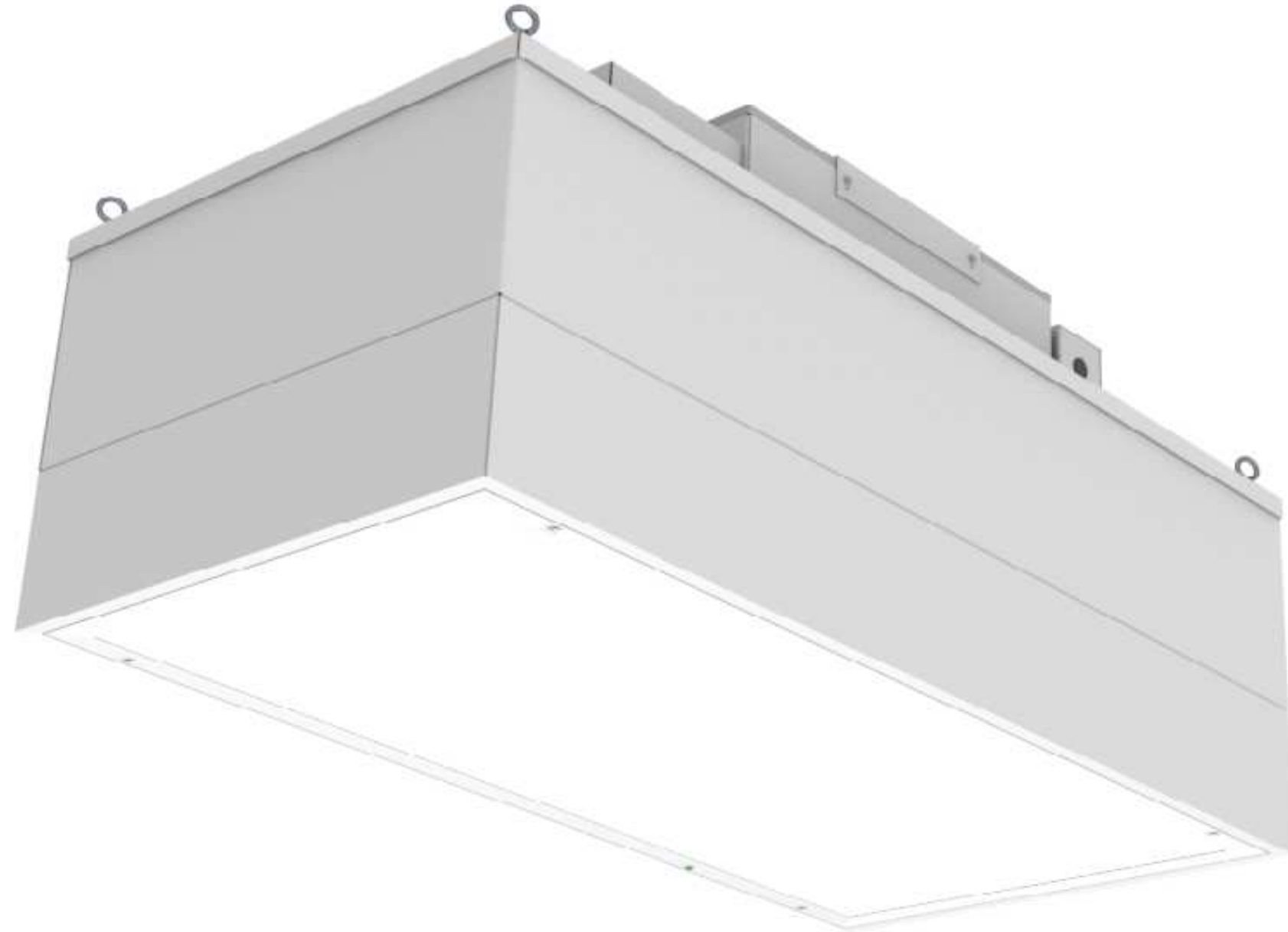


KROWN-L

FAN FILTER UNIT WITH INTEGRATED LED LIGHTING

FEATURES:

- FAN FILTER UNIT WITH INTEGRATED HIGH PERFORMANCE LED LIGHTS
- COMPLETE CONTROL AND MONITORING VIA BACnet



High Efficiency
90+ lm/W LED



L80 > 60,000
hours



IP67 Sealed
LED



90+ CRI



PROJECT:

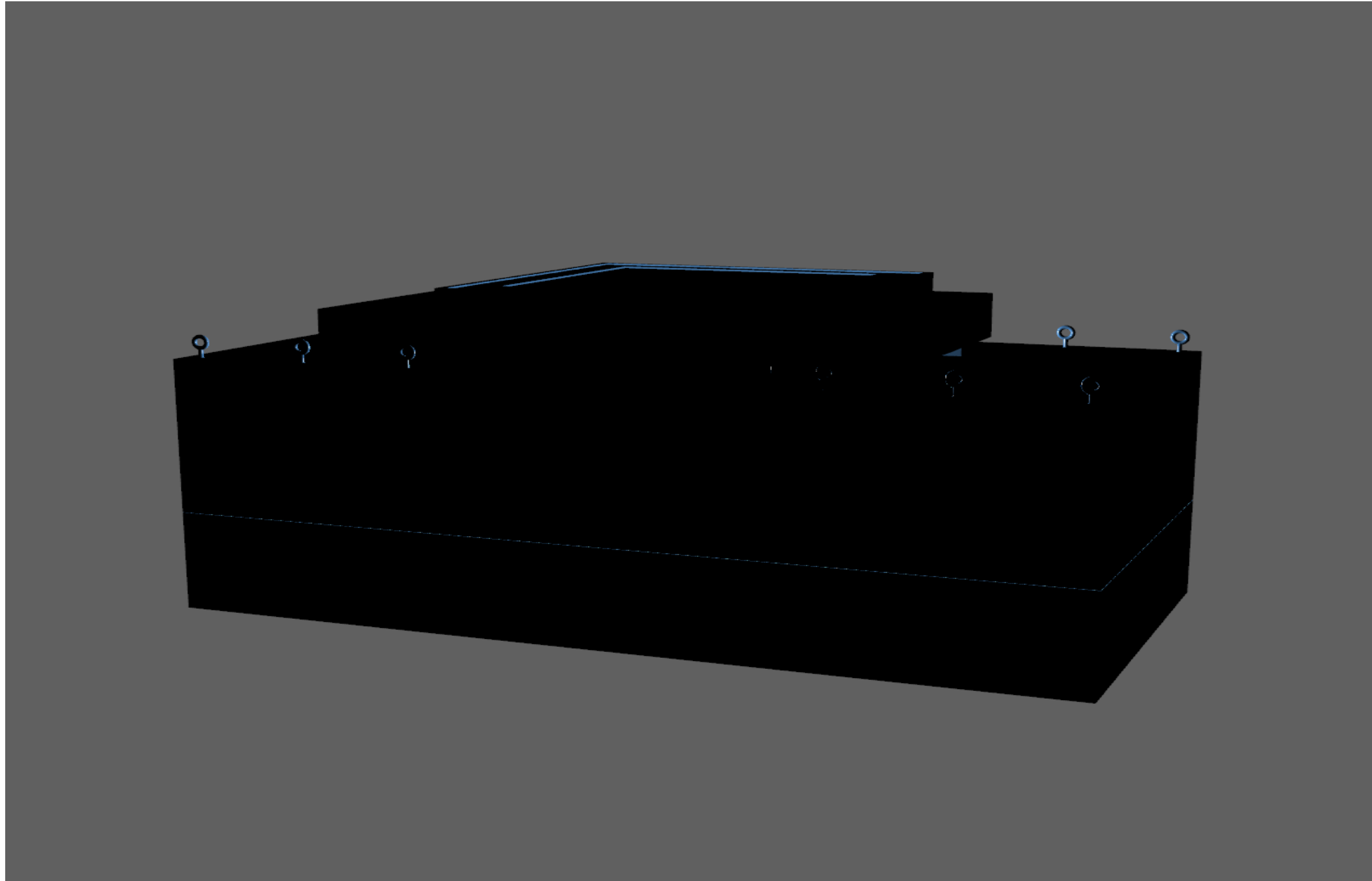
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING
3D INTERACTIVE MODELS



PRODUCT CONFIGURATIONS
(CLICK BUTTONS TO TOGGLE VIEWS)

- USE THE SCROLL WHEEL TO ZOOM
- HOLD DOWN THE LEFT MOUSE BUTTON TO ROTATE
- HOLD DOWN CTRL AND LEFT MOUSE BUTTON TO MOVE



