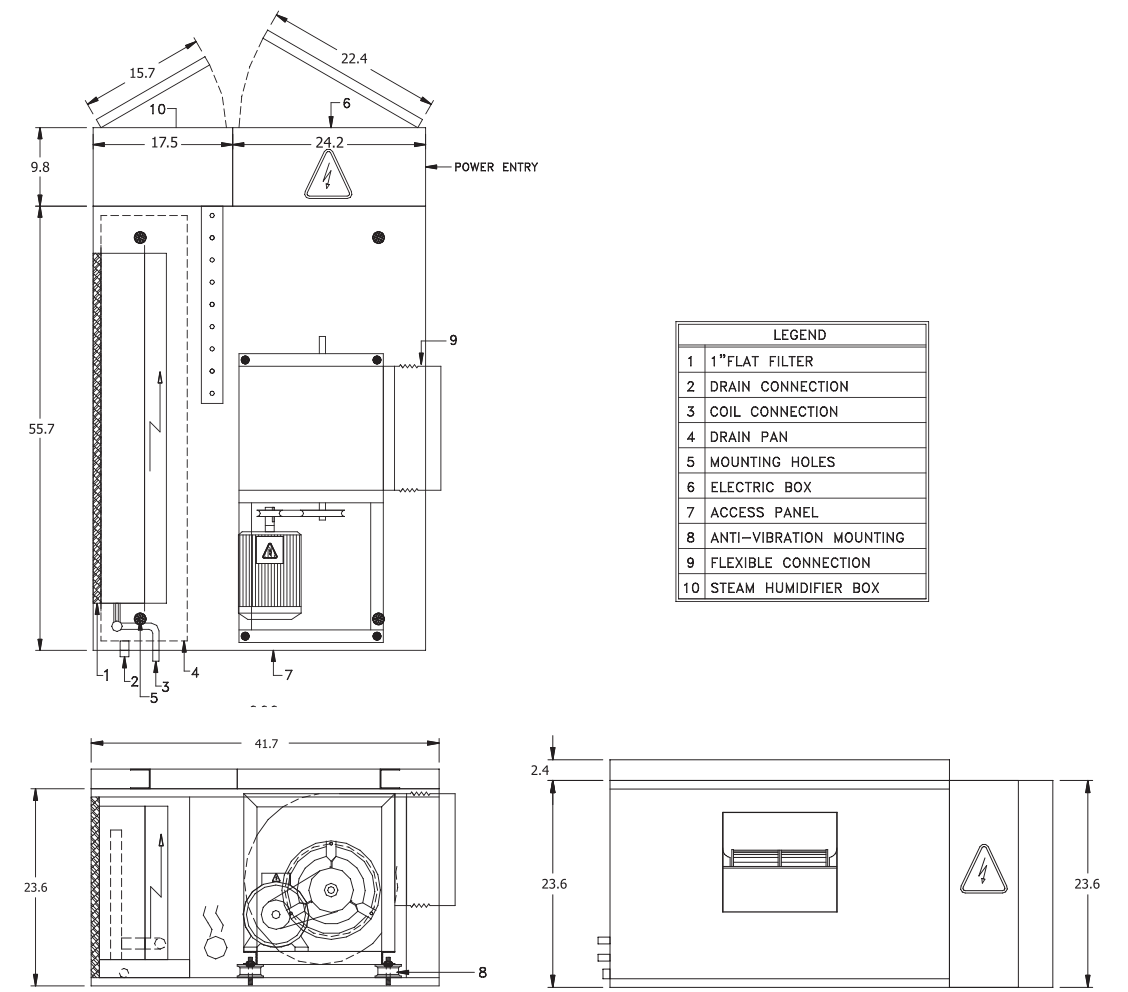


All dimensions are in inch

# Mini Computer Room Units

## Ceiling Type Drawings

DSP 95 + PASC CM 30

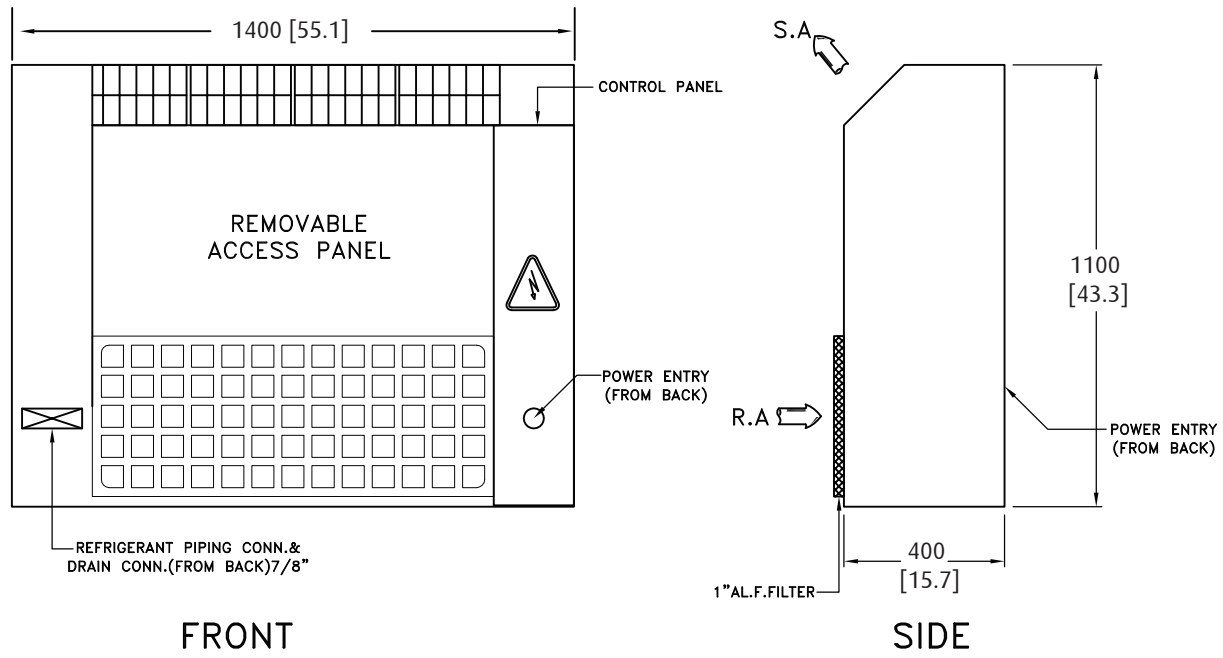


