

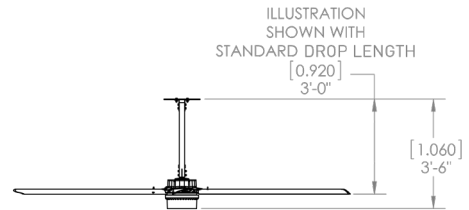
# AirVolution-D3

The three-blade design of the AirVolution-D3 reduces weight, friction, and raw materials, which in turn minimizes the strain on the building, your energy consumption, and your budget. But can three blades do the job? Yes! Just like a wind turbine, we designed the AirVolution-D3 to be the optimal balance between weight, materials, and efficiency.



## STANDARD FEATURES

- Direct Drive motor
- Clearcoat anodized airfoil blades with centrifugal cooling
- Forward, reverse, variable speed
- Rated for indoor and outdoor use\*
- Capable of Building Automation Integration (with AirLynk upgrade) and fire alarm
- Digital wall controller with fault code access
- Safety Components: safety cable, Fixed Angle Mount with guy wires, blade retainer links



## STEP 1: POWER UNIT

Item #	Options	Qty
P430-0170-MA	AVD 430 Power Unit, 2.1 HP Equivalent	

## STEP 2: DIAMETERS

Item #	Diameter	Qty
60-30014-00	14 ft / 4.27 m	
60-30016-00	16 ft / 4.88 m	
60-30018-00	18 ft / 5.49 m	
60-30020-00	20 ft / 6.10 m	
60-30024-00	24 ft / 7.32 m	

## STEP 3: VOLTAGE

Item #	Options	Qty
2301-MA	208-240V Single Phase, 50/60 Hz, 14 ft-16 ft diameter	
2303-MA	208-240V Three Phase, 50/60 Hz, 14 ft- 16 ft diameter	
2501-MA	208-240V Single Phase, 50/60 Hz, 18ft-24 ft diameter	
2503-MA	208-240V Three Phase, 50/60 Hz, 18 ft-24 ft diameter	

## STEP 4: MOUNTING

Item #	Options	Qty
60-50102-00	Fixed Angle Mount with I-beam Hardware Kit (Standard)	
60-50121-00	AVD Universal Mount with I-beam Hardware Kit	
60-40041-00	Glulam Hardware Kit (for Fixed Angle Mount or AVD Universal Mount)	

## STEP 5: CONTROLS

Item #	Description	Qty
30-90308-00	Digital Remote Assembly (Standard)	
30-04006-00	Controller 4	
30-04007-00	Controller 4 + Temperature Sensor	
30-04030-00	Controller 30	
30-10012-00	AirLynk - BacNet	
30-10011-00	AirLynk - LonWorks	
30-90315-00	Local Override Remote (requires AirLynk-BacNet)	
30-04030-02	Dual Control Enabled Controller 30 (requires AirLynk-BacNet)	
30-04009-00	AirEffect (one per zone, up to 4 per Controller 30)**	

\*Motor unit only

\*\*Only compatible with Controller 30, pricing is per zone. Not compatible with Dual Control option.

# AirVolution-D3

## STEP 6: STOCK DROP LENGTHS

Item #	Length (ft/in)	Length (m)	Qty
51-x0200-02	2 ft*	0.61 m	
51-x0300-02	3 ft (Standard)	0.91 m	
51-x0400-02	4 ft	1.22 m	
51-x0500-02	5 ft	1.52 m	
51-x0600-02	6 ft	1.83 m	
51-x0700-02	7 ft	2.13 m	
51-x0800-02	8 ft	2.44 m	
51-x0900-02	9 ft	2.74 m	
51-x1000-02	10 ft	3.05 m	
51-xftin-02	Customization fee		

x = **3** for Fixed Angle Mount,  
or **9** for AVD Universal Mount

ft = length in **feet** (i.e. 04 for 4 feet, 10 for 10 feet)

in = length in **inches** (i.e. 05 for 5 inches, 10 for 10 inches)

\*2 ft is the shortest allowed drop length for AVD3-430. Lengths shorter than the standard drop length are not recommended and will **not work** for some fan diameters. Consult MacroAir for more details.