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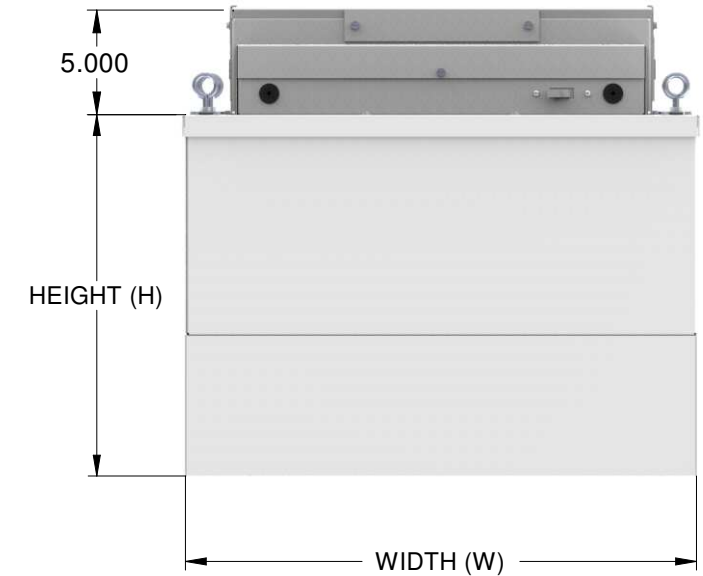
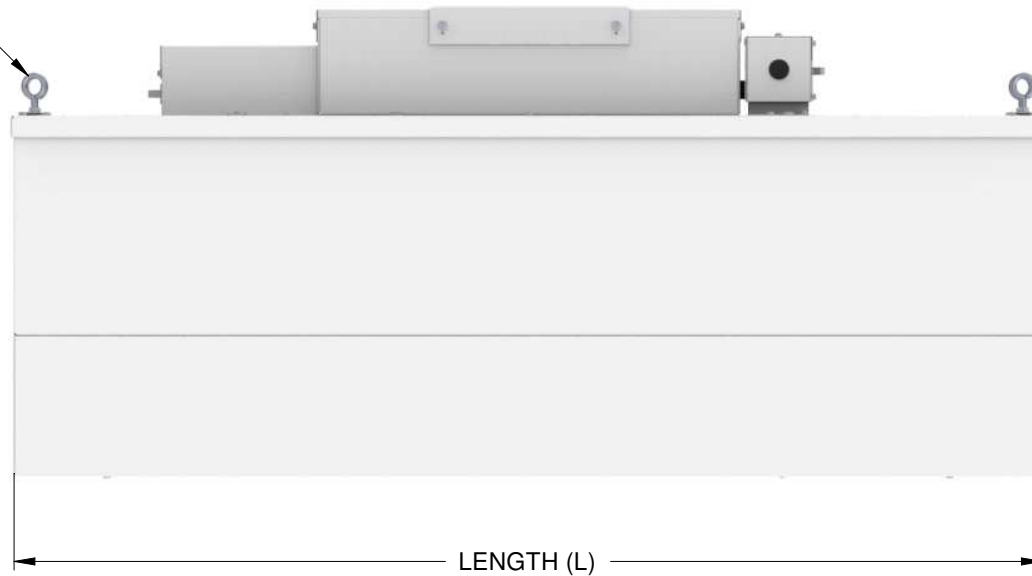
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING CONSTRUCTION DETAILS AND OPTIONS

ZINC PLATED EYEBOLTS FOR HANGING



STANDARD CONSTRUCTION

- EXTRUDED ALUMINUM FILTER FRAME WITH URETHANE GEL
- TWO STAINLESS STEEL RETAINER CABLES PER UNIT
- DIFFUSER FACE SECURED WITH QUARTER TURN FASTENERS
- 14 GA (.064 THICK) ALUMINUM PLENUM
- EXTRUDED ALUMINUM OUTER FRAME AND DIFFUSER FRAME
- ZINC PLATED EYE BOLTS FOR HANGING
- MOTOR/BLOWER ACCESSIBLE FROM ROOMSIDE AND TOPSIDE
- STATIC PRESSURE AND AEROSOL SAMPLE PORT
- EC MOTOR, 50/60 Hz, 1 PHASE

FINISH

- B12 STANDARD WHITE

INLET SIZES

- NONE (UNDUCTED)
- 10" ROUND
- 12" ROUND
- 14" ROUND

PRE-FILTER

- WASHABLE PRE-FILTER
- MERV 8 PRE-FILTER

FILTER

- HEPA - 2" - IEST RP CC001 TYPE J
- ULPA - 2" - IEST RP CC001 TYPE F

WHEEL TYPE

- FORWARD CURVE BLOWER WHEEL
- BACKWARD CURVE BLOWER WHEEL (NOT AVAILABLE FOR 2x2)

FAN POWER VOLTAGE

- 115V
- 208V
- 240V
- 277V

FAN CONTROLLER

- EC MOTOR STANDARD SPEED CONTROLLER
- BACnet FLOW CONTROLLER

FILTER AND MOTOR STATUS LIGHTS

- TRI-COLOR FACE MOUNTED LED FILTER AND MOTOR STATUS LIGHT (AVAILABLE WITH BACnet FLOW CONTROLLER ONLY)

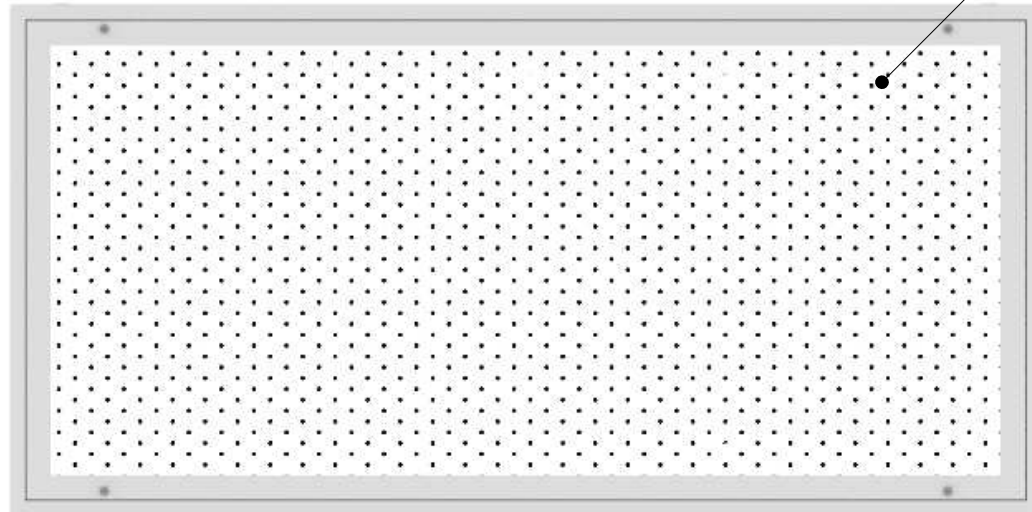
MOTOR PROGRAM

- CONSTANT FLOW (NOT AVAILABLE FOR BACKWARD CURVE BLOWER WHEEL)
- CONSTANT TORQUE

OPTIONS

- WALL MOUNTED SPEED CONTROL (SEE KROWN-CS SUBMITTAL 274235)
- 3/8" NPT AEROSOL INJECTION PORT (SEE INJ DETAILS ON SHEET 5)

TRANSLUCENT PERFORATED POLYCARBONATE DIFFUSER FACE
13% FREE AREA



FORWARD CURVE BLOWER WHEEL

NOMINAL UNIT SIZE	WIDTH (W)	LENGTH (L)	HEIGHT (H)	MAX AMPS FAN (115/240/277)
24x24	23.625	23.625	17.000	2.7/1.8/1.5
24x36	23.625	35.625	17.000	4.8/2.8/2.8
24x48	23.625	47.625	17.000	5.0/3.3/2.9

BACKWARD CURVE BLOWER WHEEL

NOMINAL UNIT SIZE	WIDTH (W)	LENGTH (L)	HEIGHT (H)	MAX AMPS FAN (115/240/277)
24x36	23.625	35.625	17.000	4.0/2.2/1.8
24x48	23.625	47.625	17.000	4.0/2.0/1.8



