



Counterflow Series Wall Mount Air Conditioner Models ADPC36-60

General Description

The Marvair® Counterflow Air Conditioner offers unique benefits in applications requiring low supply air outlet. Typical installations include computer rooms, electronic equipment shelters, and uninterrupted power supply (UPS) buildings. The Marvair air conditioner is an energy and space saving unit designed to offer maximum indoor comfort without using outside ground space or indoor floor space. The unit can be easily mounted on an outside wall with the supply opening at or under floor level. Factory or field installed accessories can be used to meet specific requirements.

All models use non-ozone depleting R-407C refrigerant.

The Counterflow air conditioners are manufactured and tested to UL Standard 1995, 2nd Ed. and CAN/CSA C22.2 No. 236-95, 2nd Ed. The ADP models are commercial units and not intended for residential use.



ADPC60 with Economiser

Advantages Over Field Modified Systems Include These Standard Features:

Designed for Operation in Low Ambient Conditions

- Low ambient control cycles condenser fan to regulate refrigerant pressures.
- Timed low pressure by-pass for start-up of A/C below 20°F and down to 0°F.

High Efficiency

- High Efficiency Compressor.
- Lanced fins and rifled tubing on many condenser and evaporator coils.

Built-In Reliability

- High and low pressure switches with lockout relay protects refrigerant circuit.
- Time delay/anti-short cycle timer.
- Dual condensate drains with internal traps.
- Two rainwater drains from condenser section to unit's base.
- Factory installed circuit breaker on all 208/230/460V units.

Rugged Construction

- Copper tube, aluminum fin evaporator and condenser coils.

- Factory installed heaters on discharge side of evaporator coil (optional).
- Baked on neutral beige finish over galvanneal steel for maximum cabinet life. (Other finishes are available).
- Built-in full length mounting flanges and sloped top minimize chance of water leaks.
- Compressor location on the isolated vented bottom shelf for shipping and mounting stability.

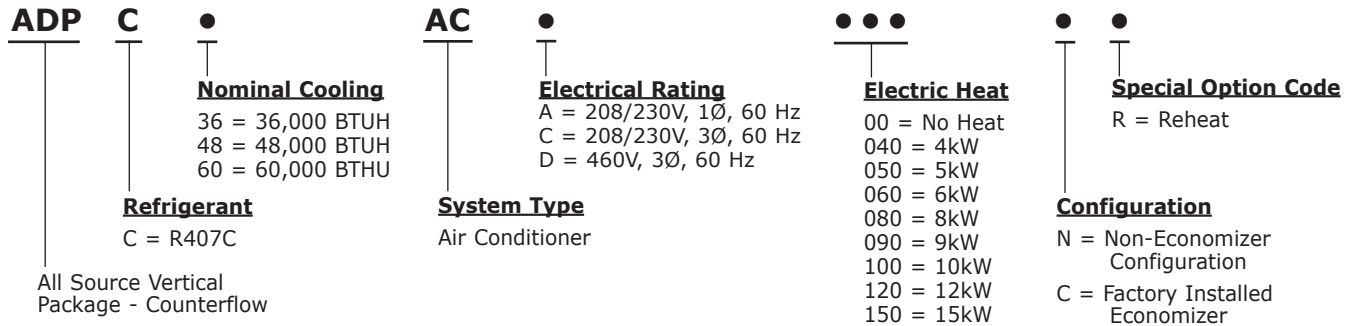
Ease of Service

- Service access valves are standard.
- Easy access to controls without disturbing indoor air flow - no ladder required.
- Front Control Panel allows easy access and complies with NEC clearance codes on redundant systems (two units side by side).
- All major components are readily accessible.

Remote Alarm Capability

- Dry contacts can be used for remote alarm or notification upon air conditioner lockout.