To order custom Drop Length or length greater than 10 ft, please call MacroAir.

Do you have a custom color in mind? Custom powder coating is available for all our blades, mounts and drop lengths.

**DROP LENGTH is the distance from fan mounting point to the blades.**

AirVolution-D3 fans can only be connected with a single-piece of custom length drop tube.

Measure the distance from the fan's mounting point down to the desired fan blade position and provide this information with the fan order to receive the correct custom drop length.

**For custom drop lengths, order a length longer and MacroAir will cut it down to the requested length. Estimated lead time is 10 business days.**

## OPTIONAL: POWDER COATING

Item #	Diameter	Estimated Lead Time	Qty
60-30014-02	14 ft / 4.27 m	15 business days	
60-30016-02	16 ft / 4.88 m	15 business days	
60-30018-02	18 ft / 5.49 m	15 business days	
60-30020-02	20 ft / 6.07 m	15 business days	
60-30024-02	24 ft / 7.32 m	15 business days	

### Special Finishes

Mounting hardware & drop length	All Diameters	15 business days	
Hub Cover	All Diameters	15 business days	

For powder coating colors, please refer to Appendix A.

## ADDITIONAL OPTIONS

Item #	Description	Qty
60-41002-00	AVD 550/780, AVD3 Light Kit	
10-40195-00	Noise Dampener	

# AirVolution-D3

## BASIC SPECIFICATIONS

AIRFOIL DIAMETER	14ft	16ft	18ft	20ft	24ft
Airfoil Style	7.375" Extruded Anodized Aluminum Airfoil				
Number of Airfoils	3				
<b>PERFORMANCE</b>					
Max Speed	120 RPM	103 RPM	83 RPM	75 RPM	65 RPM
Recommended Spacing*	70 ft [21.3 m]	75 ft [22.9 m]	80 ft [24.4 m]	90 ft [27.4 m]	95 ft [29 m]
Max Affected Area	8,900 ft <sup>2</sup> [827 m <sup>2</sup> ]	9,600 ft <sup>2</sup> [892 m <sup>2</sup> ]	12,600 ft <sup>2</sup> [1,171 m <sup>2</sup> ]	15,400 ft <sup>2</sup> [1,431 m <sup>2</sup> ]	17,000 ft <sup>2</sup> [1,579 m <sup>2</sup> ]
Sound Level dBA at Max Speed**	54	52	52	54	51
Sound Level dBA at Half Speed**	37	34	39	39	45
<b>HANGING REQUIREMENTS</b>					
Hanging Weight	161 lb [73.0 kg]	165 lb [74.8 kg]	169 lb [76.7 kg]	173 lb [78.5 kg]	186 lb [84.4 kg]
Max Torque	29 ft-lb [39 Nm]	38 ft-lb [52 Nm]	39 ft-lb [53 Nm]	49 ft-lb [67 Nm]	83 ft-lb [113 Nm]
Max Thrust in Reverse	15 lbs [6.8 kg]	21 lbs [9.5 kg]	20 lbs [9.1 kg]	23 lbs [10.4 kg]	32 lbs [14.5 kg]
<b>MOTOR AND DRIVE TRAIN</b>					
Motor Type	Gearless Direct Drive				
Equivalent Horsepower Rating	2.1 HP				
Operating Temp Range	16°F [-10C°] - 140 F° [60C°]				
<b>MAX AMP DRAW</b>					
208-240 VAC Single Phase			24A		
208-240 VAC Three Phase	14.9A		23.8A		
<b>POWER AND CONTROLS</b>					
Power Source	Single Phase or Three Phase 208-240, VAC +/-5%, 50/60 Hz				
Control Options	Digital Touchpad, MacroAir Controller 4, Controller 30, AirLynk - BacNet / LonWorks				
<b>INSTALLATION</b>					
Mounting Hardware	Fixed Angle Mount				
Drop Length	In addition to the standard drop length supplied, optional drop lengths are available in 1ft increments; all drop lengths require guy wires				
<b>RATINGS AND COMPLIANCE</b>					
Fire and Sprinkler	NFPA Compliant				
Outdoor Rating***	Rated for outdoor use				

\*For spacing between fan units based on the dimensions of a specific space please refer to <https://macroairfans.com/airviz>.

