



# COMMERCIAL SERIES

## Commercial UVGI System Configuration Guidelines

This guide is intended to make the process of commercial UVGI system configuration easy and accurate. Following are product descriptions, coil sizing examples and important information such as:

- Fresh-Aire UV® Commercial Series UVC lamp types
- Power supply descriptions and part numbers
- Descriptions of Fresh-Aire UV® Commercial Series products
- Guide to Fresh-Aire UV® Commercial Series part numbers
- Coil sizing examples
- UVGI Accessories

### BlueCalc™

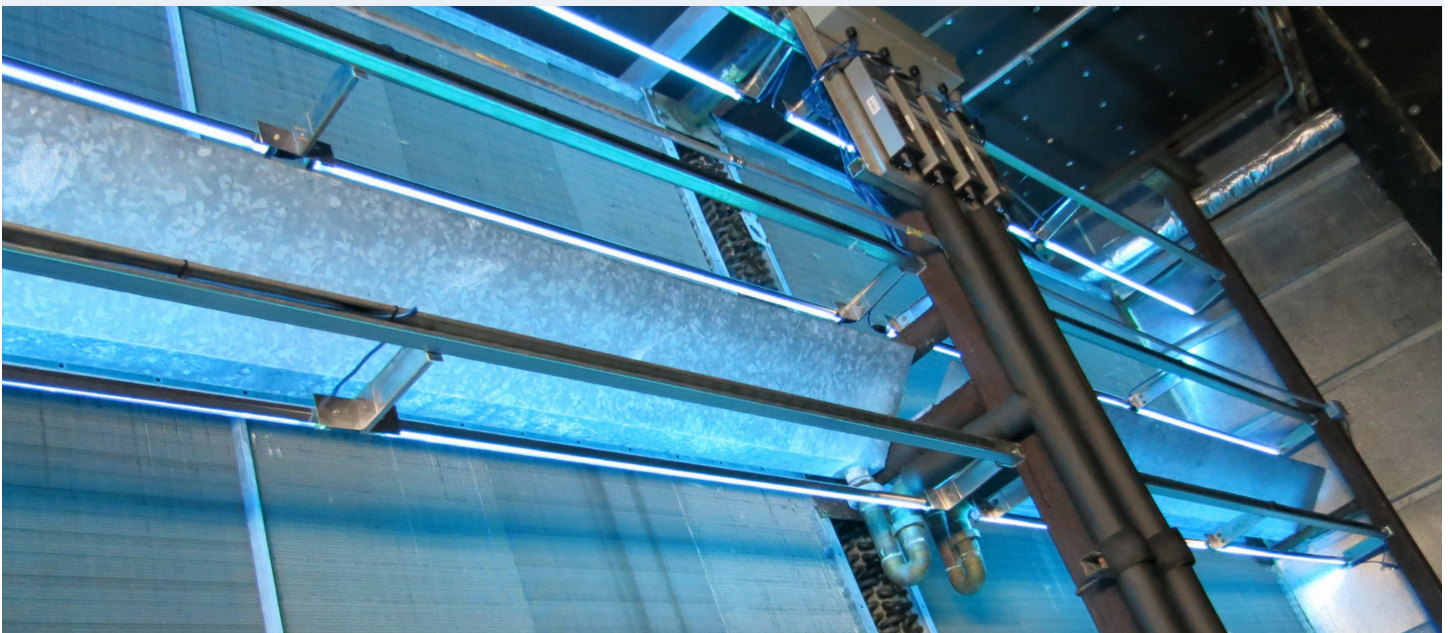
Fresh-Aire UV® offers commercial building managers and contractors a free online UVGI System Design Analysis Service based on our proprietary BlueCalc™ UVC light modelling software. Using this convenient service ensures an accurate UVGI system configuration. [Go to www.freshaireuv.com/commercial-bluecalc.html](http://www.freshaireuv.com/commercial-bluecalc.html)

### Lamps

Fresh-Aire UV® Commercial Series normal output one and two year UVC lamps are available in three sizes: 32" 46" and 60". In most situations two year lamps offer better value and are recommended. High output lamps (generally used for airborne not surface disinfection) are available only as a one year 32" lamp (specify 120 or 230 VAC). Optional Teflon® coating is available for all lamps (add -TF at the end of part number). Choose normal output lamps for surface and air treatment or high-output lamps for intensive air treatment.

### Power Supplies

All Fresh-Aire UV® Commercial Series products come with our heavy-duty water-resistant power supply(s). Power supplies are cased in high quality NEMA enclosures.