Model Identification



Performance Chart - 60Hz Units

Data based on 80°F(26.5°C) DB/67°F (19.5°C) WB Return Air AT VARIOUS OUTDOOR TEMPERATURES AT RATED CFM

| Model | 70°F/21°C | 75°F/24°C | 80°F/26.5°C | 85°F/29.5°C | 90°F/32°C | 95°F/35°C | 100°F/38°C | 105°F/40.5°C | 110°F/43.5°C | 115°F/46°C | 120°F/49°C |
|-----------|-----------|-----------|-------------|-------------|-----------|-----------|------------|--------------|--------------|------------|------------|
| 36 | 42,720 | 41,296 | 39,872 | 38,448 | 37,024 | 35,600 | 34,176 | 32,752 | 31,328 | 30,616 | 29,904 |
| 48 | 57,600 | 55,680 | 53,760 | 51,840 | 49,920 | 48,000 | 46,080 | 44,160 | 42,240 | 41,280 | 40,320 |
| 60 | 68,400 | 66,120 | 63,840 | 61,560 | 59,280 | 57,000 | 54,720 | 52,440 | 50,160 | 49,020 | 47,880 |

Sensible Total Ratio @95°F (35°C) Outside Air DB - 60Hz. Units

| MODEL | 36AC | 48AC | 60AC |
|----------------------------|--------|--------|--------|
| TOTAL CAPACITY | 35,600 | 48,000 | 57,000 |
| SENSIBLE HEAT RATIO | 0.76 | 0.8 | 0.8 |
| SENSIBLE CAPACITY | 27,056 | 38,400 | 45,600 |
| RATED CFM | 1,220 | 1,760 | 1,850 |
| ESP | 0.15 | 0.20 | 0.20 |

Sensible ratios based on Indoor Conditions of 80°F (27°C) DB/67°F (19.5°C) WB.

CFM @ External Static Pressure (Wet Coil) (IWG) - 60Hz. Units

| MODEL | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.40 | 0.50 |
|---------------|------|------|------|------|------|------|------|
| ADPC36 | 1310 | 1265 | 1220 | 1185 | 1150 | 1060 | N/A |
| ADPC48 | N/A | N/A | 1900 | 1830 | 1760 | 1700 | 1620 |
| ADPC60 | N/A | N/A | 1900 | 1830 | 1760 | 1700 | 1620 |

Air flow ratings of 208-230 volt units are at 230v. Air flow ratings of 460 volt units are at 460 volts. Operation of units at a voltage different from the rating point will affect air flow.

Electrical Characteristics - Compressor, Outdoor Fan Motor & Indoor Blower Motor

| BASIC MODEL | COMPRESSOR | | | OUTDOOR FAN MOTOR | | | | INDOOR FAN MOTOR | | | |
|------------------|--------------|------------------|------------------|-------------------|------------------|------------------|-----------------|------------------|------------------|------------------|-----------------|
| | VOLTS-HZ-PH | RLA ¹ | LRA ² | VOLTS | RPM ³ | FLA ⁴ | HP ⁵ | VOLTS | RPM ³ | FLA ⁴ | HP ⁵ |
| ADPC36ACA | 208/230-60-1 | 16.6 | 86.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 2.5 | 1/4 |
| ADPC48ACA | 208/230-60-1 | 23.3 | 118.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 3.1 | 1/2 |
| ADPC60ACA | 208/230-60-1 | 28.8 | 142.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 5.2 | 3/4 |
| ADPC36ACC | 208/230-60-3 | 10.2 | 78.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 2.5 | 1/4 |
| ADPC48ACC | 208/230-60-3 | 15.4 | 90.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 3.1 | 1/2 |
| ADPC60ACC | 208/230-60-3 | 19.2 | 124.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 5.2 | 3/4 |
| ADPC36ACD | 460-60-3 | 5.5 | 40.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 2.5 | 1/4 |
| ADPC48ACD | 460-60-3 | 8.3 | 45.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 3.1 | 1/2 |
| ADPC60ACD | 460-60-3 | 9.6 | 62.0 | 208/230-60-1 | 825 | 2.8 | 1/3 | 208/230-60-1 | 1075 | 5.2 | 3/4 |

¹RLA = Rated Load Amps ²LRA = Locked Rotor Amps ³RPM = Revolutions per Minute ⁴FLA = Full Load Amps

⁵HP = Horsepower

The 460 v. units (D models) have a step down transformer for the 230v. motors.

