

DESIGNED FOR RETROFITTING
EXISTING COMMERCIAL HVAC
SYSTEMS

PROVEN AND UNDERUTILIZED
TECHNOLOGY TO KILL NASTY
PARTICLES THAT SHOULD NOT
BE SHARED



HVAC - THE LUNGS OF THE BUILDING

- For occupants, cleaner air means improved energy, improved mood, better immune system
- Overall better human health
- Reduction in the spread of infections
- 2-20% increase in HVAC efficiency and 50%+ reduced coil maintenance
- Simple installation kits



CLEAN THE AIR WE BREATHE
IMPROVE QUALITY OF LIFE

CLEAN COILS & CONDENSATE PAN

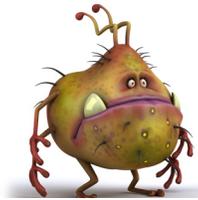
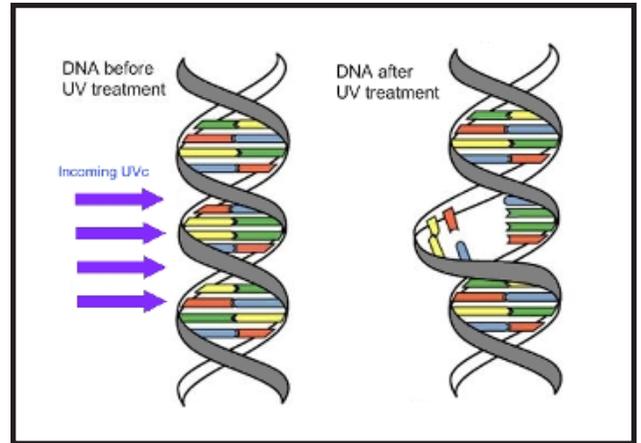
REDUCE MAINTENANCE
INCREASE EFFECIENCY

HOW THE TECHNOLOGY WORKS

Ultraviolet Germicidal Irradiation has been used for over 200 years in medical applications, winning a Nobel Prize for its treatment of Tuberculosis in 1903. Today, with the ongoing resistance to antibiotics, its use in medical is widespread. HVAC systems began adopting the technology in 1990's, mostly residential. Today, facilities are quickly adopting it for commercial application.

FEATURES

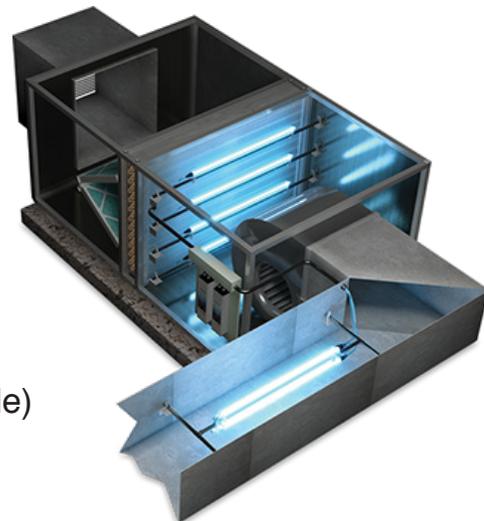
- UVC light (254-280nm) penetrates the cell walls of micro-organisms and disrupts the structure of their DNA.
- The loss of the ability to grow or multiply is classified as cellular death, and renders them harmless
- With no chemicals or filtration materials, UV disinfection is 100% clean.