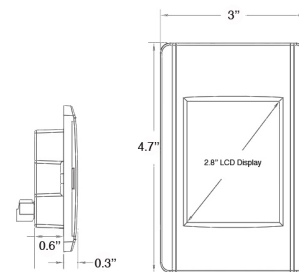
\*\*Sound testing taken with the sensor 5 ft above the ground and 20 ft from the center of the fan at 20 ft high.

\*\*\*Applicable to the fan unit only, does not include controller, control panel and accessories.

# MacroAir Controllers - Digital Remote



- Standard on all MacroAir fan models (Except Z Series)
- Simple and intuitive control
- Easy ground-level troubleshooting and diagnostics



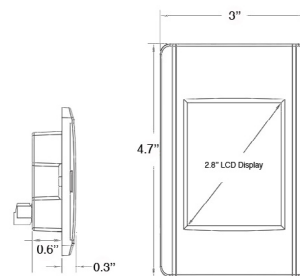
Features	Digital Touchpad Remote
Item #	30-90308-00
# Fans Controlled	1 fan
Display	2.8 TFT
Resolution	240x320x16 pixels
Backlight life time	20,000 hours
Backlight brightness	160 cd/m2
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Rating (front)	IP 40 / NEMA 1
Weight (incl. enclosure)	375 g
Communication Protocol	RS 485
Power Supply	24V from fan
Size (incl. enclosure)	91.2 x 135.5 x 42.0
Operating Temperature	-4° to 158°F / -20° to +70°C
Storage Temperature	-22° to 176°F / -30° to +80°C

**Note:** Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

# MacroAir Controllers - Controller 4



- Available upgrade for all MacroAir fan models (Except Z Series)
- Control up to 4 fans from a single point
- Control fans individually, independent of speed & direction
- Simple and intuitive control
- Temperature sensor (optional upgrade) starts and stops the fan(s)



Features	Controller 4	Controller 4 with temperature sensor
Item #	30-04006-00	30-04007-00
# Fans Controlled	Up to 4 fans, individually	
Display	2.8 TFT	
Resolution	240x320x16 pixels	
Backlight life time	20,000 hours	
Backlight brightness	160 cd/m2	
Shock	IEC 60068-2-27	
Vibration	IEC 60068-2-6	
Rating (front)	IP 40 / NEMA 1	
Weight (incl. enclosure)	375 g	
Communication Protocol	RS 485	
Power Supply	24V from fan	
Size (incl. enclosure)	91.2 x 135.5 x42.0	
Operating Temperature	-4° to 158°F / -20° to +70°C	
Storage Temperature	-22° to 176°F / -30° to +80°C	

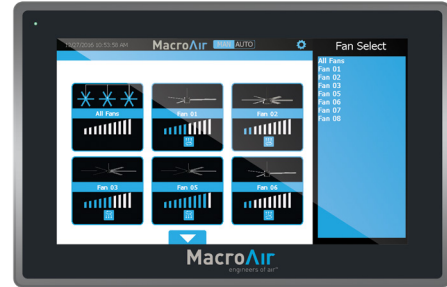
**Note:** Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

# MacroAir Controllers - Controller 30



## STANDARD FEATURES

- Available upgrade for all MacroAir fan models (except Z Series)
- Provides a single point for individual or group fan control
- Enables run time, scheduling, grouping, and fan naming
- Secure remote login to controller via smart device or computer
- Optional auto mode available with AirEffect
- Password protection capabilities for scheduling, naming, and temperature/humidity (with upgrade to AirEffect)