Summary Electrical Ratings (Wire Sizing)

| ELECTRIC HEAT | | 000 = None | | 040 = 4 kw | | 050 = 5 kw | | 060 = 6 kw | | 080 = 8 kw | | 090 = 9 kw | | 100 = 10 kw | | 120 = 12 kw | | | | 150 = 15 kw | | | |
|---------------|---------------|------------|-----|------------|-----|------------|-----|------------|-----|------------|-----|------------|-----|-------------|-----|-------------|-----|--------|-----|-------------|-----|--------|-----|
| BASIC MODEL | VOLTAGE PHASE | CKT #1 | | CKT #1 | | CKT #1 | | CKT #1 | | CKT #1 | | CKT #1 | | CKT #1 | | CKT #1 | | CKT #2 | | CKT #1 | | CKT #2 | |
| | | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS |
| ADPC36ACA | 208-230/1 | 26.1 | 40 | 26.1 | 40 | 28.5 | 40 | 33.8 | 40 | 44.2 | 45 | | | 54.6 | 60 | 26.1 | 40 | 41.6 | 45 | 28.5 | 40 | 52.1 | 60 |
| ADPC48ACA | 208-230/1 | 35.0 | 50 | | | 35.0 | 50 | | | | | | | 55.2 | 60 | 35.0 | 50 | 41.6 | 45 | 35.0 | 50 | 52.1 | 60 |
| ADPC60ACA | 208-230/1 | 44.0 | 60 | | | 44.0 | 60 | | | | | | | 57.3 | 60 | 44.0 | 60 | 41.6 | 45 | 44.0 | 60 | 52.1 | 60 |
| ADPC36ACC | 208-230/3 | 18.1 | 25 | | | | | 20.5 | 30 | | | 29.6 | 30 | | | 38.6 | 40 | | | 47.6 | 50 | | |
| ADPC48ACC | 208-230/3 | 25.2 | 40 | | | | | 25.2 | 40 | | | 30.2 | 40 | | | 39.2 | 40 | | | 48.2 | 50 | | |
| ADPC60ACC | 208-230/3 | 32.0 | 50 | | | | | 32.0 | 50 | | | 32.3 | 50 | | | 41.3 | 50 | | | 50.3 | 60 | | |
| ADPC72ACC | 208-230/3 | 33.6 | 50 | | | | | 33.6 | 50 | | | 33.6 | 50 | | | 41.3 | 50 | | | 50.3 | 60 | | |
| ADPC36ACD | 460/3 | 9.5 | 15 | | | | | 10.3 | 15 | | | 14.8 | 15 | | | 19.3 | 20 | | | 23.8 | 25 | | |
| ADPC48ACD | 460/3 | 13.3 | 20 | | | | | 13.3 | 20 | | | 15.1 | 20 | | | 19.6 | 20 | | | 24.1 | 25 | | |
| ADPC60ACD | 460/3 | 16.0 | 25 | | | | | 16.0 | 25 | | | 16.1 | 25 | | | 20.6 | 25 | | | 25.1 | 30 | | |
| ADPC72ACD | 460/3 | 16.8 | 25 | | | | | 16.8 | 25 | | | 16.8 | 25 | | | 20.6 | 25 | | | 25.1 | 30 | | |

MCA = Maximum Continuous Current (Wiring Size Amps) MFS = Maximum Fuse Size
 This chart should only be used as a guideline for estimating conductor size and overcurrent protection. Always refer to the data label on the unit for the requirements of the specific unit. MCA & MFS are calculated at 230v. for the 208-230v units (A & C models) and at 460 volt for the 460v. units (D models). The 460 v. units (D models) have a step down transformer for the 230v. motors.

Summary Ratings (Wire Sizing) - Units with Electric Reheat ("R")

| ELECTRIC HEAT | | 080 = 8 kw | | | | 090 = 9 kw | | 100 = 10 kw | | | | 120 = 12 kw | | | |
|---------------|----------------|------------|-----|--------|-----|------------|-----|-------------|-----|--------|-----|-------------|-----|--------|-----|
| BASIC MODEL | VOLTAGE/ PHASE | CKT #1 | | CKT #2 | | CKT #1 | | CKT #1 | | CKT #2 | | CKT #1 | | CKT #2 | |
| | | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS | MCA | MFS |
| ADPC36ACA | 208-230/1 | 26.1 | 40 | 41.6 | 45 | | | | | | | | | | |
| ADPC48ACA | 208-230/1 | | | | | | | 35.0 | 50 | 52.1 | 60 | | | | |
| ADPC60ACA | 208-230/1 | | | | | | | 44.0 | 60 | 52.1 | 60 | | | | |
| ADPC36ACC | 208-230/3 | | | | | 45.2 | 50 | | | | | | | | |
| ADPC48ACC | 208-230/3 | | | | | 52.3 | 60 | | | | | | | | |
| ADPC60ACC | 208-230/3 | | | | | | | | | | | 32.0 | 50 | 36.1 | 40 |
| ADPC36ACD | 460/3 | | | | | 23.0 | 25 | | | | | | | | |
| ADPC48ACD | 460/3 | | | | | 26.8 | 30 | | | | | | | | |
| ADPC60ACD | 460/3 | | | | | | | | | | | 34.0 | 35 | | |

