

# RUKS ENGINEERING LTD

## TECHNICAL SPECIFICATIONS

### **Ruks GermiTron Ultra Violet Germicidal Irradiation System**

1. The UVGI System shall be designed to achieve Kill Rate not less than 90% per pass, based on specified Kill Rate, or default rate of 3,000  $\mu\text{wsec}/\text{cm}^2$ .
2. The Manufacturer shall provide computerized selection to prove the delivery of designed intensity of Kill Rate based on duct width, height, air velocity on UVGI, length of Contact Ducts, and Lamp Energy intensity. Individual Selection shall be provided for each unit based on above parameters.
3. The system shall be sized to deliver the design kill rate on bacteria, and suitable for installation in any duct height from 6" (150 MM) and over.
4. The Lamps shall be high output type 800 mA each to provide Rated Average Life of 16,000 Hrs. Low intensity Lamp 425 mA is not acceptable.
5. The design intensity of the Lamp shall be based on wavelength 253.7 nM. Lamp shall not perform at wavelength 180 nM or lower, to prevent release of uncontrolled and unmodulated ozone.
6. Each Lamp shall be provided with externally and readily visible indication to show lamp operation or failure, without the need to open access door, or shut down the System.
7. Lamp shall be fitted with uniquely designed Holder and Pins to prevent Lamp replacement with unqualified and unsuitable Lamp.
8. The Lamps shall be installed in Germicidal Quartz Sleeve equivalent to GE Type 241 / 219, rated for high transmission of UVC at 253.7 nM. It shall be possible to replace lamp safe without removing the Quartz Sleeve, or access door, or drawing the UVGI frame out of the duct.
9. The Lamps shall not be exposed to nor have direct contact with air in the duct.
10. The Quartz Sleeve shall also prevent impregnation of dust, particle matter, and moisture from cooling coil or humidifier or condensation, on the Lamp.
11. The Quartz Sleeve shall confine and hold mercury spill for environmentally safe disposal, in the event of breaking of Lamp, and prevent mercury spill into the duct.
12. Ballasts shall be electronic type, rated for greater than 15,000 starts, and conform to Sound Rating A.
13. The Ballasts shall meet FCC Part 18 (Class A) for EMI and RFI non consumer limits, and ANSI Standard C62.41.
14. The Ballast shall be Listed to UL 935.
15. All electrical components such as Ballasts, Disconnect Switch, Fuse, Hour Meter etc shall be housed in remotely mounted 18G CRS powder coated Electrical Box. UL Listed cable harness between Electrical Box and UVGI frame shall be factory provided, with UL Listed error safe Electrical Quick Connector.
16. An UL Listed Hour Meter shall be provided in the remotely mounted Electrical Box to indicate Lamp change.

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17. The Control System shall be provided with Terminal Block, fire rated to UL 94 V0.
18. Installation of UVGI frame in the duct shall be with factory provided Guide Rails and Installation Rails. Cover Plates and all necessary hardware required for installation shall be provided by Manufacturer. No field provided material or hardware shall be required for installation of the system.
19. Terminals shall be provided to interlock UVGI with AHU fan motor, if required.
20. All wetted parts shall be Stainless Steel to render it suitable for use in Hospitals, Health Care Facilities, Pharmaceutical, and Food Processing Plants. All non wetted parts shall be CRS powder coated or Galvanized Steel.
21. The System shall be suitable for operation in air flow 0°F (-18°C) to 140°F (60°C), RH 0 to 100% condensing or non condensing, and with water droplets due to carry over moisture from Cooling Coil.
22. As an option, or if specified, UV Intensity Sensor shall be factory installed on the UVGI frame, together with UV Intensity Monitor. Control wiring between the two shall be factory provided to indicate UV Intensity in percentage of full intensity. The Monitor shall also deliver 0–10 VDC Analog Signal to BMS.
23. The operating voltage shall be 110 to 277 Volts, 1 Ph, 50/60 Hz.
24. **The UVGI Equipment shall be listed to UL 1995, and certified for Smoke and Fire Safety to UL 2043.**
25. All individual Parts and Components shall be UL Listed or Recognized.
26. Appropriate Safety and Caution Notice shall be screen printed on the cover plate of UVGI frame and on the electrical box.
27. The Equipment shall be of North American Manufacture, with parts and components from USA and Canada.