All dimensions are in inch

# Mini Computer Room Units

## Floor / Wall Type Drawings

DSP 18 + PASC CM 15



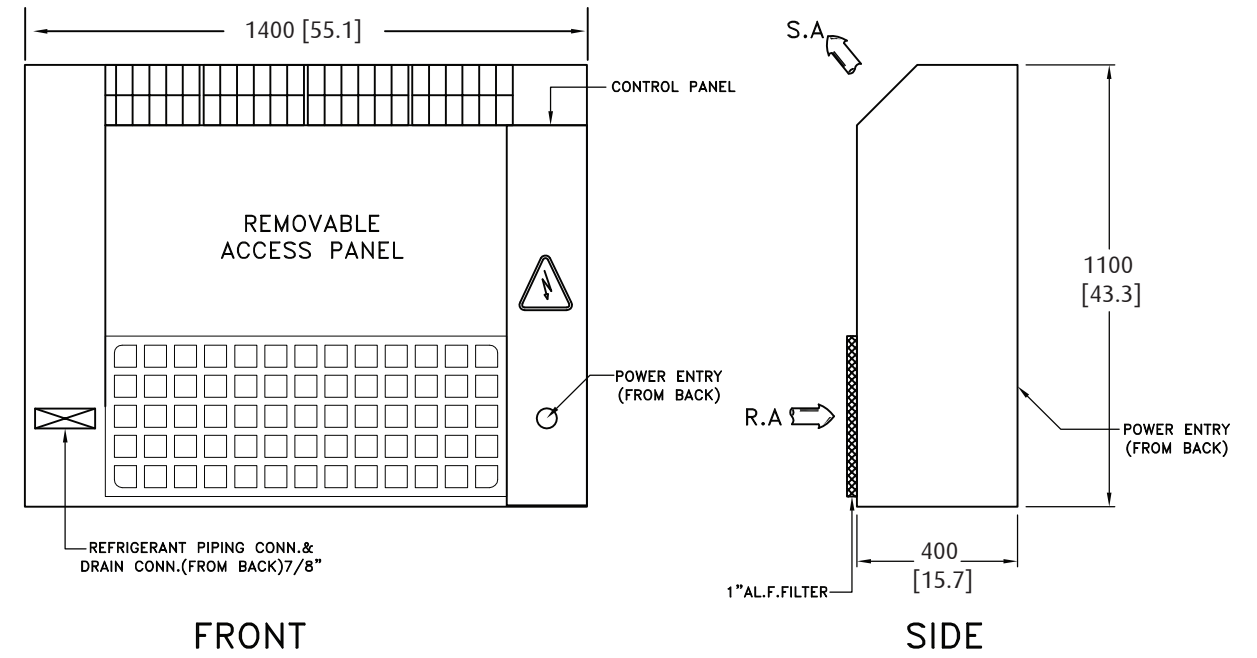
FRONT