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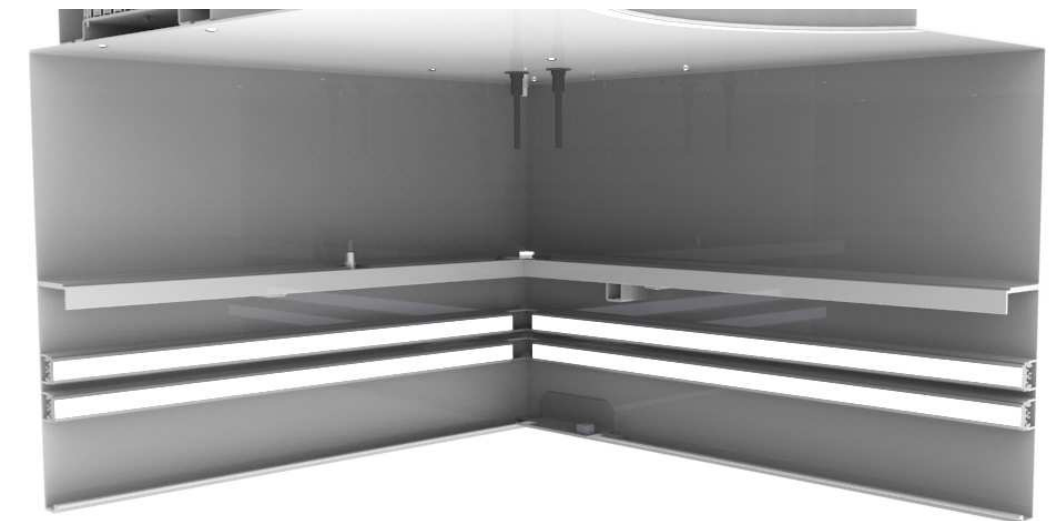
KROWN-L

FAN FILTER UNIT WITH INTEGRATED LED LIGHTING

LED LIGHT DETAILS



SINGLE ROW LED LIGHTS



DOUBLE ROW LED LIGHTS

LIGHTING MAXIMUM AMP DRAW

NOMINAL UNIT SIZE	MAX LIGHTING AMPS (115/240/277)	
	SINGLE ROW	DOUBLE ROW
24x24	1.2/0.6/0.5	1.2/0.6/0.5
24x36	1.2/0.6/0.5	2.4/1.1/1.0
24x48	1.2/0.6/0.5	2.4/1.1/1.0

LED LIGHTING SPECIFICATIONS

- LED LIGHTING INTEGRATED INTO EACH DIFFUSER MODULE
- IP67 RATED LED STRIP WITH QUICK CONNECTORS
- COLOR RENDERING INDEX (CRI) 90+
- L80 > 60,000 HRS.
- VISIT KEYSTONE CLEAN AIR SOLUTIONS WEBSITE FOR IES PHOTOMETRIC FILES

LED COLOR TEMPERATURE

- 5000K (5000 KELVIN)

LED ROWS

- SINGLE ROW
- DOUBLE ROW

LISTINGS

- **UL 507** STANDARD FOR ELECTRIC FANS
- **UL 2043** FIRE TEST FOR HEAT AND VISIBLE SMOKE RELEASE FOR DISCRETE PRODUCTS AND THEIR ACCESSORIES INSTALLED IN AIR-HANDLING SPACES
- **UL2108** LOW VOLTAGE LIGHTING SYSTEM
- **UL8750** LIGHT EMITTING DIODE (LED) EQUIPMENT FOR USE IN LIGHTING PRODUCTS
- **UL1310** CLASS 2 POWER UNITS
- **UL94** FLAMMABILITY OF PLASTIC MATERIALS FOR PARTS IN DEVICES AND APPLIANCES
- **IP67** RATED INGRESS PROTECTION AGAINST DUST AND LIQUIDS
- **MIL-STD-461** FOR ELECTROMAGNETIC COMPATIBILITY



PROJECT:

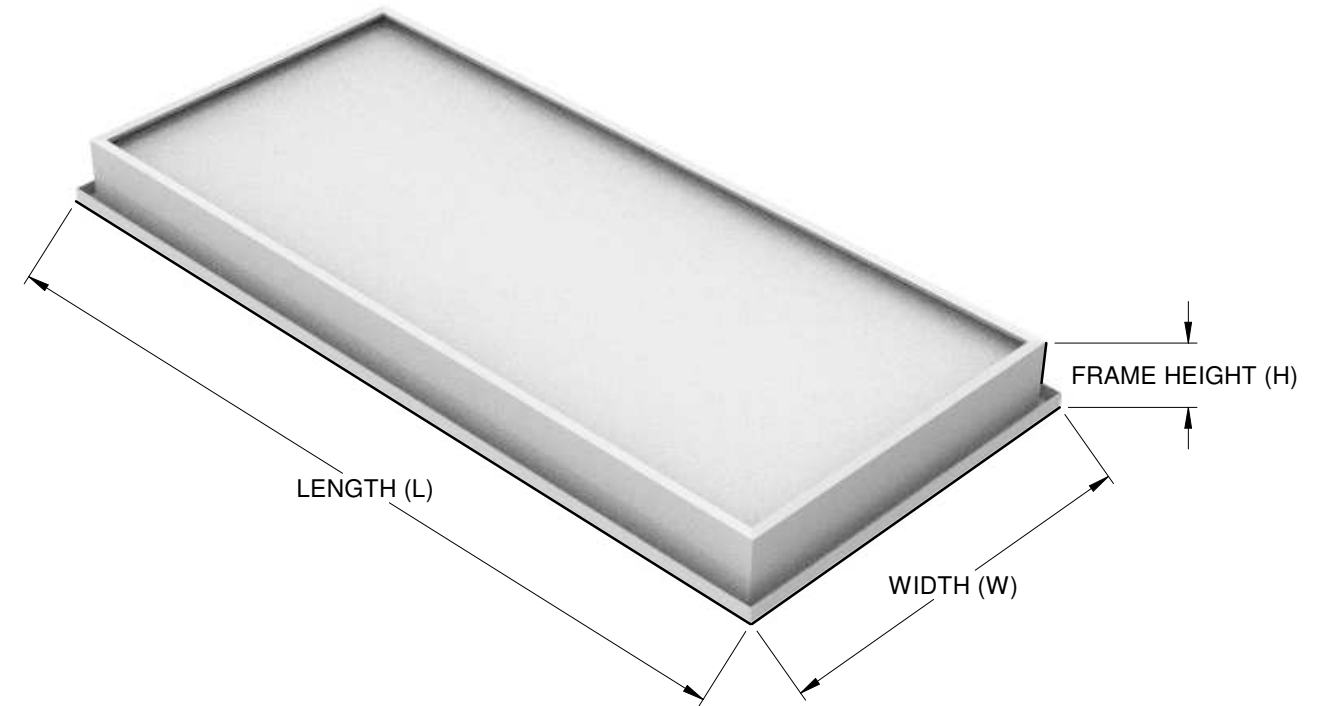
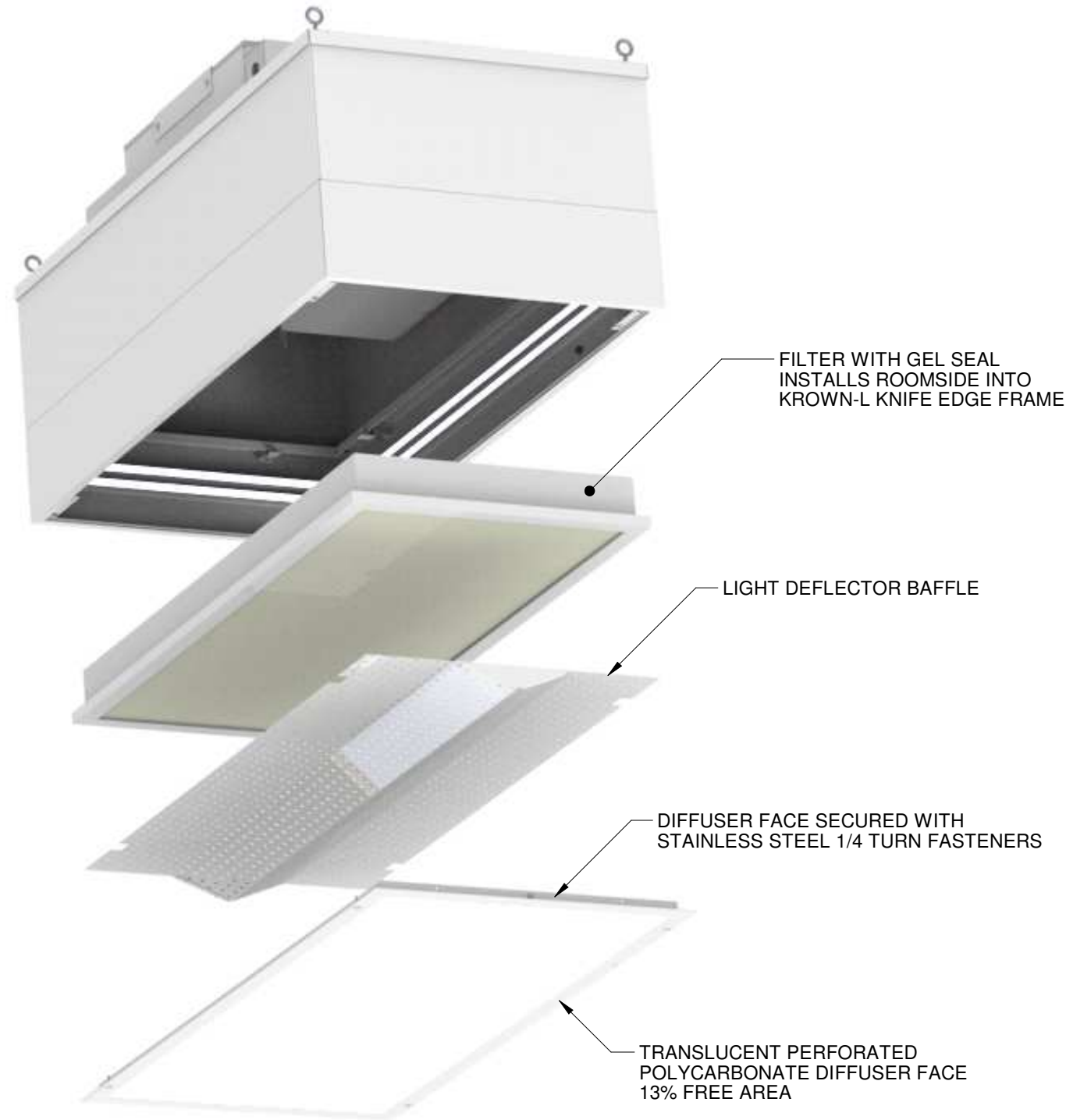
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING FILTER DETAILS