Features	Controller 30
Item #	30-04030-00
# Fans Controlled	30 fans
Display	10.1" (16:9), TFT-LCD with LED backlight
Resolution	1024x600 pixels
Backlight life time	50000 hours
Backlight brightness	500 cd/m2
Shock	15g, half-sine, 11ms according to IEC60068-2-27
Vibration	1g, according to IEC 60068-2-6, Test Fc
Sealing front	IP65, NEMA 4X/ 12 and UL Type 4X/ 12
Sealing back (excl. enclosure)	IP20
Weight (incl. enclosure)	10 lb / 4.5 kg
Communication Protocol	MODBUS RS485
Ethernet Port	2x100 Mbit
USB Port	2
Power Supply	110-240 V
Size (incl. enclosure)	10.7 x 13.0 x 3.7 in (W x H x D) / 272 x 330 x 84 mm (W x H x D)
Operating Temperature	14° to 140°F / -10° to +60°C
Storage Temperature	-4° to 158°F / -20° to +70°C
Languages	English, Spanish, French, Malay

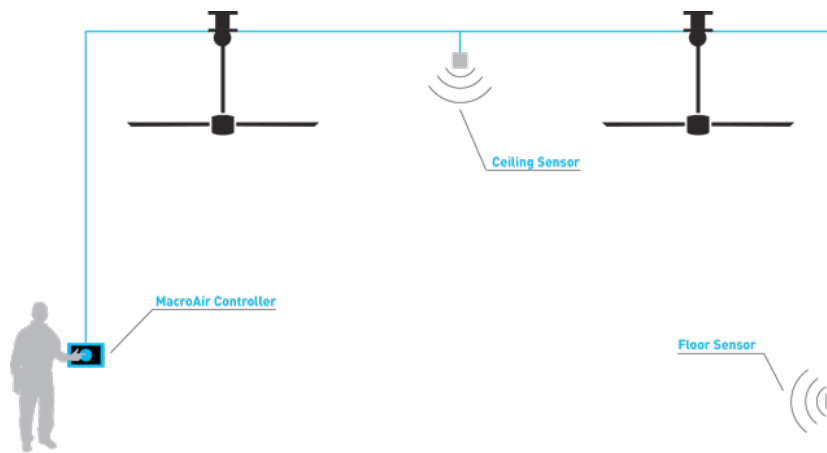
**Note:** Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

# AirEffect Temperature Control



## STANDARD FEATURES

**AirEffect (only available with Controller 30)** is an optional control system that senses and automatically maintains a desired room temperature. AirEffect gages the heat index by measuring the temperature and humidity at the ceiling and floor. To achieve the desired temperature, AirEffect takes the heat index and calculates the fan's ideal operating speed and direction and runs the fans accordingly. Simply setup AirEffect to the desired temperature range and enjoy a consistently comfortable environment.



- Senses and maintains desired room temperature
- Measures temperature and humidity at two points (ceiling & floor)
- Calculates heat index through temperature and humidity calculations
- Runs fans in reverse or forward direction in response to heat index
- Compatible with all fans (except Z Series)
- Independent, external sensors allow the controllers to be mounted in a different room than the fans and sensors
- Password protected screen for scheduling, naming, and temperature set point

Features	AirEffect (up to 4 zones)
Item #	30-04009-00
Number of Sensors	2 (1 floor & 1 ceiling)
Measured temperatures	-40 through +125 °C (±2 to ±4 %)
Measured humidity	0 through 100% RH (±2 to ±4 %)
Communication Protocol	MODBUS RS485

\*Controller not included

# AirLynk BMS Integration

**Gives the ability to control your fans through BACnet® (MS/TP or IP) and LonWorks®.**

BACnet and LonWorks are both protocols used to automate or manage buildings systems (commonly called a BMS or BAS). Our fans use MODBUS to communicate and the correct use of AirLynk, MacroAir's interface, will allow the integration of our fans into a BMS/BAS. A BMS/BAS enables you to run the fans in conjunction with your HVAC system to help save energy costs.

Our proven solution is AirLynk, an external, high-performance building automation multi-protocol interface that is pre configured to communicate between any MacroAir fan and various building automation protocols including: BACnet®MS/TP, BACnet/IP, Modbus TCP/IP, and LonWorks®.