DESTROYS BACTERIA, FUNGI, VIRUSES, CYSTS AND MOLD

OUR PRODUCTS

- Tubular retrofit mount system for in-duct
- Supply room application
- Magnet attached brackets
- No drilling needed
- On/Off switch with fuse
- IP54 ballast for outdoor mounting
- Teflon coated shatterproof lamps
- 120-277VAC input (480V step-downs available)
- 18,000 rated life of lamps (2-year warranty)
- 32" and 46" lamps
- Up to two lamps per ballast
- (Time) x (Intensity) = Kill Rate



Contact HiLumz USA: 678-867-9200
germzap@HiLumzUSA.com

PRODUCT SELECTION GUIDE

KITS:

- **UVC04-32-S** (Single, 32" lamp with two-year lamp life)
- **UVC04-32-D** (Dual, 32" lamp with two-year lamp life)
- **UVC04-46-S** (Single, 46" lamp with two-year lamp life)
- **UVC04-46-D** (Dual, 46" lamp with two-year lamp life)

KITS INCLUDE:

- BALLAST
- WIRING
- MOUNTING HARDWARE

GUIDELINES FOR 4X CYCLE AIR CLEAN

- Specified for 99.9% kill rate in 4 air passes
- Typical air cycle is 8 to 18 passes per day
- Increase effectiveness with increased light density

COIL SIZE, WIDTH

	32"	40"	48"	56"	62"	72"
24"	32-S	32-S	46-S	46-S	46-S	46-S
32"	32-S	32-S	46-S	46-S	46-S	46-S
40"	32-S	32-S	46-S	46-S	46-S	46-S
56"	32-D	32-D	46-D	46-D	46-D	46-D
62"	32-D	32-D	46-D	46-D	(2) 46-D	(2) 46-D
72"	32-D	32-D	46-D	46-D	(2) 46-D	(2) 46-D

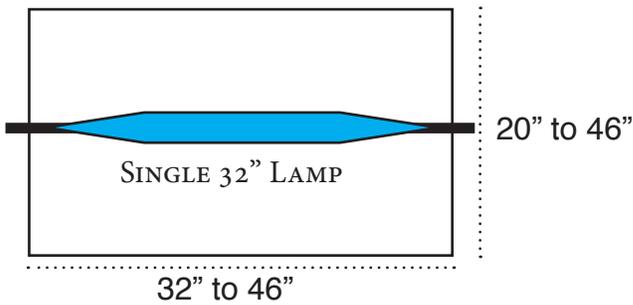
COIL SIZE, HEIGHT

- Chart based on general guidelines
- Recommendation based on standard airflow rates at coil (~500 feet per minute)
- HiLumz provides detailed proposal support and project specific layout/installation guidelines
- 18" & 60" lamps available special order