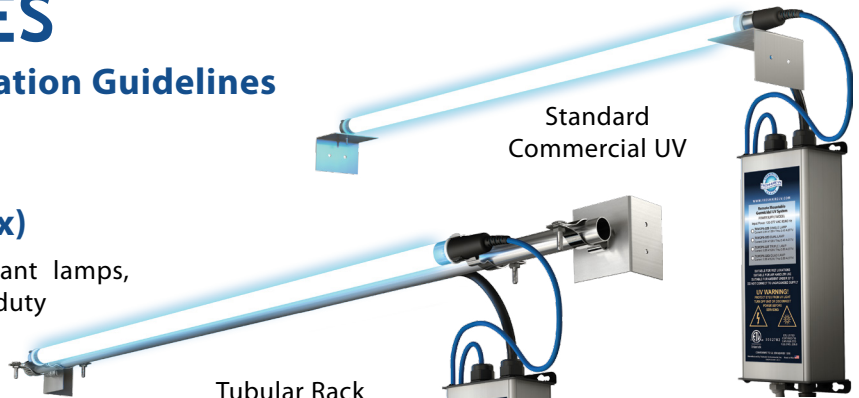
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### Systems

#### Standard Commercial UV (TUV-xx)

The basic kit includes high-quality water-resistant lamps, convenient "L" mounting brackets, and a heavy-duty multi-voltage water-resistant power supply which comes with a lifetime warranty.

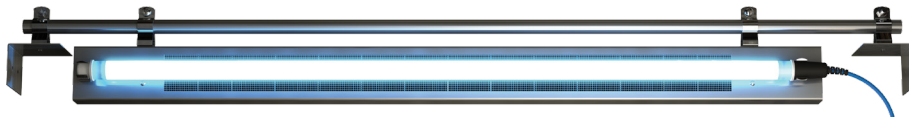


Standard Commercial UV

Tubular Rack System (TRS)

#### Tubular Rack System (TUV-TRS-xx)

The TRS System uses standard off-the-shelf 1/2 EMT tubing (not included) as a fully customizable framework for the UV lights. The kit includes specialised stainless steel mounting hardware as well as the lamps and power supply(s). Add optional lamp shields, 12" coil stand-offs, and vertical support as needed.

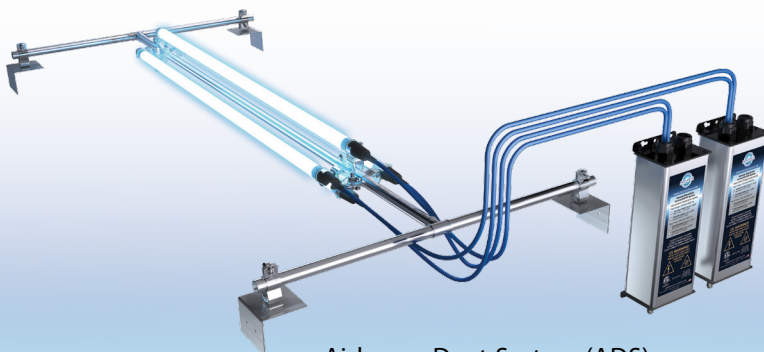


APCO® Rack System

#### APCO® Rack System (TUV-APCO-xx)

The APCO® Rack System is similar to the TRS System and uses standard off-the-shelf 1/2 EMT tubing (not included) as a fully customizable framework for the UV lights. In addition, the kit includes our award-winning APCO® activated carbon cells, a laboratory-proven PCO air treatment technology which reduces airborne odors and toxic VOCs.

APCO® cell elements are available in sizes 32", 46", and 60" to fit the three lamp sizes. The kit includes APCO® cell elements, specialised stainless steel mounting hardware, lamps and power supply(s). Add 12" coil stand-offs, and vertical supports as needed.



Airborne Duct System (ADS)

#### Airborne Duct System (TUV-ADS-xx)

The ADS System is designed for air-stream disinfection and typically uses high-output lamps. These systems can be custom-configured with up to six lamps. Everything necessary for installation is included in the kit.



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### Part Numbers

Fresh-Aire UV® parts numbers start with our manufacturers designation, TUV (Triatomic UV Commercial) followed by the system type (TRS, APCO, ADS Etc.). Next is lamp info: the first digit is 1 or 2 for longevity in years followed by lamp length in inches. The last character represents the number of lamps. The Airborne Duct System also has a designation for power supply voltage, 120 or 230 VAC.