Successful integration of any MacroAir fan with a BMS/BAS is dependent upon following **these guidelines**:

- **Identify the BMS and its protocol** before the purchase order is placed. This allows the fans to be pre programmed, dramatically reducing installation errors and integration time.
- Strictly adhere to the included installation manual to eliminate issues that will occur from wrong types of wire, improper wire terminations or wire routing.
- We highly recommend engaging our Controls Engineers to visit the site for fan start-up to ensure a smooth and successful integration. Our experience has found that many installers are unfamiliar with the subtle but critical differences between BMS systems, interfaces, fan models, connection methods and best practices. For a nominal fee plus travel expenses, one of our Controls Engineers can be on site to ensure a smooth and successful start-up. For more information about this service, please inquire with our Technical Services Department.

**To Order BMS enabled fans and AirLynk please do the following:**

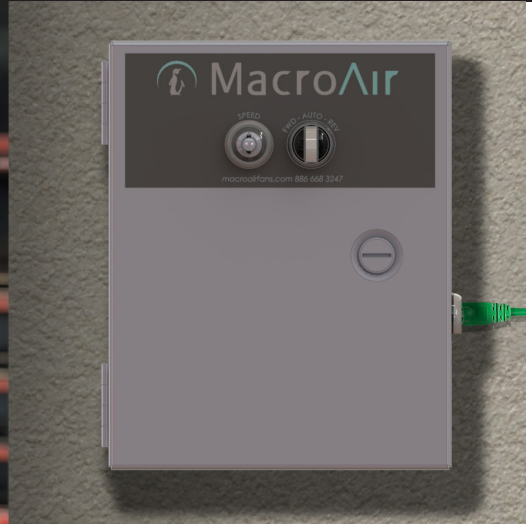
- Identify the BMS network
- Discuss your network with MacroAir's Control Engineers
- Order one AirLynk to connect up to 30 fans
- Order one Repeater per every five AirVolution-D 370 fans connected to AirLynk

Item #	Description
30-10012-00	AirLynk - BACnet, (Works on all Fan Lines, except Z Series), Up to 30 Fans per AirLynk
30-10011-00	AirLynk - LonWorks, (Works on all Fan Lines, except Z Series), Up to 30 Fans per AirLynk
30-90315-00	Local Override Remote (each fan) for BMS (Works on all Fan Lines, except Z Series and AVD 370)
30-04030-02	Dual Control Enabled Controller 30 (Works on all Fan Lines, except Z Series) Up to 30 Fans per AirLynk
10-80632-00	Repeater (Only required for AirVolution-D 370 Fans; 1 for every 5 fans)

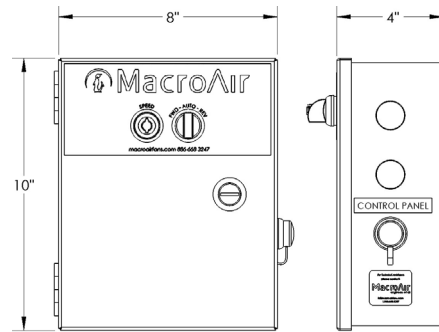
**Note:** Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)



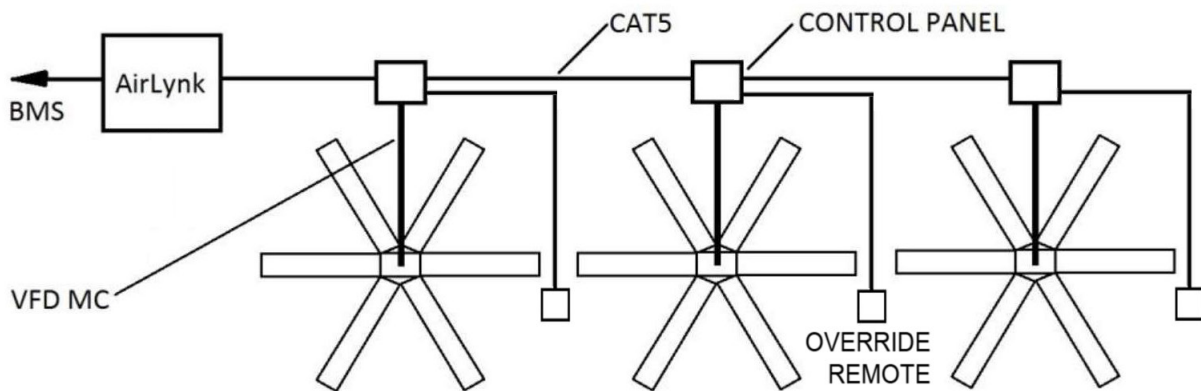
# Local Override Remote for BMS Integration