NOTES

- FILTER PLEATS RUN PARALLEL TO THE WIDTH (W) DIMENSION
- DIMENSIONS L & W TOLERANCES $\pm \frac{1}{16}$ "
- FILTERS COME WITH GEL SEAL FILLED CHANNEL
- EXPANDED PAINTED WHITE SCREEN ON THE DOWNSTREAM SIDE
- FRAME DETAILS:
 - MATERIAL: ANODIZED EXTRUDED ALUMINUM
 - THICKNESS: $\frac{1}{16}$ " (MINIMUM)
- HEPA FILTERS EFFICIENCY AND LEAK SCAN TESTED TO IEST RP CC001 TYPE J
- ULPA FILTERS EFFICIENCY AND LEAK SCAN TESTED TO IEST RP CC001 TYPE F
- FILTER PACKAGED SEPERATELY FROM DIFFUSER FOR JOB SITE INSTALLATION BY OTHERS

ACTUAL FILTER SIZE

WIDTH (W)	LENGTH (L)	HEIGHT (H)
20.69	20.69	2.88
20.69	32.69	2.88
20.69	44.69	2.88



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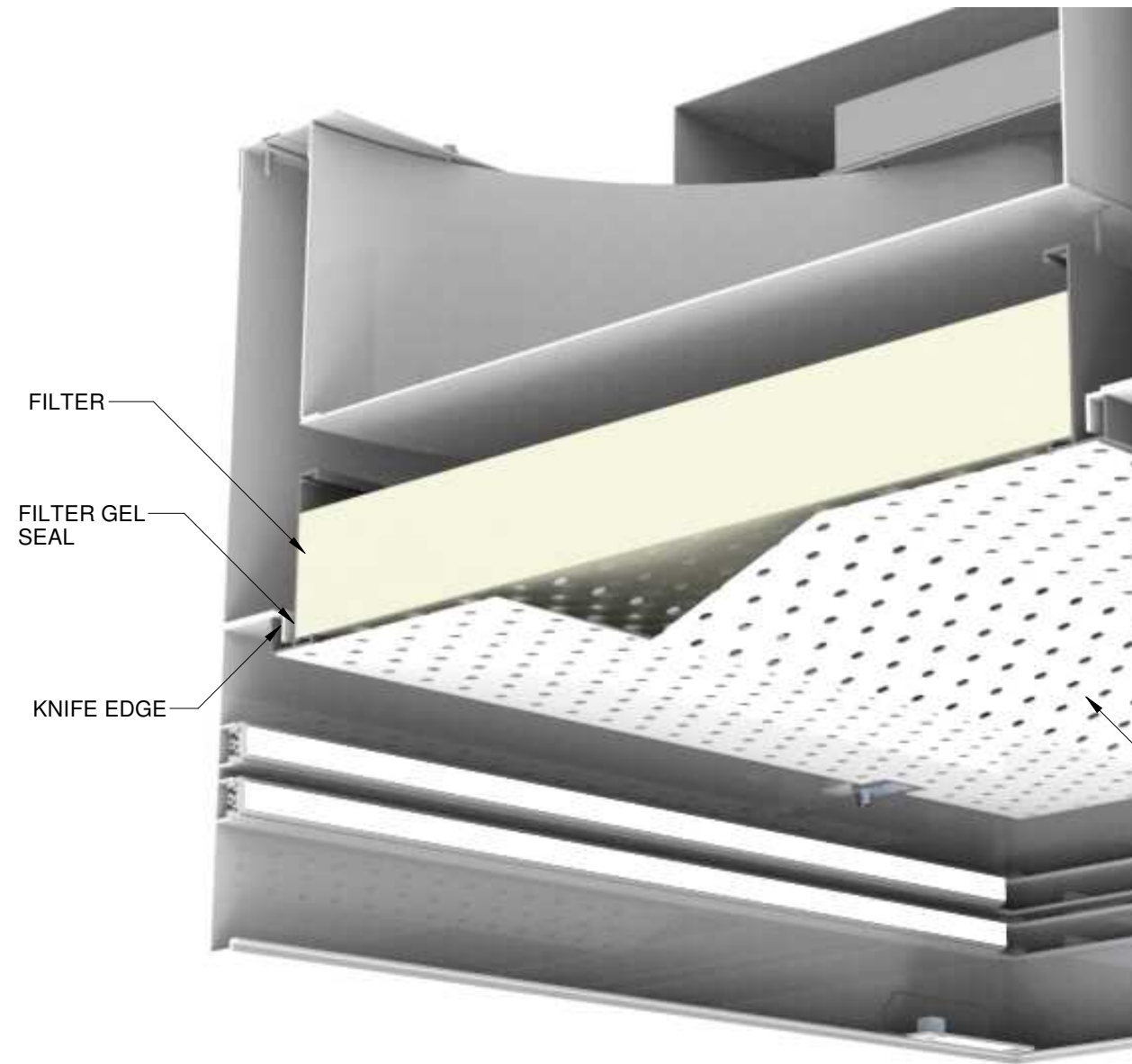
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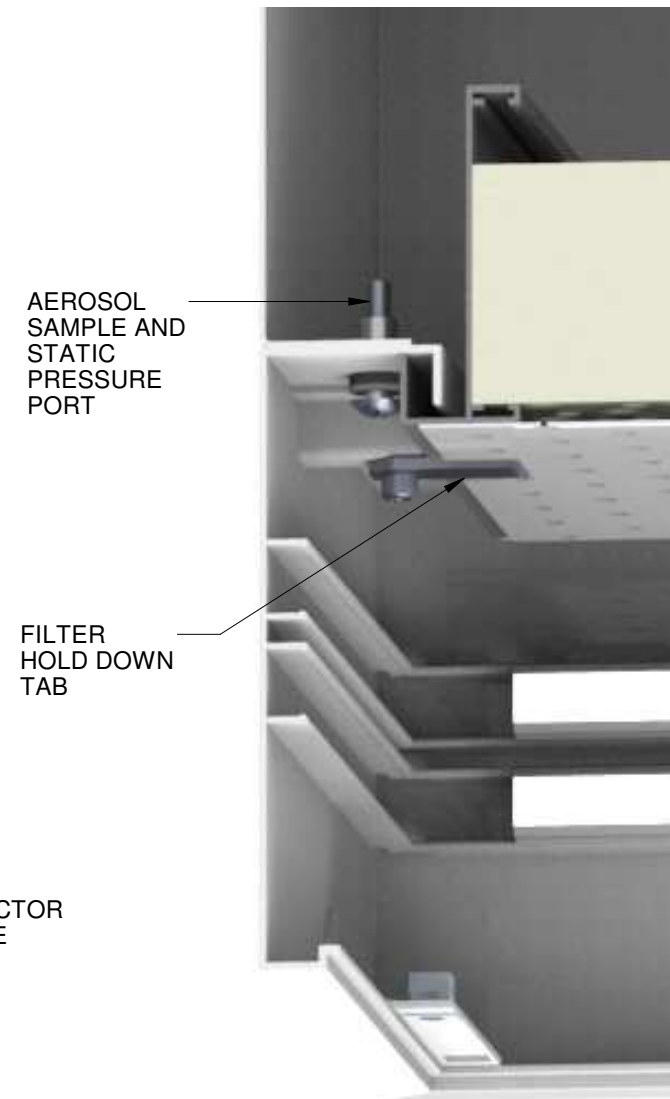
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING DETAIL VIEWS



AEROSOL/STATIC PORT DETAIL



INJ - AEROSOL INJECTION PORT DETAIL



- LED LIGHTS BELOW INJ PORT MUST BE REMOVED TO ACCESS THE PORT.