SIDE

# Mini Computer Room Units

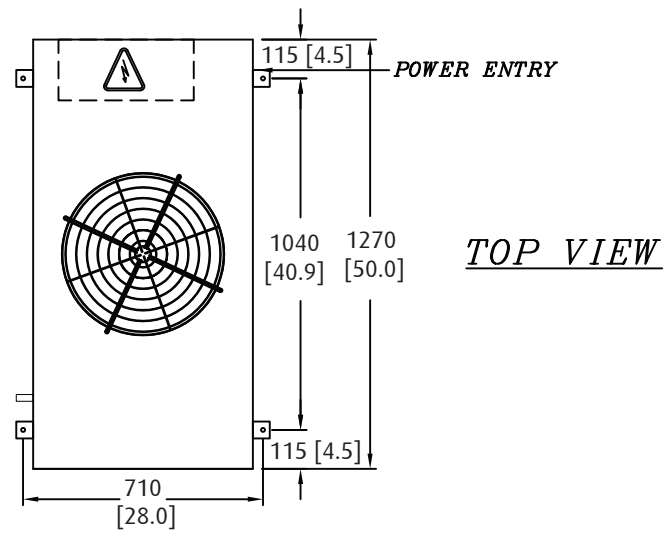
## Floor / Wall Type Drawings

DSP 24 + PASC CM 15

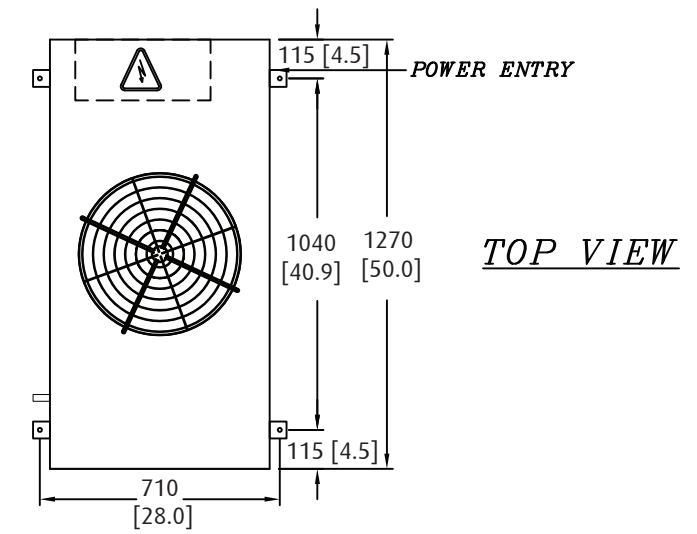