- Works with X Series, Y Series, AVD 780, AVD 550, and AVD3 fans when paired with AirLynk
- Allows local user to control speed and direction when in FWD or REV Mode
- Allows Building Management System to control speed and direction when in Auto Mode
- Takes last known command from BMS when returned to Auto Mode
- Simple and intuitive control
- 3-Year-Warranty



Features	Local Override for BMS
Item #	30-90315-00
# Fans Controlled	1 to 1 fan control by Local Override Remote, up to 30 by BMS/AirLynk
Rating	NEMA/EEMAC Type 1
Communication Protocol	0-10V Wall Mounted Override Remote, Modbus/BACnet AirLynk
Operating Temperature	-4° to 140°F / -20° to +60°C

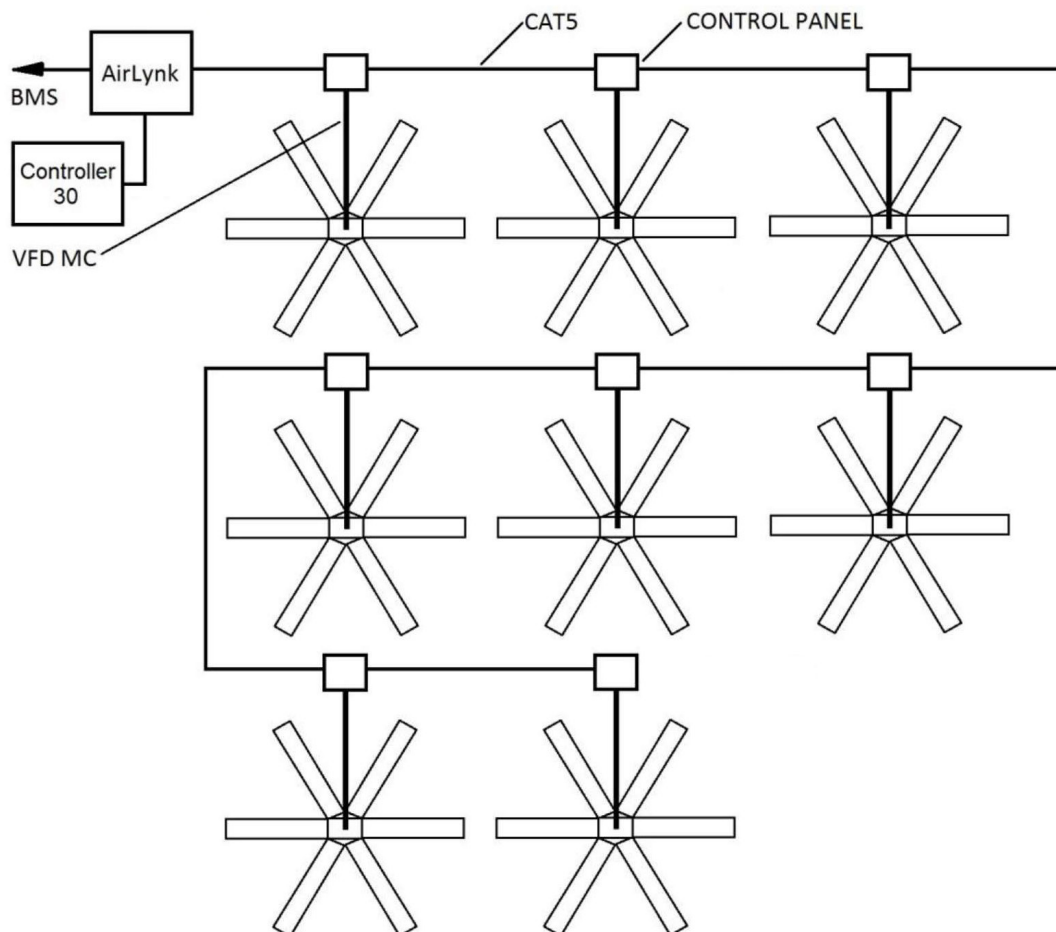
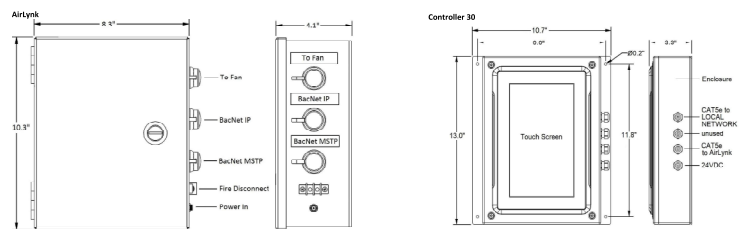