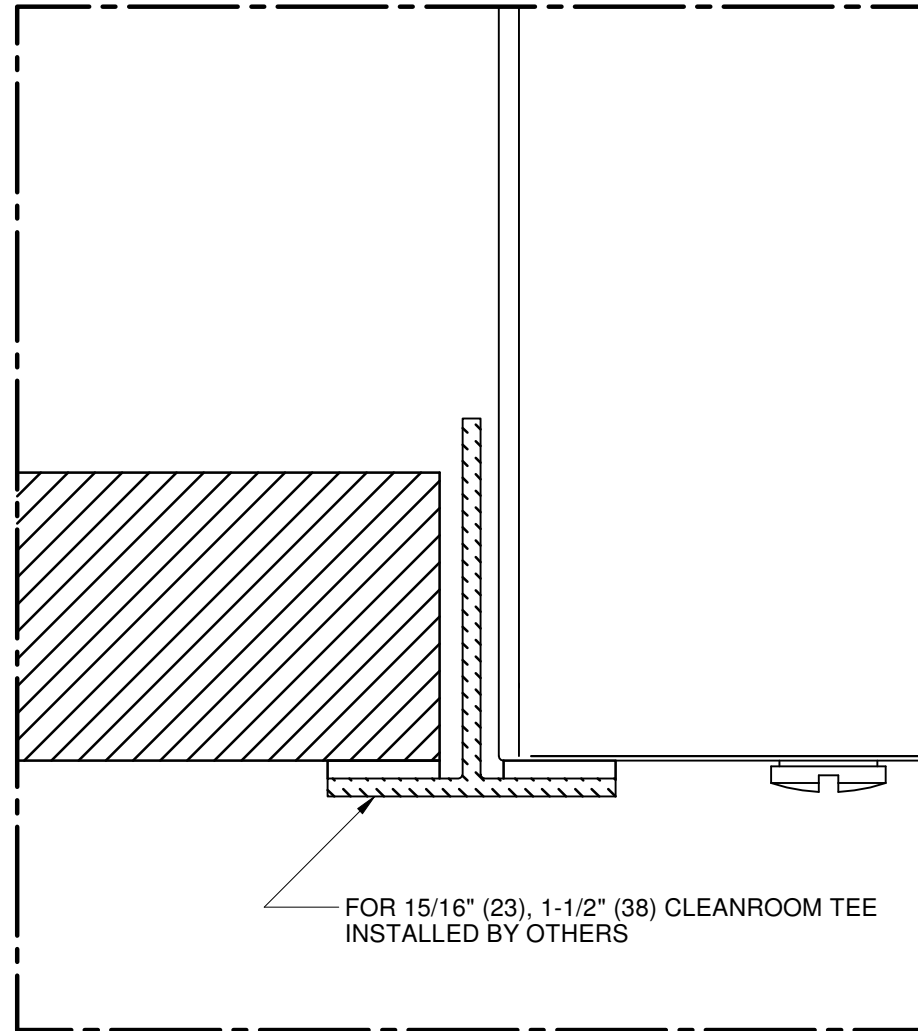


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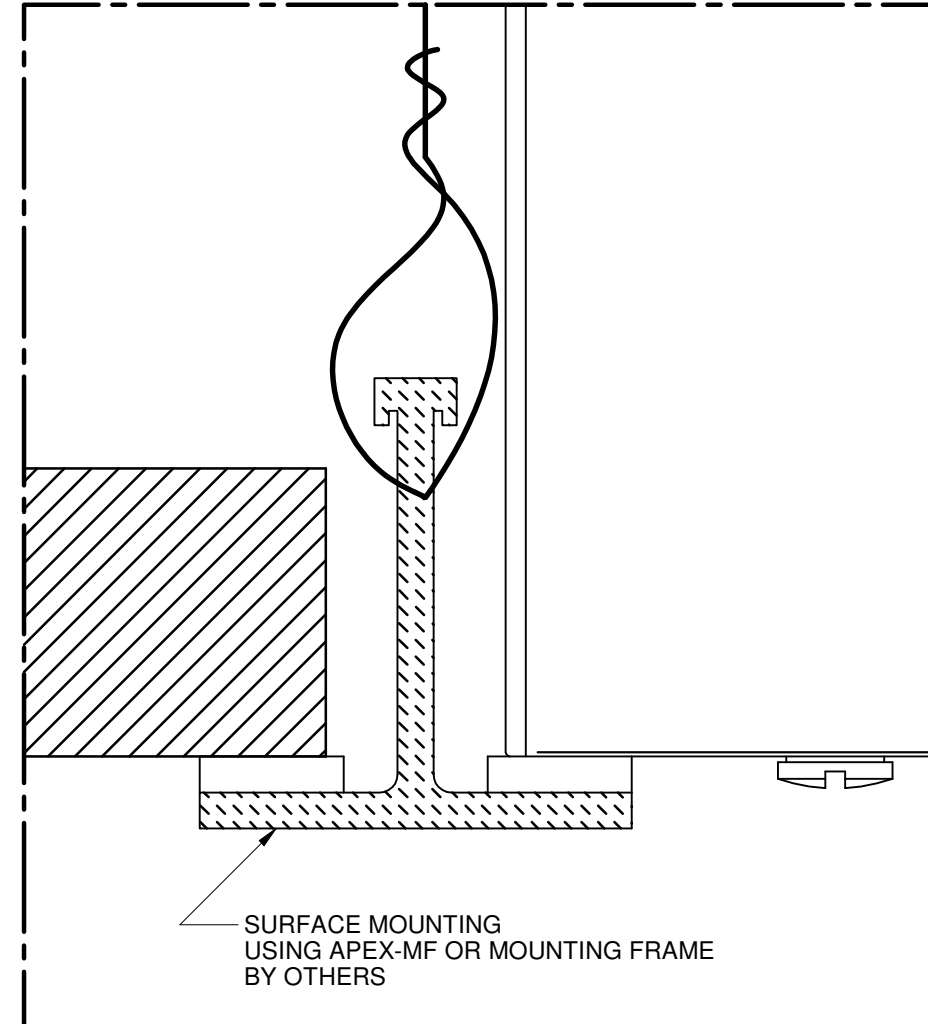
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING MOUNTING DETAILS

T-BAR MOUNTING



SURFACE MOUNTING



NOTES:

- LAY IN CEILING INSTALLATION ONLY. UNIT SIZE DESIGNED FOR 1" WIDE T-BAR OR 1.5" WIDE T-BAR.
- FOR SURFACE MOUNT INSTALLATION ORDER SEPERATE APEX MOUNTING FRAME.



PROJECT:

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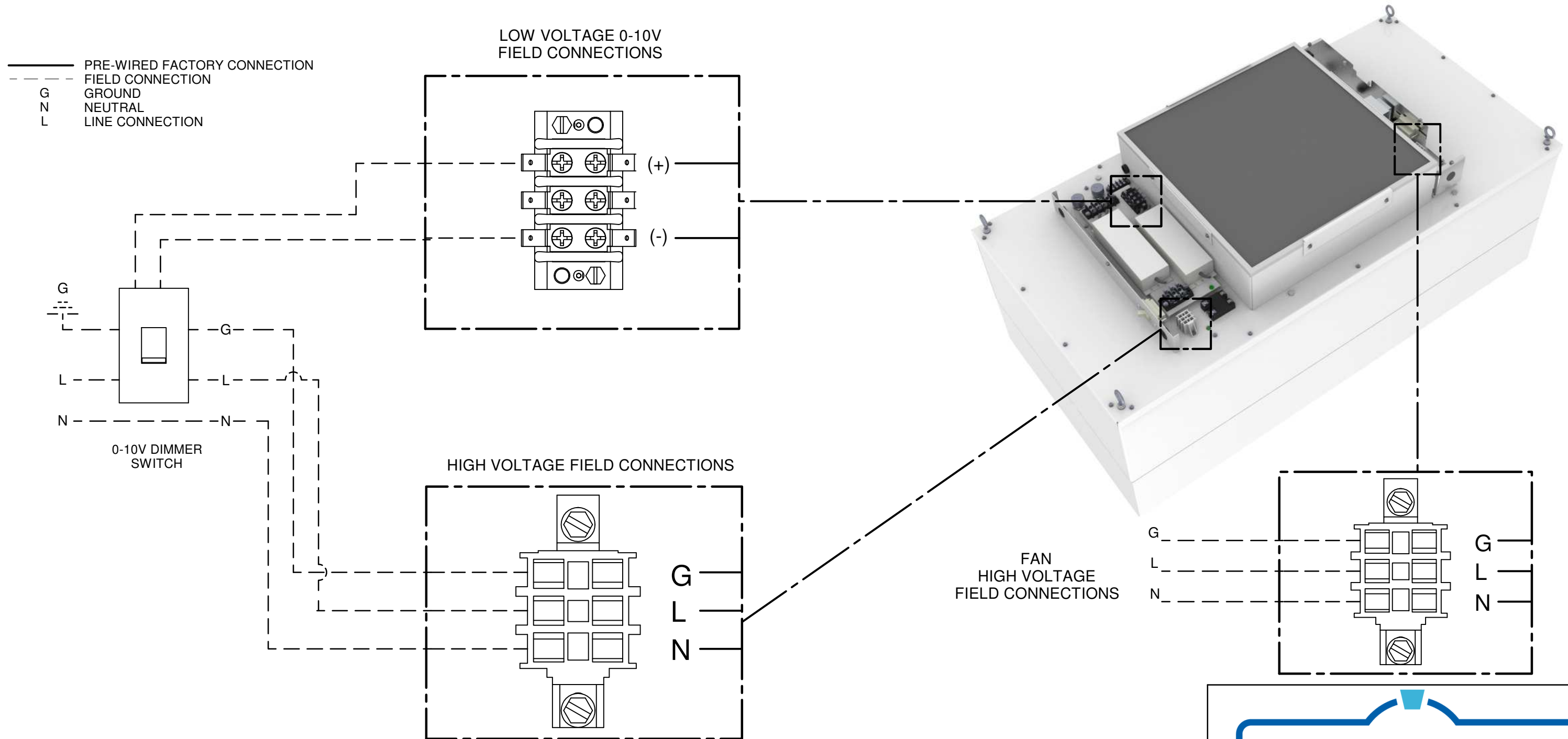
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING

