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A DIVISION OF UVDI

REAL SCIENCE FOR HVAC MAINTENANCE

ALTRU···V

V-RAY™ SUS

ULTRAVIOLET LAMP SYSTEM
FAN/COIL, UNIT VENTILATOR
PTAC, AND HEAT PUMPS

SUS: SMALL UNIT SYSTEM

SAFE AND RELIABLE
LOWER OPERATING COSTS
CLEANER AIR

Easily Installed into hard to access systems delivering continuous irradiation for improved heat exchange efficiency while reducing foul odor, drain pain overflows and expensive coil cleanings!

SPECIFICATION

UVC Fixturing – Fixturing consists of a lamp, lamp clasps, UVC resistant wiring harness, power supply and power supply housing.

Lamps – Each lamp contains no more than 5 milligrams of mercury. Lamp life is 9000 hours with no more than a 20% output loss at the end of the lamps life. Lamps are constructed with UVC resistant bases and do not produce ozone. When used for surface irradiation, the lamp selected will be equal to or no less than 90% of the coil width.

Irradiation – Fixtureless lamps are to be installed in sufficient quantity and in such a manner as to provide an equal distribution of UVC energy. When installed, the UVC energy produced will be of the lowest possible reflected and shadowed losses. Note: the applied energy and its distribution shall be verifiable using third party algorithms.

Intensity – The minimal UVC energy striking a surface is sufficient to continuously destroy a monolayer of mold and bacteria in less than six hours when at 55–135°F. The third party modeling shall be available to determine the destruction time for at least four of the most common fan coil surface microbes.

Lamp Clasp – Lamp Clasps may be permanently or magnetically affixed to the irradiated cavity. They are constructed of high memory, plated steel for maximum holding power and corrosion resistance.

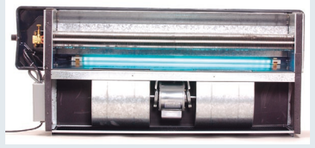
Lamp Wire – Is of sufficient length to facilitate lamp connection to a remotely located ballast. It includes a grommet to facilitate safe passage through sheet metal and into the ballast housing. Lamps are capable of being mounted anywhere in the system and/or as shown on the plans.

Power Supply – Power supplies are of the high efficiency electronic type, matched to the lamp and designed to optimize UVC photon production and reliability. They are UL Listed and labeled for use in air-streams of 55–135°F. They are capable of producing the specified output and organism destruction as listed under Irradiation and Intensity above at no more than 13 Watts of power consumption for each square foot of treated, cross sectional area.

Installation – Fixturing are electrically terminated to within factory supplied ballast housings to meet NEC and local codes. Lamps should be mounted to irradiate the intended surface(s) as well as all of the available line of sight airstream by proper placement and incident angle reflection.

Safety – To protect maintenance personnel, all access panels and doors to the UVC assembly and/or within view of the UVC assembly must include mechanical interlock switche(s) to insure that the UVC assembly will be de-energized when any of these accesses are opened.

1



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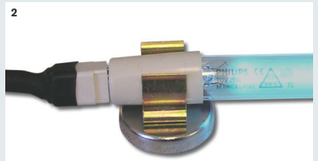
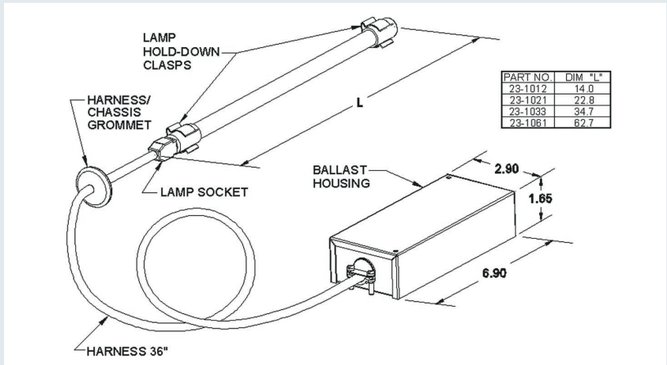


