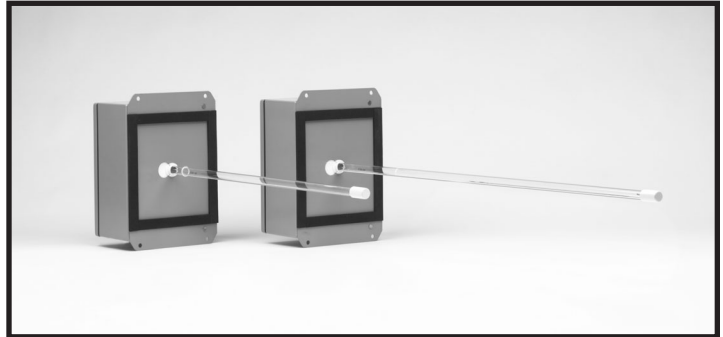


SPECIFICATIONS

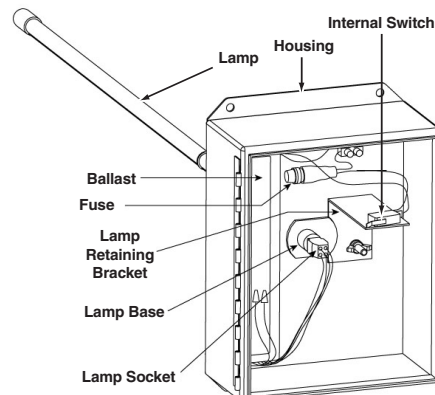
- Ultraviolet Germicidal Lamps shall kill bacteria, fungi, and mold that can grow on the cooling coil.
- Unit shall be designed for installation on a rooftop HVAC unit.
- Germicidal UV-C energy measured at a distance of 1 meter perpendicular to the center of the lamp shall be greater than $270 \mu\text{W}/\text{cm}^2 @ 253.7 \text{ nm}$ when measured in a galvanized steel duct with 70°F air moving at 400 FPM.
- Germicidal UV-C energy measured at a distance of 18 inches perpendicular to the center of the lamp shall be greater than $560 \mu\text{W}/\text{cm}^2 @ 253.7 \text{ nm}$ when measured in a galvanized steel duct with 70°F air moving at 400 FPM.
- Unit shall be complete with NEMA 4 electrical housing containing: auto-adjusting, variable voltage, high output ballast with a voltage range of 120-277 VAC, 50/60 Hz, high output lamp, fuse protection, and door interlock safety switch.
- NEMA 4 electrical housing shall be complete with mounting flanges, door weather gasket, and surface gasket to seal the unit to the HVAC equipment.
- Unit shall incorporate an electrical knock-out on the same side of the box that the lamp protrudes from to accommodate supply wiring from within the rooftop unit without requiring an additional electrical penetration in the electrical housing.
- The unit shall allow for the installation of weather resistant conduit fittings on any side of the electrical housing when wiring is external to the HVAC equipment.
- Unit electrical shall not exceed 60 watts for 24" units or 75 watts for 32" units.
- Unit shall allow for annual service to be conducted from the outside of the rooftop unit.
- Unit shall produce no ozone.
- Unit shall be UL and C-UL classified.
- Lamp life shall be one year when operated continuously.
- Unit warranty shall be 3 years; the lamp warranty shall be 1 year.
- UV Germicidal Lamps shall be Aprilaire Model 1952, 24" Rooftop Unit or Aprilaire Model 1953, 32" Rooftop Unit.



MODELS 1952 & 1953 TECHNICAL SPECIFICATIONS

- Box Dimensions:** 8" wide x 11.5" high x 4.75" deep
- Lamp Length:** Model 1952=23"; Model 1953=31"
- Electrical Connection:** Field wired (120-277 VAC)
- Electrical Usage:** Model 1952=60 watts
Model 1953=75 watts
- Fuse:** 3 amp slow burn, Aprilaire Part #4476
- Ballast:** High output, auto-adjusting to supply voltage (120-277 VAC)
- Lamp:** Model 1952=Aprilaire Part #94
Model 1953=Aprilaire Part #96
- Ozone Production:** None
- Warranty:** 3 year unit; 1 year lamp