□ DIMMER - TYPICAL WIRING DETAILS



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INSTALLATION WORK AND ELECTRICAL WIRING MUST BE COMPLETED BY A CERTIFIED ELECTRICIAN AND/OR QUALIFIED PERSON(S) IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES AND STANDARDS

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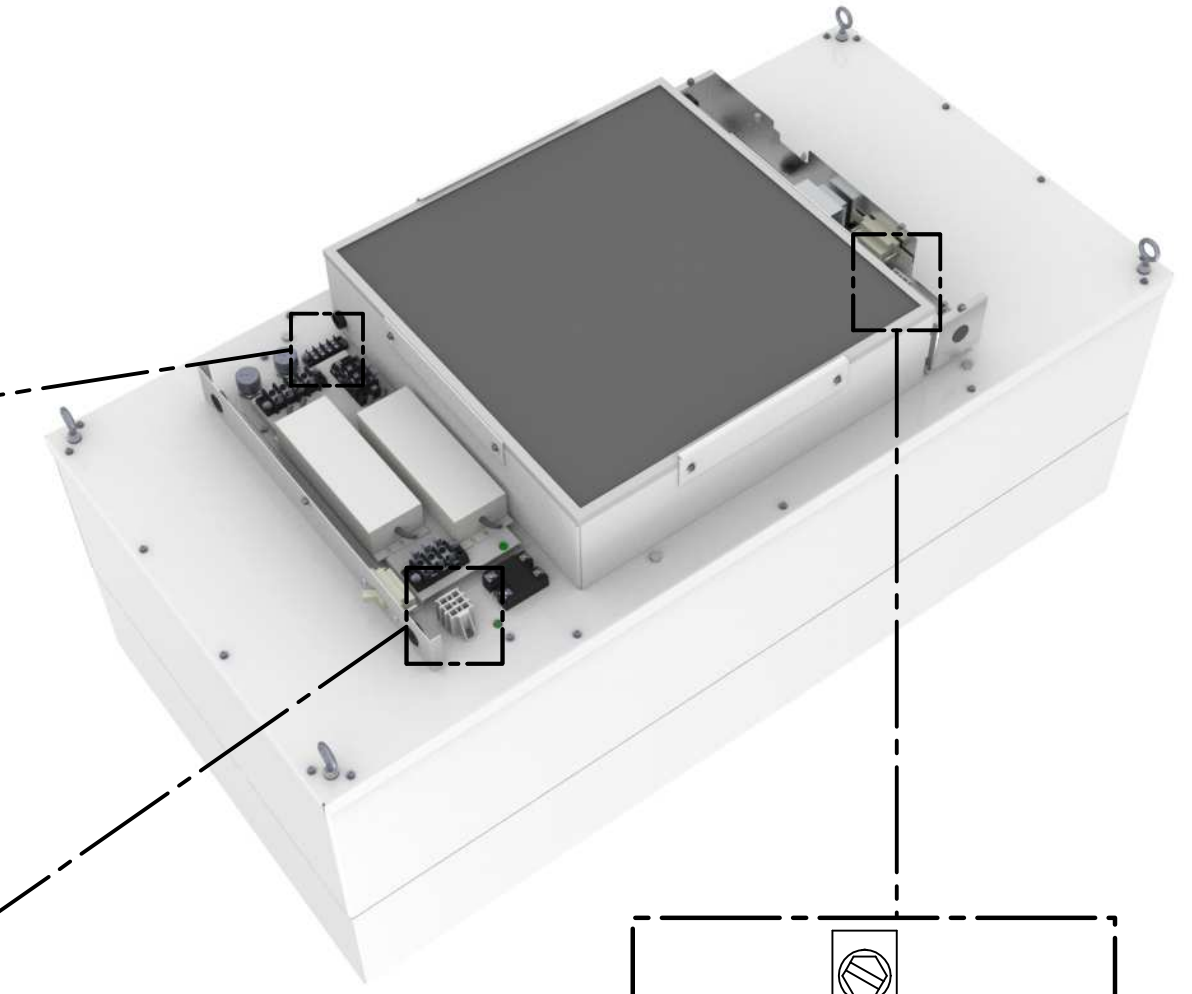
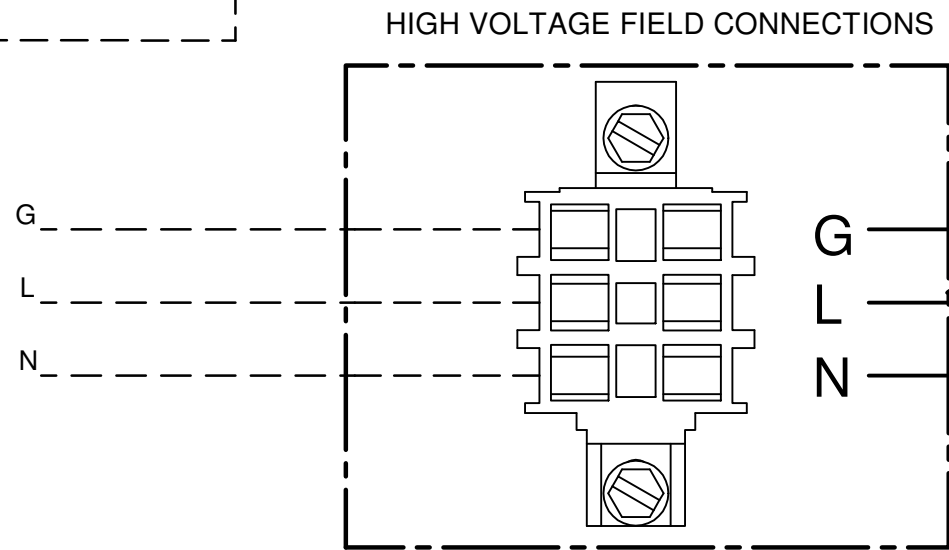
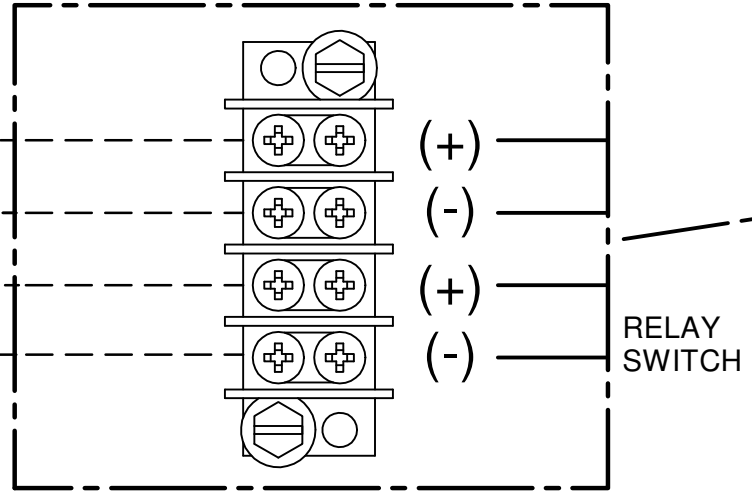
FAN FILTER UNIT WITH INTEGRATED LED LIGHTING