1. V-Ray Bulb Lengths: 61"*, 36", 24" and 12"*.
2. V-Ray Magnetic Clip



PART NO.	DIM "L"
23-1012	14.0
23-1021	22.8
23-1033	34.7
23-1061	62.7

Model No.	Description	Lamp Dim.	Electrical	Weight	P/N
VRSUS 12	V-Ray UVC Fixture	12" *	100–277Vac, 50-60 Hz, 11 Watts	3 lbs.	23-1012
VRSUS 21	V-Ray UVC Fixture	21"	100–277Vac, 50-60 Hz, 15 Watts	3 lbs.	23-1021
VRSUS 33	V-Ray UVC Fixture	33"	100–277Vac, 50-60 Hz, 21 Watts	3 lbs.	23-1033
VRSUS 61	V-Ray UVC Fixture	61" *	100–277Vac, 50-60 Hz, 31 Watts	5 lbs.	23-1061
VR MC	V-Ray UVMagClasp (Pair)	–	–	0.5 lbs.	23-1063

* The V-Ray 12" and 64" units are non-inventory items subject to varying lead times.

VALUABLE BENEFITS FROM THE LEADER IN THE APPLICATION OF UV

- 4-lamp sizes (12", 21", 33" and 61")
- Lowest mercury content available
- UV output regulated to keep levels within ACGIH and NIOSH exposure guidelines (patent pending) thus
  - Extending lamp life and
  - Ensuring safe exposure limits for room occupants or materials
- UL recognized components, ETL Listed
- Ideal for any vertical or horizontal system
- Ease of installation – Simple Lamp Clasps (magnetic Lamp Clasp optional)
- Single point electrical connection
- UVC resistant materials
- Screw terminals for easy field wiring
- Remotely located power source offering ease of installation and mounting options
- Restores air handling unit to near optimal operating capacities
- Can lower energy costs for restored systems
- Reduces costly maintenance and cleaning programs
- Eliminates foul system odors (dirty sock syndrome)
- Has one of the lowest ownership costs in the industry
- Improves indoor air quality by destroying system microbes
- Will not harm building occupants, equipment or furnishings
- One-year warranty on both the fixture and the lamp

V-Ray SUS: 12", 21", 33", 61" Lamp Sizes.

UNLEASH THE POWER OF THE V

All ALTRU-V products are designed to transform HVAC efficiency, maintenance and longevity. By applying real science, the relentless cleaning power of UV and the most affordable products by UVDI, optimal HVAC maintenance solutions can replace outdated mechanical and chemical cleanings that can be both costly and dangerous and shorten equipment life. The results are lower operating costs, safer environments for maintenance personnel and occupants, as well as documented cleaner air.

ALTRU-V's **V-Ray**™ provides unique electronically controlled energy output (patent pending) at registers and grills to meet acceptable levels as recommended by the National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH), yet it delivers the proper amount of energy necessary to control the growth of micro-organisms such as mold and bacteria.

V-RAY

Hg-LAMP CONTAINS MERCURY. Manage in Accord with Disposal Laws. See: www.lamprecycle.org or call 877-PUREUVC

UVDI Ultraviolet Devices, Inc.

ISO Certified 9001:2000

Specifications subject to change without notice.

REAL SCIENCE FOR HVAC MAINTENANCE

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THE VIRTUES OF CLEANER AIR

Small unit systems (SUS) are the perfect breeding ground for mold and bacteria. Each time the system runs, these contaminants, airborne viruses and foul odors are circulated throughout the environment. Research has shown that building occupants exposed to such contaminants can develop health issues, including sinus congestion and headaches, allergy, asthma, upper respiratory ailments, along with colds and flu. The V-Ray continuously destroys contaminants, protecting both occupants and technicians.

ALTRU-V applies real science and the relentless cleaning power of ultraviolet light for optimal HVAC maintenance solutions.

THE POWER OF THE V MEANS SAVING VALUABLE TIME AND MONEY

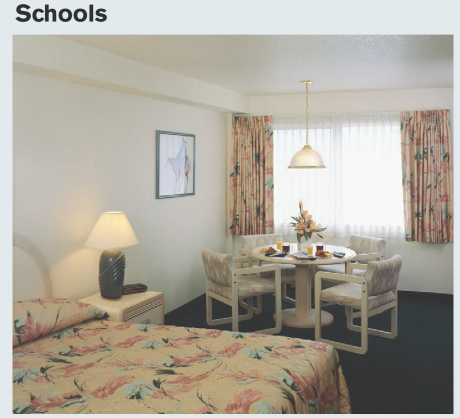
The **V-Ray** has become one of the most cost-effective HVAC maintenance tools. A typical installation of the **V-Ray** pays for itself in short order through maintenance and energy savings. When installed, the lamps destroy typical HVAC system contaminants including molds and bacteria (sources of poor IAQ, allergy triggers, and moldy odor) and restore the system to "near new" performance characteristics. Clean systems can deliver savings through improved heat exchange efficiency, airflow and long equipment life. The **V-Ray** also produces positive occupant and visitor responses. Among UVC products by ALTRU-V, **V-Ray** provides one of the lowest lifecycle costs, while offering lamps with the highest output retention and lowest mercury content in the industry.