Example 1	Example 2
<p>Commercial Series 1 Year 32" Lamp(s)</p> <p><b>TUVC-TRS-132D</b></p> <p>Tubular Rack System Dual Lamps</p>	<p>Commercial Series 2 Year 60" Lamp(s)</p> <p><b>TUVC-APCO-260Q</b></p> <p>APCO® Rack System Quad Lamps</p>
Example 3	Example 4
<p>Commercial Series 1 Year 46" Lamp(s)</p> <p><b>TUVC-146S</b></p> <p>Standard System Single Lamp</p>	<p>Commercial Series 1 Year 32" High Output Lamp(s)</p> <p><b>TUVC-ADS-132-HO230-4</b></p> <p>Airborne Duct System 230 VAC 4 Lamps</p>

### Sizing for Coil Applications

First, determine the dimensions of the coil to be irradiated. Measure the height and width of the coil on the leaving end of the air handler. UVC Lamps are typically mounted on the supply side of the coil because this cool moist environment is prone to microbial contamination. If you cannot gain access to the air handler to take measurements just send us the air handler model number so we can research it to find the dimensions.



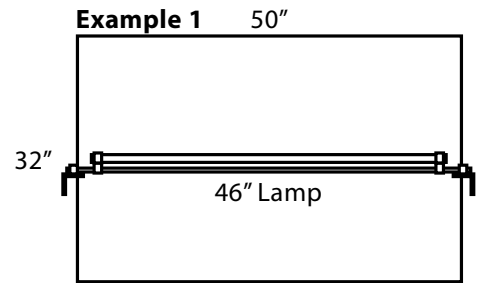
## Commercial UVC System Configuration Guidelines

### System Configuration Examples

Once you have coil dimensions, determine which Fresh-Aire UV lamps will most effectively irradiate the surface of the coil by using the following rules and guidelines.

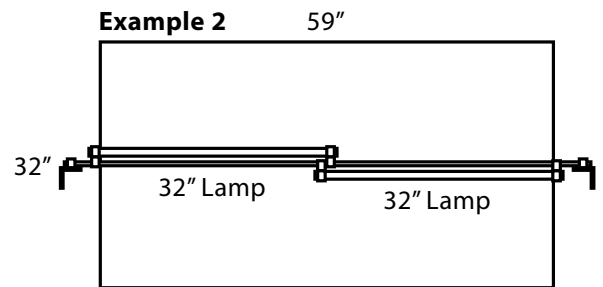
#### Example 1

Coil dimensions: 50"W x 32"H  
 One 46" Lamp would fit perfectly  
 Part Number TUV-TRS-260  
 The distance from the lamp end to the coil end should not exceed 6"



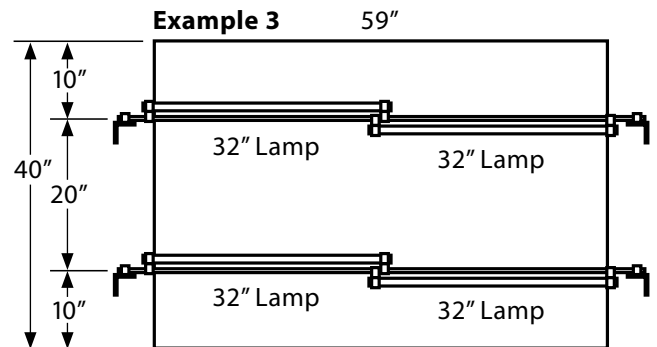
#### Example 2

Coil dimensions: 59"W x 32"H  
 Overlap two 32" lamps.  
 Part Number TUV-TRS-232D  
 A single 60" lamp would not be quite long enough