□ BAS - BUILDING AUTOMATION SYSTEM - TYPICAL WIRING DETIALS

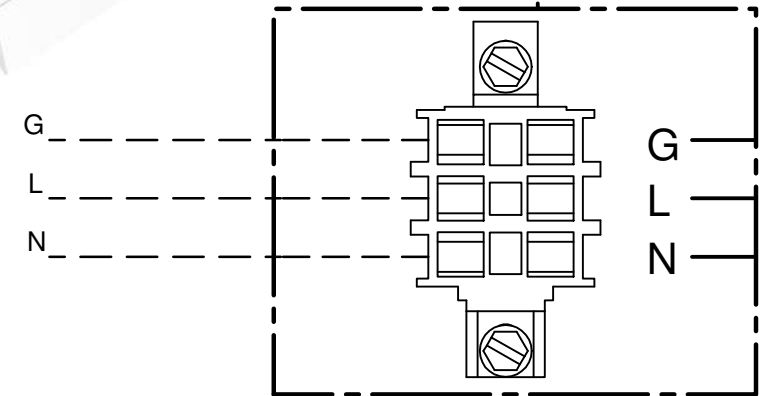
— PRE-WIRED FACTORY CONNECTION
 - - - FIELD CONNECTION
 G GROUND
 N NEUTRAL
 L LINE CONNECTION

B.A.S. 0-10V
DIMMING SIGNAL

B.A.S. ON/OFF
SIGNAL



FAN
HIGH VOLTAGE
FIELD CONNECTIONS



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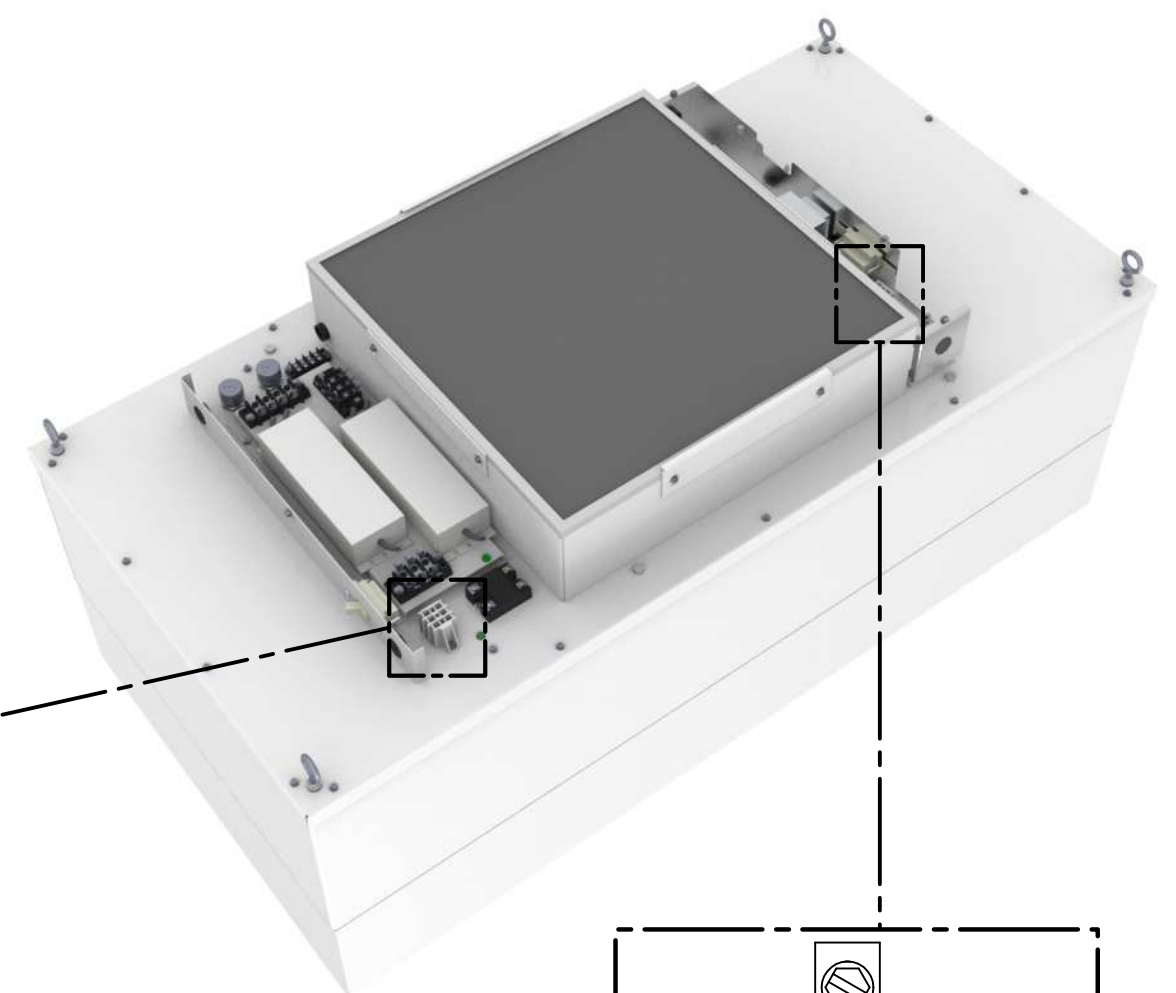
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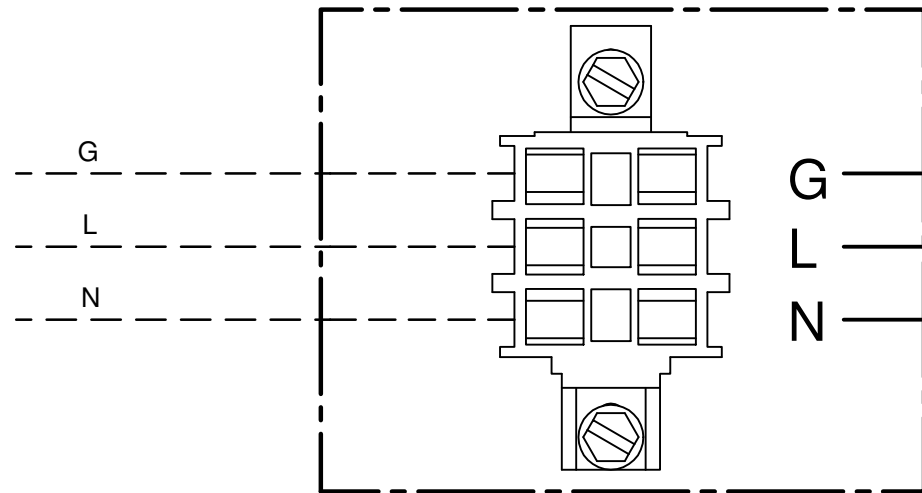
FAN FILTER UNIT WITH INTEGRATED LED LIGHTING

□ BACNET - TYPICAL WIRING DETAILS

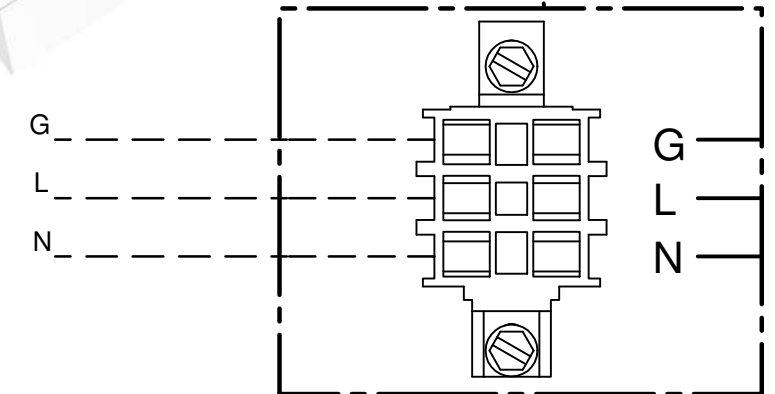
——— PRE-WIRED FACTORY CONNECTION
 - - - - - FIELD CONNECTION
 G GROUND
 N NEUTRAL
 L LINE CONNECTION