THE V ALSO STANDS FOR SAFETY, COMFORT AND RELIABILITY

V-Ray products are specifically designed for longevity, occupant safety, installer/service personnel safety, and reliable operation. UVC energy exposure is an important issue when designing products for small unit systems. The **V-Ray** product line utilizes UL recognized components and is ETL Listed for specific use within HVAC units of all shapes and sizes. **V-Ray** is manufactured in an ISO9001:2000 certified plant for guaranteed quality and reliability. Unlike other cleaning regimens that can expose maintenance personnel and building occupants to dangerous chemicals or toxic fumes, the **V-Ray** offers a passive, non-chemical approach to continuous HVAC system maintenance.

Healthcare

Schools

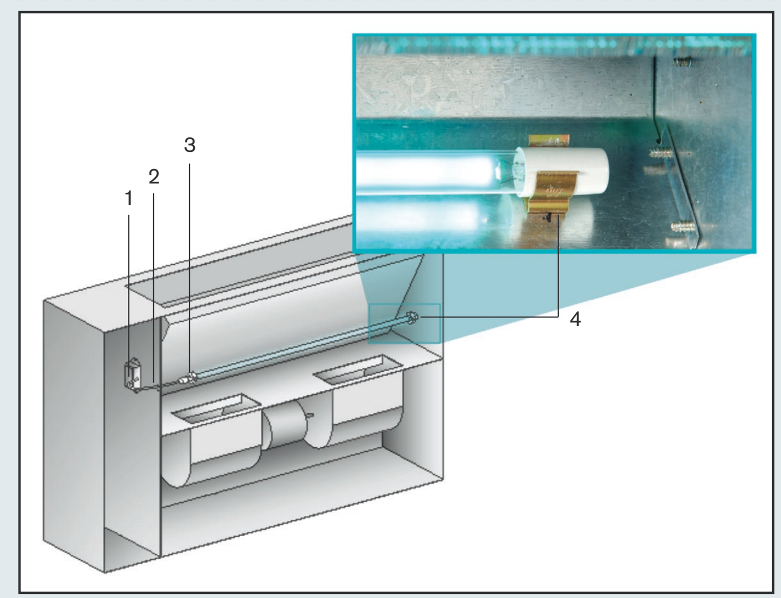


Hotels

Air Quality Airborne particles, known as bioaerosols, account for 60–80% of indoor air quality problems. According to the World Health Organization, these contaminants account for a substantial portion of absences from school and work, and can lead to lower productivity.

APPLICATION

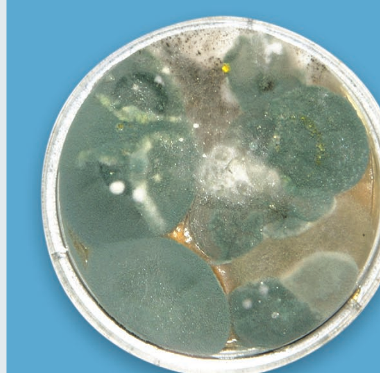
The **V-Ray**'s design allows for ease of installation in almost any system size from 12" to 64" in width with power requirements from 100Vac to 277Vac. **V-Ray** fixtures can be mounted in any orientation to properly irradiate the target surface. The **V-Ray** can be installed to irradiate coils and drain pans where they degrade organic and microbial build-up that causes foul odors and clogged pan drains, causing overflow of water that can cause significant damage to surrounding material (e.g., ceiling tiles, carpet, etc.). The patent pending system can be installed using a permanently fixed lamp clip or via a patent pending magnetic lamp clip design. The **V-Ray** components are UL listed and the system is listed with ETL.



1. Mount Ballast Housing, Hard-wire
2. Drill Hole for Lamp Power Cable (32")
3. Mount Lamp Clasps
4. Snap UV Lamp into Clasp

(Note: Ballast housing may also be installed in the airstream if desired)

REAL SCIENCE FROM THE FAMILY BEHIND UV



Coil Surface Sample Before Installing V-Ray SUS

Coil Surface Sample After Installing V-Ray SUS