MCA = Maximum Continuous Current (Wiring Size Amps) MFS = Maximum Fuse Size or HACR Breaker
 This chart should only be used as a guideline for estimating conductor size and overcurrent protection. Always refer to the data label on the unit for the requirements of the specific unit. MCA & MFS are calculated at 230v. for the 208-230v units (A & C models) and at 460 volt for the 460v. units (D models). The 460 v. units (D models) have a step down transformer for the 230v. motors.

Unit Load Amps (Heating)

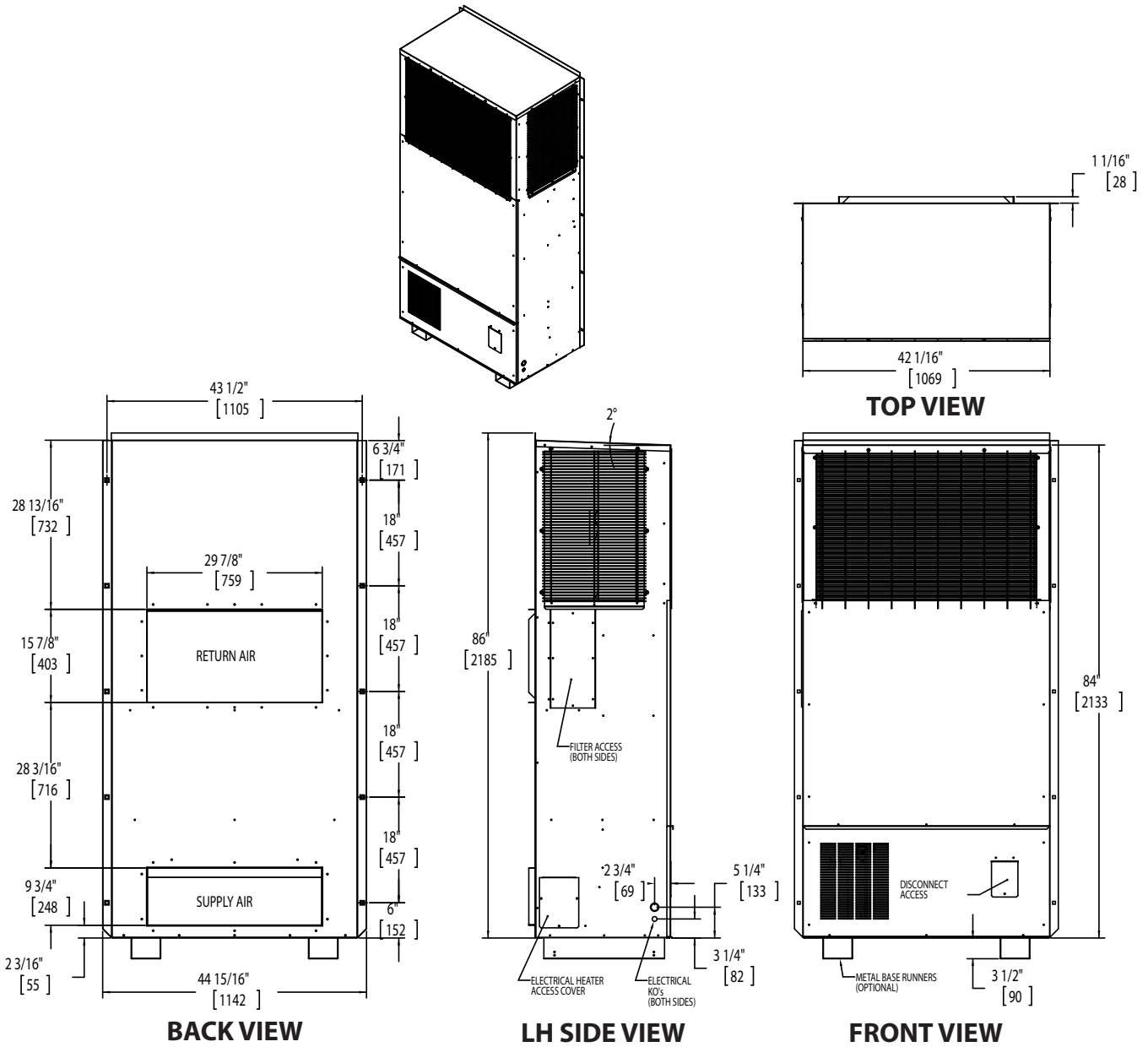
| BASIC MODEL | VOLTAGE PHASE HERTZ | CURRENT AMPS | | LOAD OF RESISTIVE HEATING ELEMENTS ONLY (AMPS) | | | | | | | | TOTAL MAXIMUM HEATING AMPS | | | | | | | |
|-------------|---------------------|-----------------|------------------|--|-------|-------|-------|-------|-------|-------|-------|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| | | AC ¹ | IBM ² | 04 kW | 05 kW | 06 kW | 08 kW | 09 kW | 10 kW | 12 kW | 15 kW | 04 Kw | 05 Kw | 06 Kw | 08 Kw | 09 Kw | 10 Kw | 12 Kw | 15 Kw |
| ADPC36ACA | 208-230/1/60 | 21.9 | 2.5 | 16.7 | 20.8 | 25.0 | 33.3 | n/a | 41.7 | 50.0 | 62.5 | 21.9 | 23.3 | 27.5 | 35.8 | n/a | 44.2 | 52.5 | 65.0 |
| ADPC48ACA | 208-230/1/60 | 29.2 | 3.1 | n/a | 20.8 | n/a | n/a | n/a | 41.7 | 50.0 | 62.5 | n/a | 23.9 | n/a | n/a | n/a | 44.8 | 53.1 | 65.6 |