FRONT

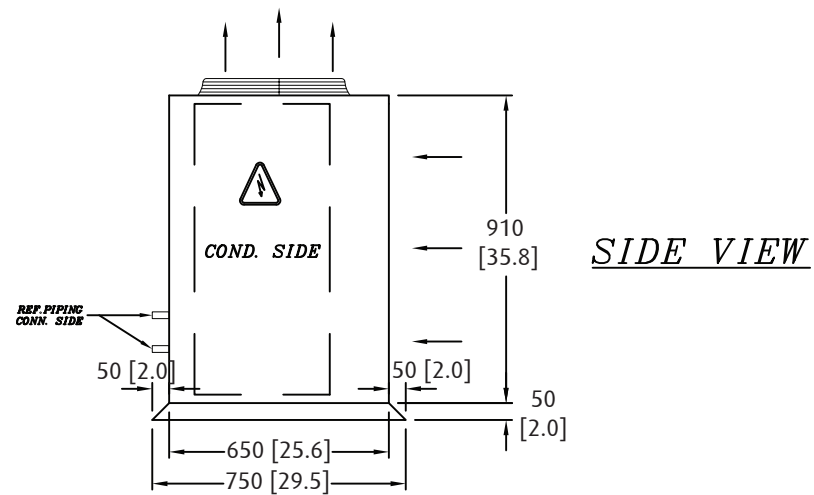
SIDE



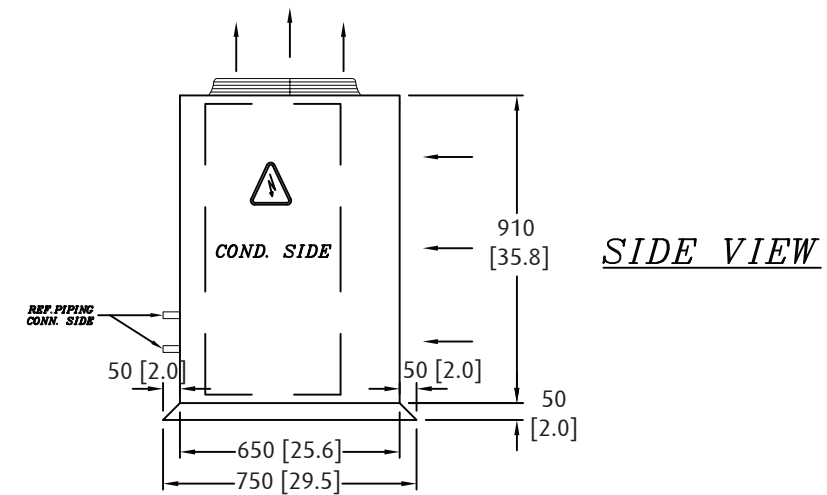
TOP VIEW



TOP VIEW



SIDE VIEW



SIDE VIEW

All dimensions are in mm[inch]

