

RUKS ENGINEERING LTD

TECHNICAL SPECIFICATIONS

RUKS COILOTRON ULTRA VIOLET GERMICIDAL IRRADIATION SYSTEM

1. UVGI system shall provide effective destruction and prevention of growth of bacteria, virus, mold, fungi and microbiological species on the cooling coil. Intensity of UVC rays shall envelope the entire surface area of the cooling coil within the high kill rate zone of the UV glow.
2. The UVGI frame shall be installed in close proximity to cooling coil so as to provide effective bactericidal ability on the entire surface area of the cooling coil and large part of the drain pan.
3. Sufficient number of UVGI units shall be provided to cover the entire surface area of the Cooling Coil.
4. Each UVGI unit or fixture shall contain 2 lamps, to ensure UVC rays penetrate deep into the rows of the Cooling Coil to enable bacteria destruction in the inner rows of the Coil. Units or Fixtures with single lamp is not acceptable due to its limited ability to penetrate into the depth of the Cooling Coil.
5. The system shall comprise one or more number of individual units or fixtures, all mounted on factory provided metallic frame complete with vertical support channels. The vertical channels shall be telescopic to cover cooling coil of any height. All necessary materials for frame, top and bottom mounting cups, pre drilled vertical telescopic channels, screws, and hardware shall be factory provided.
6. Each UVGI unit or fixture shall comprise at least two lamps, installed over a properly profiled aluminum reflector. The reflector shall be mirror surface specular reflectivity 86 % . The enclosure shall be not less than 0.04 Inch (1 mm) thick Aluminum. Interconnecting cable between the ballast and lamps shall be covered in UL Listed water proof and fire resistant sleeve to prevent exposure to moisture from Cooling Coil. The interconnect cable and protective sleeve shall be UL Listed. Cables and ballasts shall be fully enclosed in metallic case. No cable shall be exposed.
7. The lamps shall be high output type 425 mA each. Energy output of the lamp measured 3'3" (1M) from the Lamp shall not be less than 144 $\mu\text{w}/\text{cm}^2$. The lamps shall be rated for useful lamp life not less than 9,000 hours.
8. The lamps shall not operate at wave length 180 nM or lower, to ensure no uncontrolled ozone is put out by the lamps.
9. All electrical connections within the fixture shall be factory ready, ending on terminals. All fixtures within an AHU shall be daisy looped at site. All electrical cables shall be UL Listed. It shall be possible to connect all the UV fixtures within an AHU easily and quickly with minimum labor time, opening the terminal box alone, and without opening the fixtures.
10. The Ballast shall be electronic type, fully encapsulated, and confirm to the following;
 - UL Listed (Class P, Type 1, Outdoor)
 - Tested and certified to comply to fire and smoke safety to UL 2043

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- Sound Rated A
 - Compliance to FCC Part 18 (Class A) for EMI and RFI (non consumer limits)
 - ANSI Standard C62.41
11. Each lamp shall be housed individually in a quartz sleeve equivalent to GE 214/219 to ensure high rate of transmission of UV intensity. The quartz sleeve shall cover the entire length of the lamp and lamp holders, with annular air gap of 1/8" (3 mm). The quartz sleeve is essential to ensure multiple beneficial features;
 - a. Prevent carry over moisture from Cooling Coil from contacting lamp surface.
 - b. Prevent dust particles settling on lamp surface
 - c. Ensure lamp surface is maintained at constant temperature and to prevent cooling of lamp surface due to passage of air and moisture over it.
 - d. Contain and hold mercury from spilling into the AHU section and ducts, in the event of breakage of lamp. This is required to ensure compliance to environmental codes.
 - e. Facilitate environmentally safe disposal of broken lamp.
 12. Installation of vertical telescopic support structure in AHU, and mounting of CoiloTron Fixtures to the frame shall be easy and quick using minimum labor hours. All installation materials shall be factory supplied. No material shall be field supplied, except one power input cable for each AHU and inter connect cable between fixtures.
 13. Installation of UV fixtures on vertical telescopic support structures shall allow easy movement of lamp fixtures as needed to cover the entire surface area of Cooling Coil and drain pan with UV radiation.
 14. Final finished UV Fixture shall be Listed or Classified to UL 1995.
 15. Final finished UV Fixture shall be tested and certified by UL to comply to Fire and Smoke Safety to UL 2043.
 16. The Equipment shall be of North American Manufacture, with parts and components from USA and Canada.