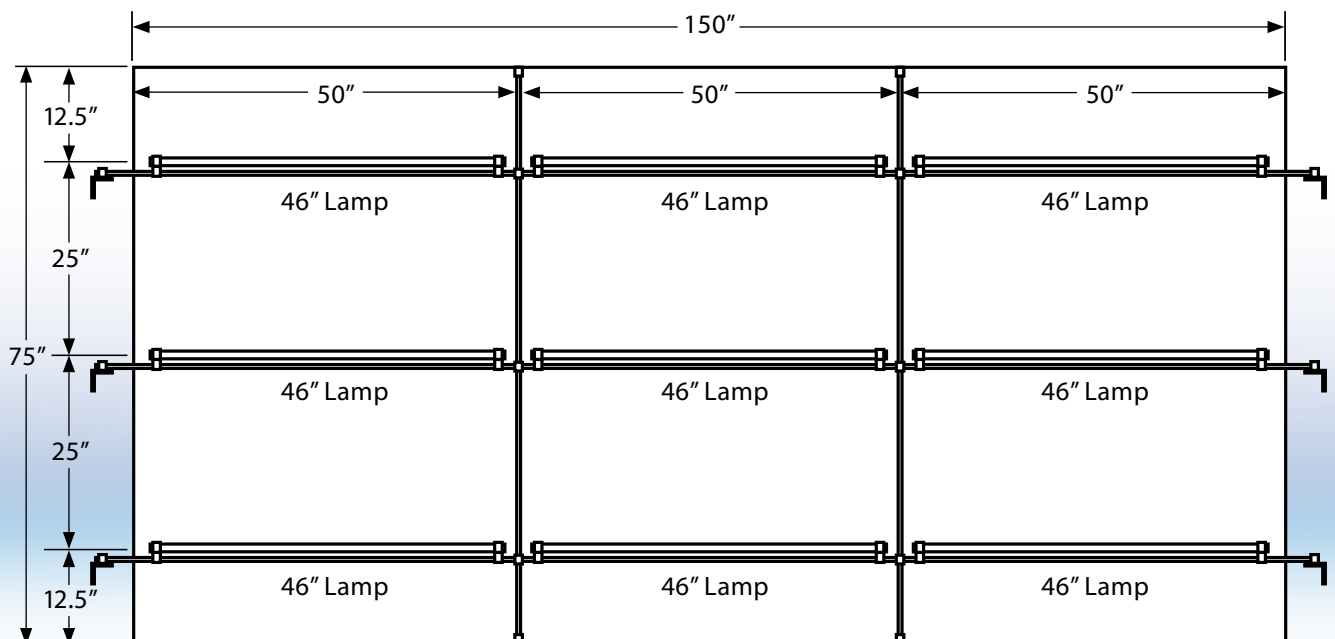
#### Example 3

Coil dimensions: 59"W x 40"H  
 This unit would call for (2) rows of (2) 32" lamps.  
 Part Number TUV-TRS-232Q  
 A second row is added when the height of the coil exceeds 35"



#### Example 4

Coil dimensions: 150"W x 50"H  
 This unit would call for (3) rows of (3) 46" Lamps.  
 Part Numbers TUV-TRS-246D Qty. (4) and TUV-TRS-246S Qty. (1)  
 A third row is added when coil height exceeds 72" It is ok to have up to 12" of spacing between lamps. Make sure lamps are evenly placed, in this scenario there would be a row every 24".





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### Accessories

Fresh-Aire UV has everything you need to make your commercial UVGI installation a success including a wide variety of accessories. Our commercial sales representatives can help you find all the right parts.

	PART NUMBER	FRESH-AIRE UV PRODUCT
<b>A</b>	TUVC-P	Factory wired power supply panel kit w/ surge suppressor
<b>B</b>	TUVC-CBX	UVGI control box with timers, lamp life, interlock switches
<b>C</b>	TUVC-VP-D	Large Commercial Viewport
<b>D</b>	TUVC-SHIELD-32	Lamp Shield 32"
<b>E</b>	TUVC-SHIELD-46	Lamp Shield 46"
<b>F</b>	TUVC-SHIELD-60	Lamp Shield 60"
<b>G</b>	TUVC-CMBRKT	12" Coil Mount Bracket
<b>H</b>	TUV-STR1/2	Strain Relief fitting - 1/2"
<b>I</b>	TUV-STR3/4	Strain Relief fitting - 3/4"
<b>J</b>	TUV-STR1	Strain Relief fitting - 1"
<b>K</b>	TUV-CBL5	5 foot remote mounting cable
<b>L</b>	TUV-CBL10	10 foot remote mounting cable
<b>M</b>	TUVC-INTLCK	Door Interlock Switch Kit
<b>N</b>	TUVC-LBRKT	L-Bracket
<b>O</b>	TUVC-LBRKTMG	L-Bracket w/ Magnet
<b>P</b>	TUVC-MNTR	UVC- Radiometer
<b>Q</b>	TUVC-VS	Vertical Support kit





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### Questions To Ask Before Sizing A Project:

1. Describe current coil condition: Clean  Moderately Clean  Moderately Dirty  Dirty

2. Primary Reason for Installing these products: Energy Savings  Maintenance  IAQ

3. AHU system TYPE (check all that apply): DX  Chilled water  Roof Top Package Unit

4. Air Handler/FanCoil type: Manufacturer  Model #

5. What are the dimensions of the coil in inches? Width  Height  Depth

6. Is the coil a single unit or several stacked coils? Yes  No

6B. If YES: Number Of Coils  Width  Height  Depth

6C. Number of extended drain pans

7. Are belts, wires, rubber materials or filters within 12" of cooling coil? Yes  No

8. Is 12" Available between to Coil and Blower? Yes  No

9. Available voltage? 120 VAC  208/230 VAC  277 VAC  Other?

10. Is odor/VOC control a concern? Yes  No

10B. If yes: Type of Odor  Fresh Air %  CFM

11. Is this an IAQ critical area requiring high output duct irradiation?

11B. If yes: Duct Material  Duct Length

12. Is there an installed UVGI system? Yes  No

13. Who will perform Installation? Subcontractor  In-House Staff



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