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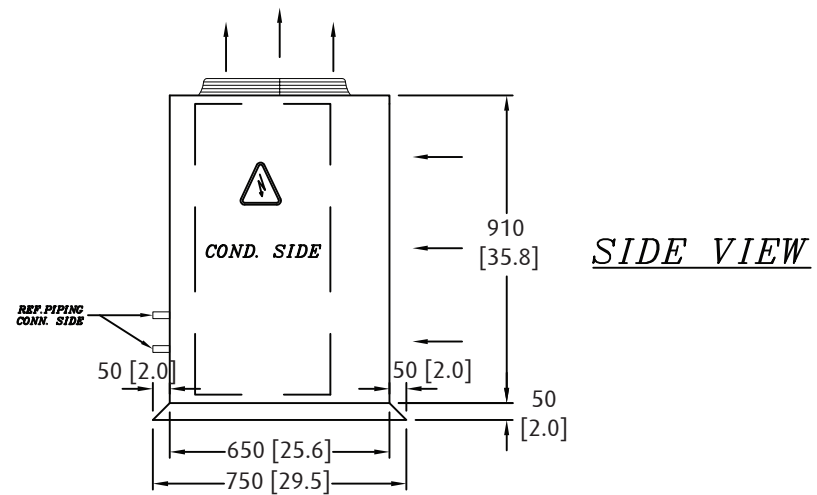
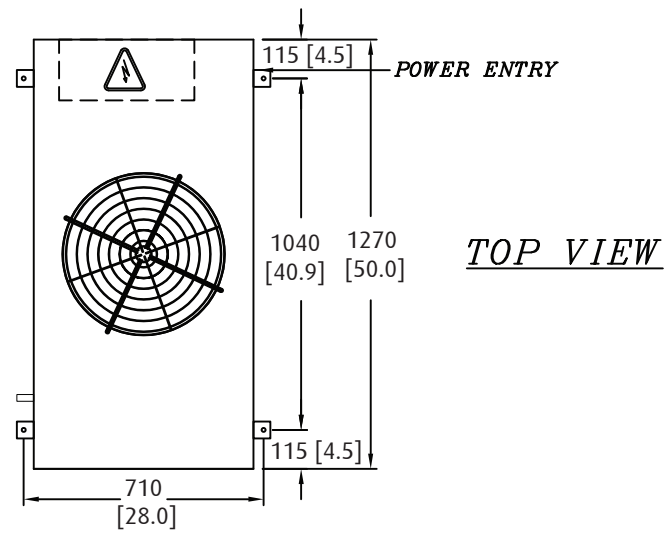
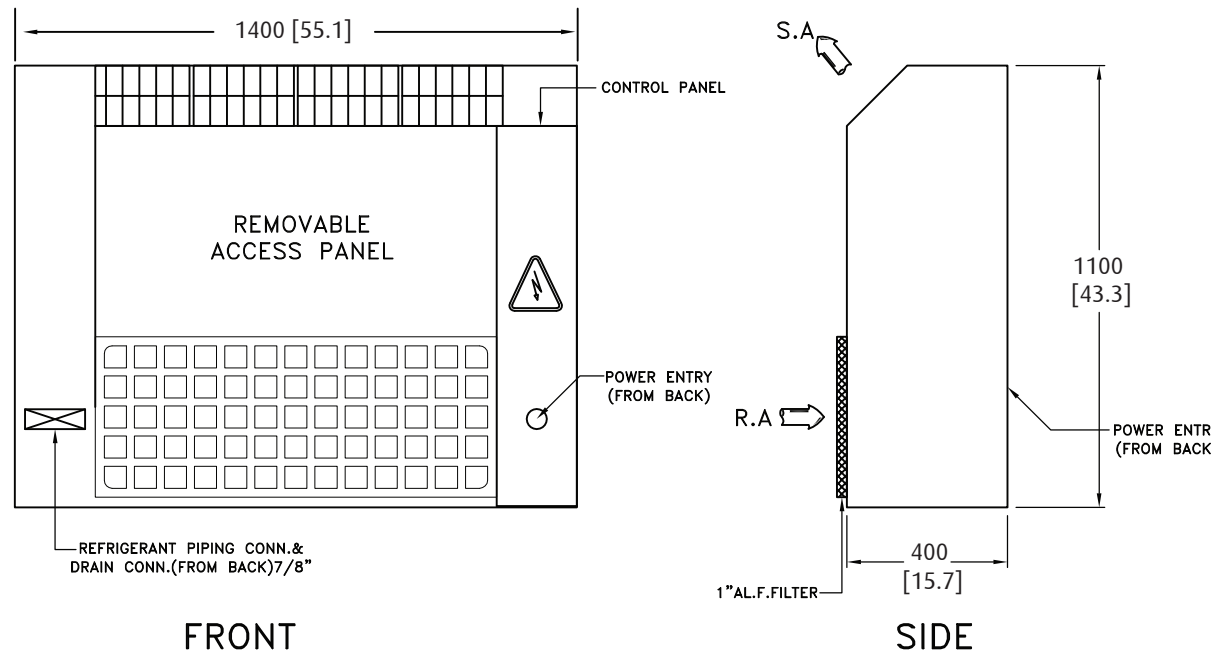