# Dual Control for BMS Integration



## STANDARD FEATURES

- Seamless integration of a building management system and local fan network
- Fans take last known command, be it from the BMS, the Dual Control enabled Network Controller 30 screen(s), or VNC enabled smart devices
- Provides a single point of local control of up to 30 fans
- Enables grouping and fan naming
- Password protection capabilities for operation, naming, and grouping
- Requires AirLynk (BacNet) and Dual Control Enabled Controller 30\*



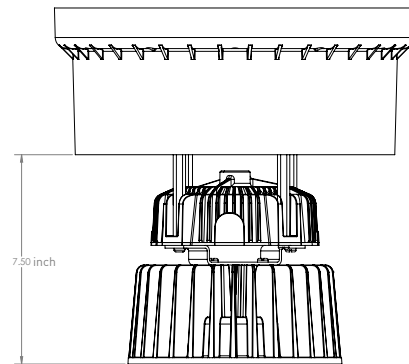
\*AirEffect is not compatible with Dual Control. Temperature monitoring by BMS can regulate fan operation.

# Fan Accessories - Light Kit



## STANDARD FEATURES

- Ties into existing light grid for easy operation and optimal coverage
- High Performance LED Light
- UL8750 Recognized class 1
- 80° Lens Angle
- Rugged die cast aluminum heat sink efficiently removes heat for reliable operation
- Mercury and UV free
- Suitable for dry and damp environments
- Operates on any voltage between 100 and 277



## LIGHT KIT OPTIONS

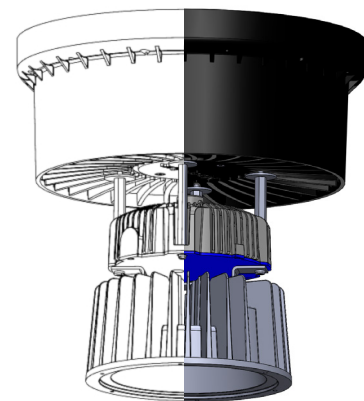
Item #	Description
60-41002-00	AVD 550/780/AVD3 Light Kit