HIGH VOLTAGE FIELD CONNECTIONS



FAN HIGH VOLTAGE FIELD CONNECTIONS



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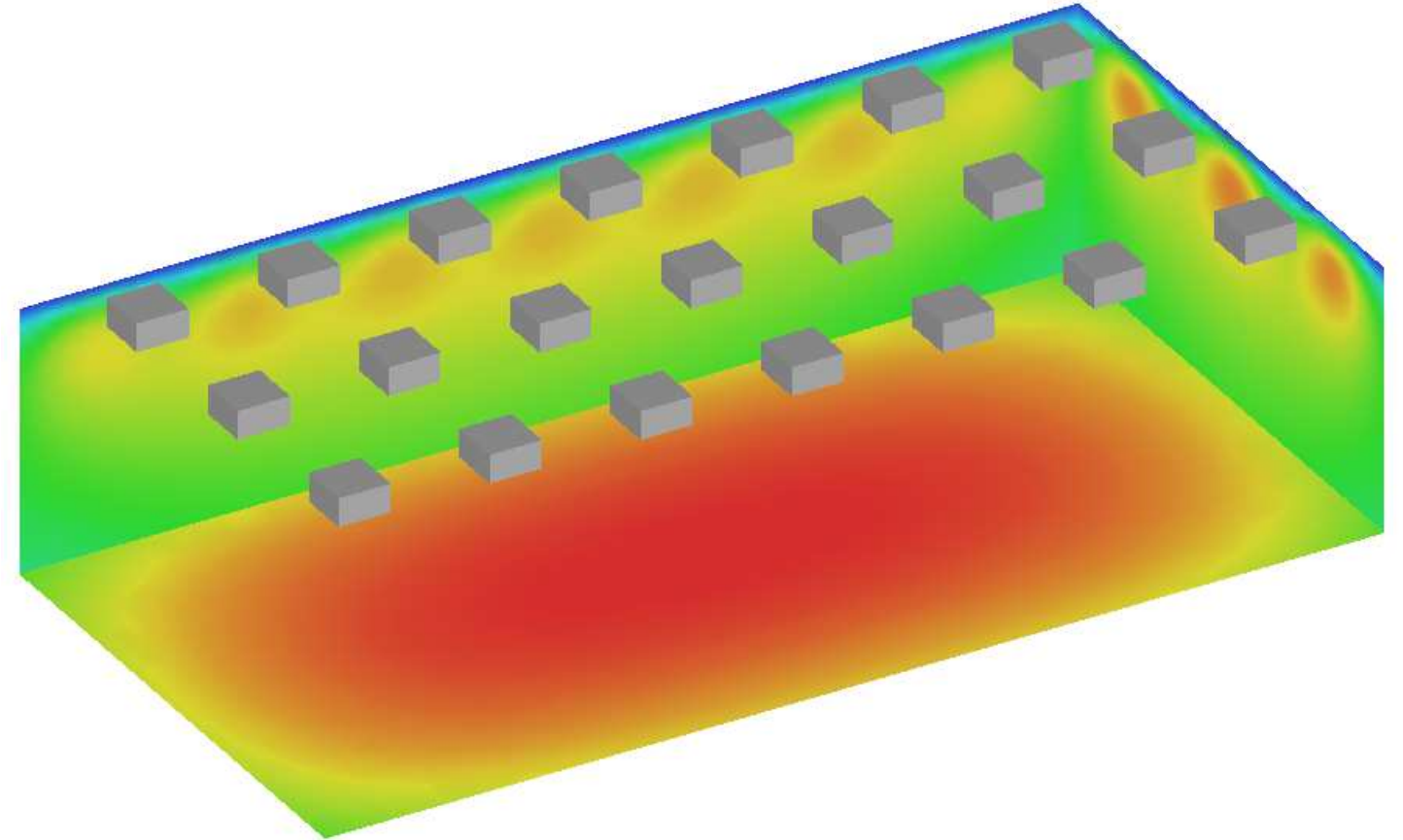
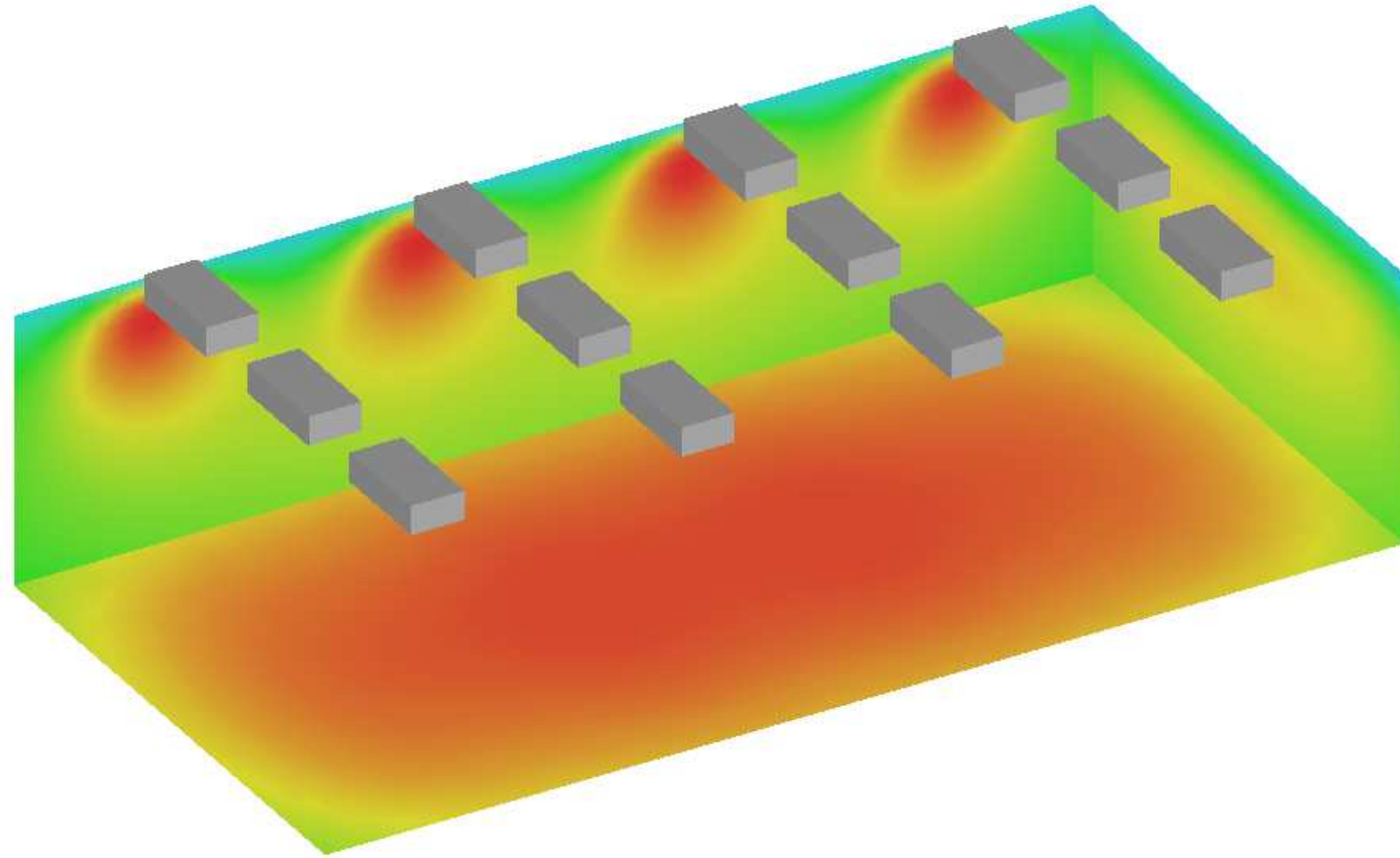
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FAN FILTER UNIT WITH INTEGRATED LED LIGHTING PHOTOMETRIC ANALYSIS - EXAMPLE LAYOUTS



% CEILING COVERAGE REQUIREMENT		
24 x 48 KROWN-L MODULES		
TARGET AVERAGE ILLUMINANCE (FC)	NUMBER OF ROWS OF LED LIGHTS PER MODULE	
	SINGLE ROW	DUAL ROW
50 FC	21%	12%
75 FC	32%	18%
100 FC	45%	24%

% CEILING COVERAGE REQUIREMENT		
24 x 24 KROWN-L MODULES		
TARGET AVERAGE ILLUMINANCE (FC)	NUMBER OF ROWS OF LED LIGHTS PER MODULE	
	SINGLE ROW	DUAL ROW
50 FC	39%	21%
75 FC	57%	32%
100 FC	78%	42%

ROOM DIMENSION PARAMETERS:

800 SQ FT
10 FT CEILING HEIGHT
3 FT WORKPLANE

ROOM REFLECTANCES:

CEILINGS: 80%
WALLS: 50%
FLOORS: 20%

- THE TABLES REFLECT THE PERCENTAGE OF KROWN-L CEILING COVERAGE REQUIRED TO MEET AVERAGE ILLUMINANCE (FC) REQUIREMENTS
- 50 FC AVERAGE ILLUMINATION WITH 2 ROWS OF LEDS PER MODULE SHOWN

THE CALCULATED VALUES DO NOT INCLUDE OR ACCOUNT FOR ADDITIONAL LIGHTING.
LIGHTING ANALYSIS HAS BEEN PERFORMED USING LAB TESTED .IES FILES AND STANDARD ROOM REFLECTANCE VALUES.
LIGHTING CALCULATIONS ARE ESTIMATED USING BEST PRACTICE AND MAY DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS.



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