| ADPC60ACA | 208-230/1/60 | 36.8 | 5.2 | n/a | 20.8 | n/a | n/a | n/a | 41.7 | 50.0 | 62.5 | n/a | 26.0 | n/a | n/a | n/a | 46.9 | 55.2 | 67.7 |
| ADPC36ACC | 208-230/3/60 | 15.5 | 2.5 | n/a | n/a | 14.4 | n/a | 21.7 | n/a | 28.9 | 36.1 | n/a | n/a | 16.9 | n/a | 24.2 | n/a | 31.4 | 38.6 |
| ADPC48ACC | 208-230/3/60 | 21.3 | 3.1 | n/a | n/a | 14.4 | n/a | 21.7 | n/a | 28.9 | 36.1 | n/a | n/a | 17.5 | n/a | 24.8 | n/a | 32.0 | 39.2 |
| ADPC60ACC | 208-230/3/60 | 27.2 | 5.2 | n/a | n/a | 14.4 | n/a | 21.7 | n/a | 28.9 | 36.1 | n/a | n/a | 19.6 | n/a | 26.9 | n/a | 34.1 | 41.3 |
| ADPC36ACD | 460/3/60 | 8.2 | 1.3 | n/a | n/a | 7.2 | n/a | 10.8 | n/a | 14.4 | 18.0 | n/a | n/a | 8.5 | n/a | 12.1 | n/a | 15.7 | 19.3 |
| ADPC48ACD | 460/3/60 | 11.3 | 1.6 | n/a | n/a | 7.2 | n/a | 10.8 | n/a | 14.4 | 18.0 | n/a | n/a | 8.8 | n/a | 12.4 | n/a | 16.0 | 19.6 |
| ADPC60ACD | 460/3/60 | 13.6 | 2.6 | n/a | n/a | 7.2 | n/a | 10.8 | n/a | 14.4 | 18.0 | n/a | n/a | 9.8 | n/a | 13.4 | n/a | 17.0 | 20.6 |

¹AC = Air Conditioner ²IBM = Indoor Blower Motor
 Heating kW rated at 240v. for 208-230v. units (A & C models). Derate heat by 25% for operation on 208v. Heating kW rated at 480v. for 460v. units (D models). Total heating amps for all 1Ø units with 15 kW of heat includes both circuits (#1 & #2). Note: 3Ø units contain 1Ø motor loads. Values shown are maximum phase loads. Loads are not equally balanced on each phase. Total maximum heating and cooling amps include motor loads.