## POWER CONSUMPTION

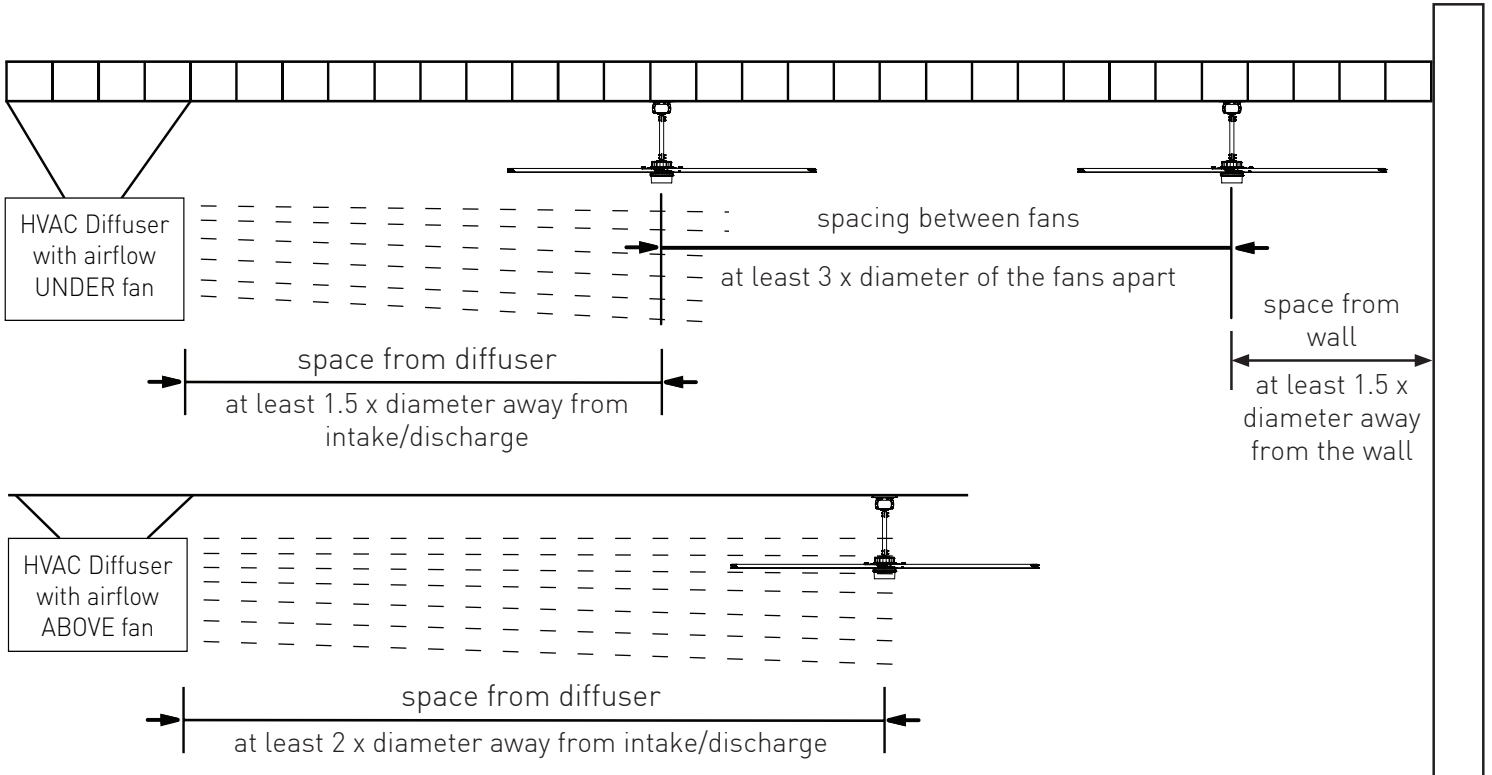
Input Voltage	100-277 VAC
Watts	150

## PRODUCT SPECIFICATIONS

Color	Black
Weight	8.2 Lbs.
Height	7.5 inch
Color Temperature	4000 K
Lumens	9,000



# Fan Placement & Clearance



**General Notes:**

Dimension "A": The smaller the distance between the light and the blade, the higher concentration and frequency of shuttering. So the greater distance "A" is from the fan blade, the less the shuttering effect.

Dimension "B": The closer the light is located to the center of the fan, the higher the frequency of shuttering.

Ambient light: Another variable increasing the shuttering effect is the amount of ambient light available. The more lights, the less the effect. As shown, the more overlapping patterns the less shuttering/strobing. The type of light can also influence the effect. For example, a domed light is more sensitive than a fluorescent tube.

Summary: Variables that affect strobing are (1) blade to light height, (2) the fan center to light dimension, and (3) the amount of ambient light within the space. To minimize the possible negative effects of strobing, follow all MacroAir installation instructions including clearance requirements.