INTERNAL COMPONENTS





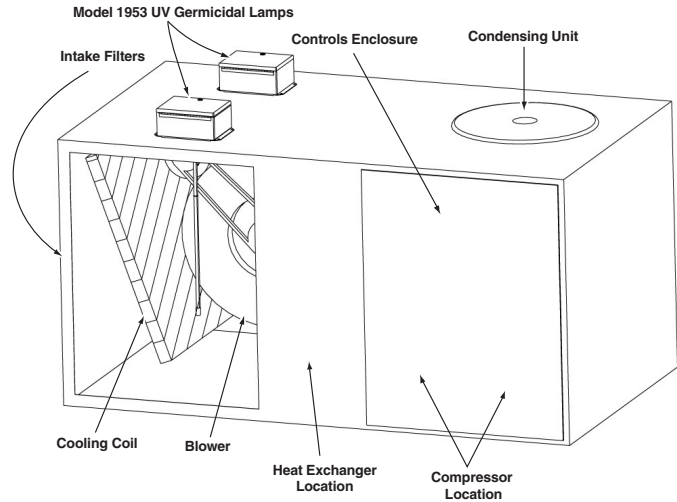
MODEL 1952 & 1953 ROOFTOP UV GERMICIDAL LAMP APPLICATION GUIDELINES

Guidelines for the Required Number of Lamps Based on Coil Area

Coil Area		Model 1952	Model 1953
(sq. in.)	(sq. ft.)	24" Lamp	32" Lamp
750	5.2	1	1
1000	6.9	1	1
1250	8.7	2	1
1500	10.4	2	2
1750	12.2	2	2
2000	13.9	2	2
2250	15.6	3	2
2500	17.4	3	2
2750	19.1	3	3
3000	20.8	3	3
3250	22.6	4	3
3500	24.3	4	3

Approximate Coil Area Coverage

Coil Area	Model 1952	Model 1953
(sq. in.)	24" Lamp	32" Lamp
(sq. in.)	1008	1296
(sq. ft.)	7.0	9.0



Notes:

- The above tables are guidelines only.
- The most important requirement for an effective UV Lamp installation is complete illumination of the coil and drain pan. Install UV Lamps as required to fully illuminate the coil and drain pan.
- The guidelines above are based on the following assumptions:
 - UV Lamps to be installed 3 to 12 inches from coil
 - Coil thickness in the range of 2 to 4 inches

Intensity vs Distance for a typical UV Germicidal Lamp

Distance from UV Lamp inches	Intensity $\mu\text{W}/\text{cm}^2$
2	2,425
4	1,400
6	970
8	740
10	600
12	490
14	400
18	270
24	175
36	90
48	50

As the distance between the microorganism and the UVC lamp increases, the intensity decreases.

Rudolph Nagy Westinghouse Electric. 1964, Industrial Hygiene Journal

Name of Microorganism	Type of Microorganism	UVC Dosage to Kill 99.9% of Listed Organism $\mu\text{W}\cdot\text{sec}/\text{cm}^2$	Time for UVC to Kill 99.9% of Listed Organism at a 12" Distance (seconds)	Distance Organism will Travel at 400 fpm Duct Velocity at 99.9% Kill Time (feet)
Bacillus subtilis	bacteria spores	58,000	119	796
Legionella pneumophillia	bacteria	3,800	8	52
Pseudomonas aeruginosa	bacteria	10,500	22	144
Serratia marcescens	bacteria	6,160	13	84
Staphylococcus epidermidis	bacteria	5,800	12	80
Aspergillus flavus	fungal spores	99,000	204	1358
Aspergillus niger	fungal spores	330,000	679	4527
Mucor racemosus	fungal spores	35,200	72	483
Penicillium digitatum	fungal spores	88,000	181	1207
Penicillium expansum	fungal spores	22,000	45	302
Rhizopus nigricans	fungal spores	220,000	453	3018

At 12 inches from the lamp, more time is needed to kill a significant amount of bacteria and fungal spores than time allows when microorganisms travel through a duct at 400fpm. (See table.) Aspergillus flavus need to be exposed to UV for 204 seconds; however, in that time they will travel 1358 feet within a HVAC system.