Weight

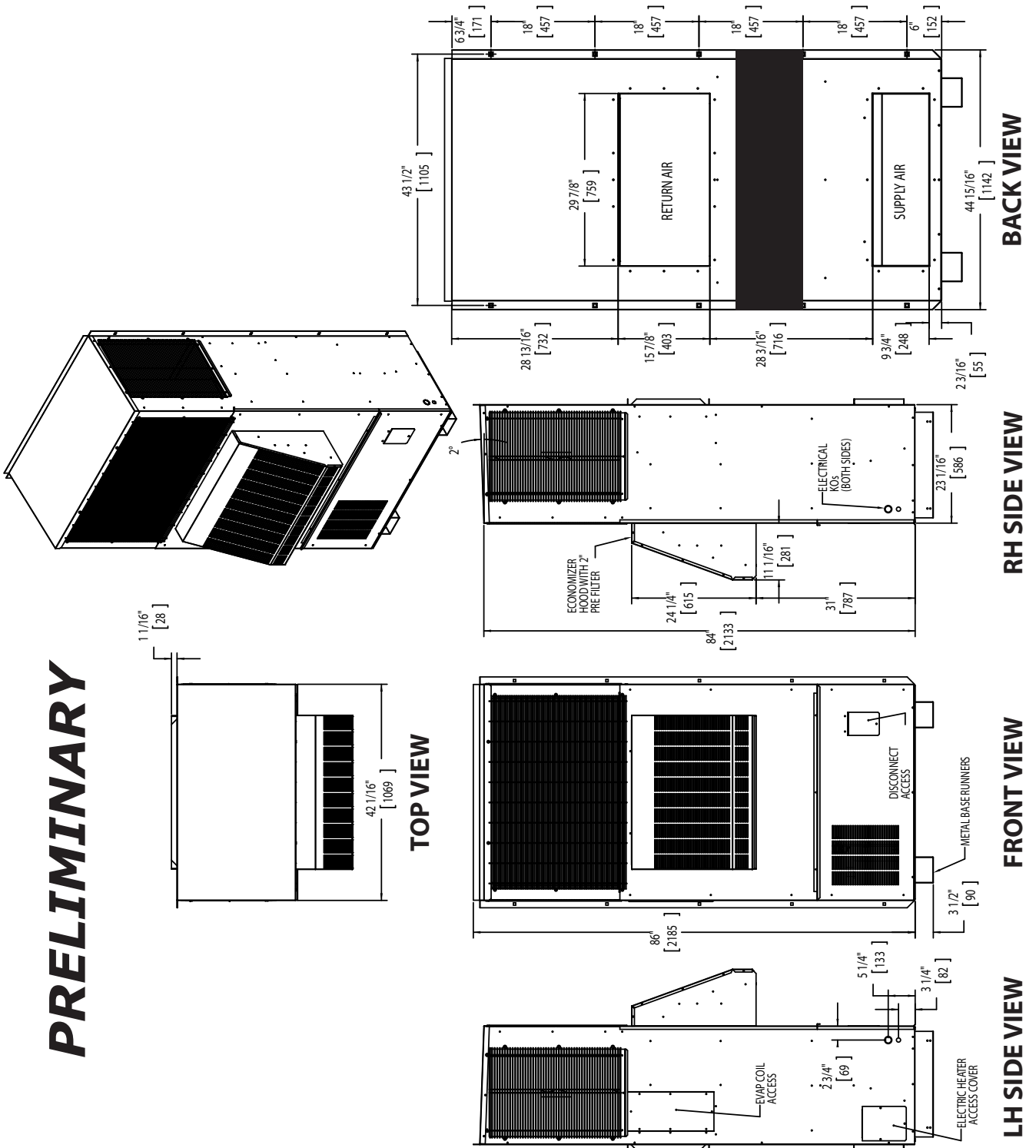
| MODEL | ADPC36 | ADPC48 | ADPC60 |
|---|-----------|---------|---------|
| POUNDS/KG | LBS/KG | LBS/KG | LBS/KG |
| UNITS WITH A FRESH AIR DAMPER | 540/245.5 | 545/248 | 550/250 |
| UNITS WITH THE FACTORY INSTALLED ECONOMIZER | 590/268 | 595/271 | 600/273 |

Dimensional Drawings - Non-Economizer Configuration



Dimensional Drawings - Factory Installed Economizer

PRELIMINARY



Notes

Complete installation instructions are in the A/C I&O Manual. Detailed dimensional data available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website, www.marvair.com or by contacting Marvair® at 229-273-3636. As part of the Marvair continuous improvement program, specifications are subject to change without notice.



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