# Mini Computer Room Units

## Floor / Wall Type Drawings

DSP 36 + PASC CM 20

DSP 48 + PASC CM 20

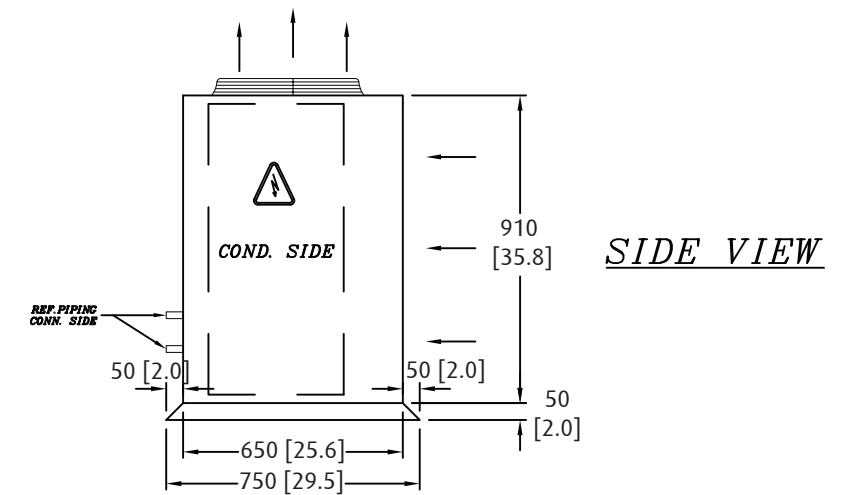
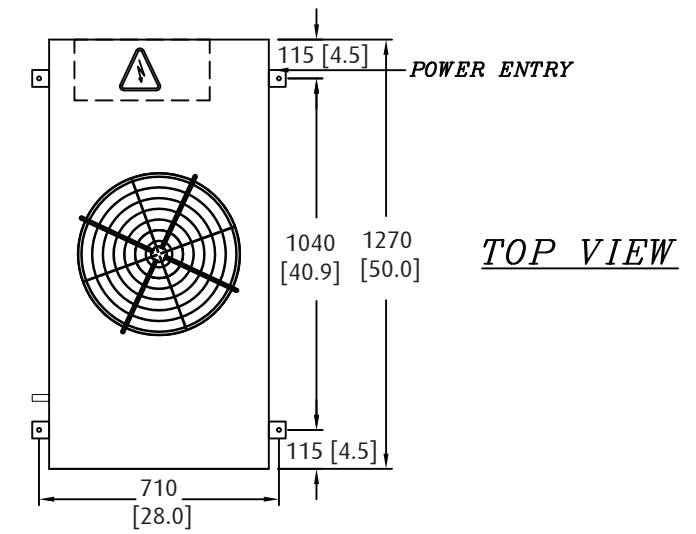
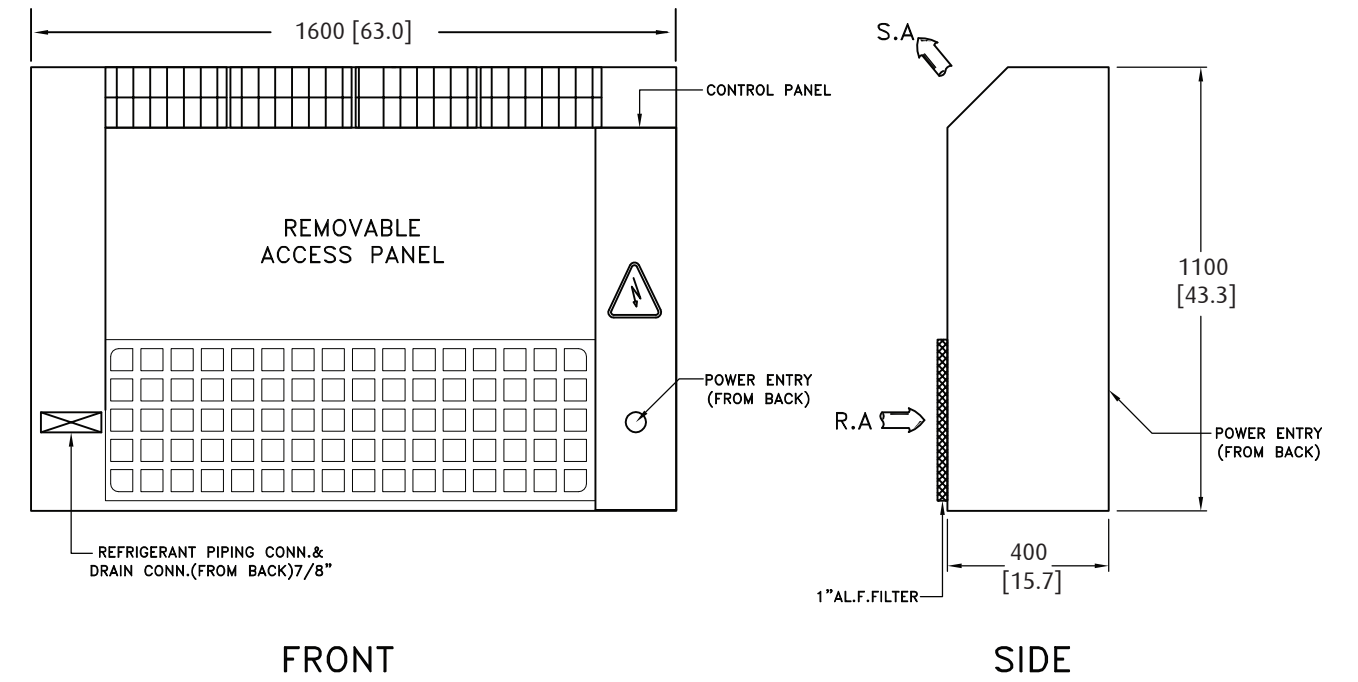


All dimensions are in mm[inch]

# Mini Computer Room Units

## Floor / Wall Type Drawings

DSP 60 + PASC CM 24



All dimensions are in mm[inch]