GENERAL HVAC SIZE APPLICATIONS

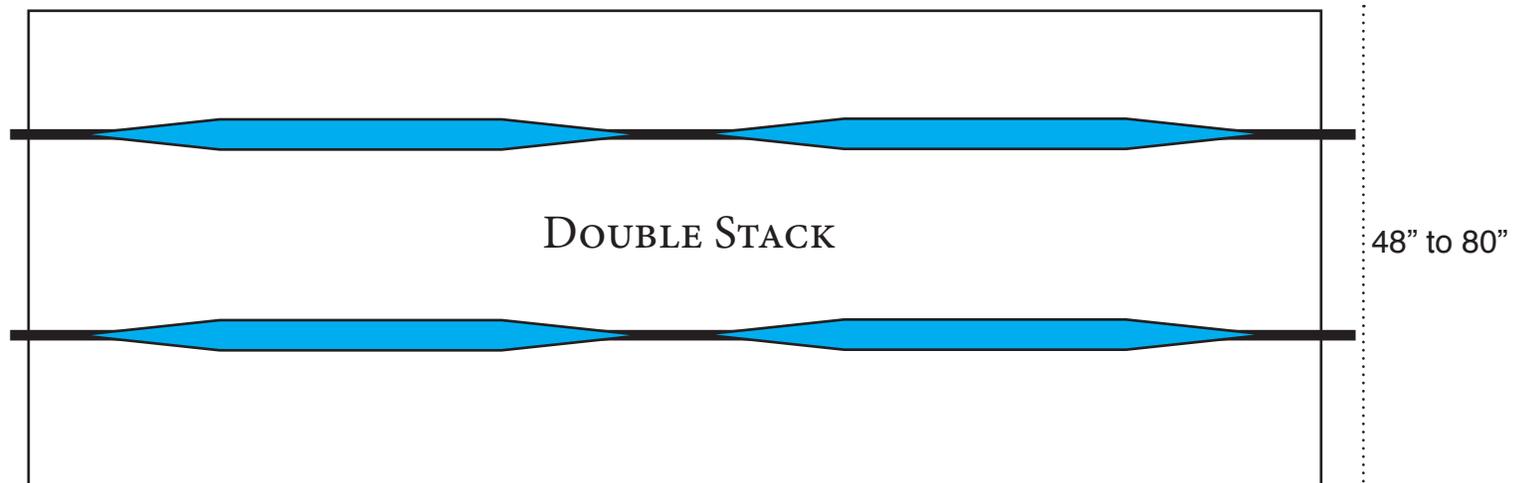
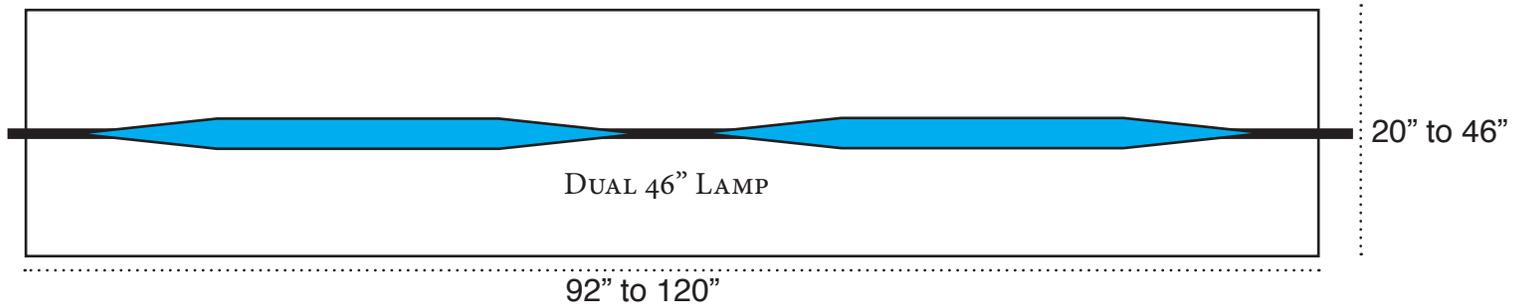
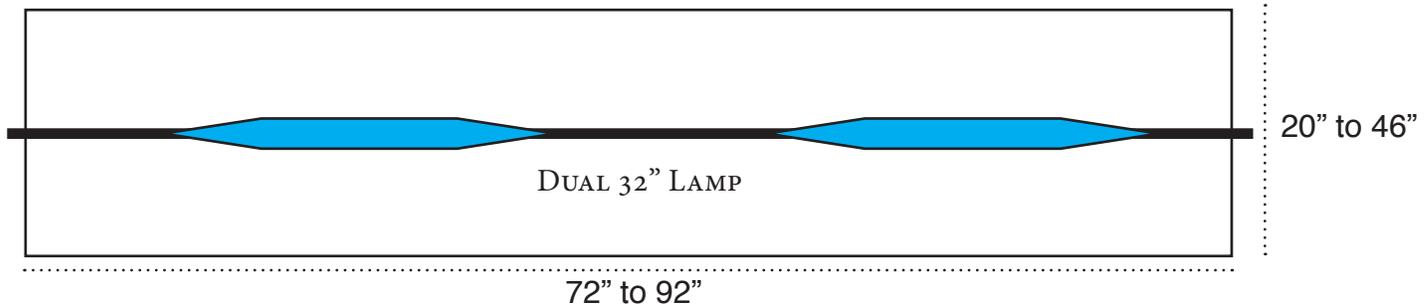
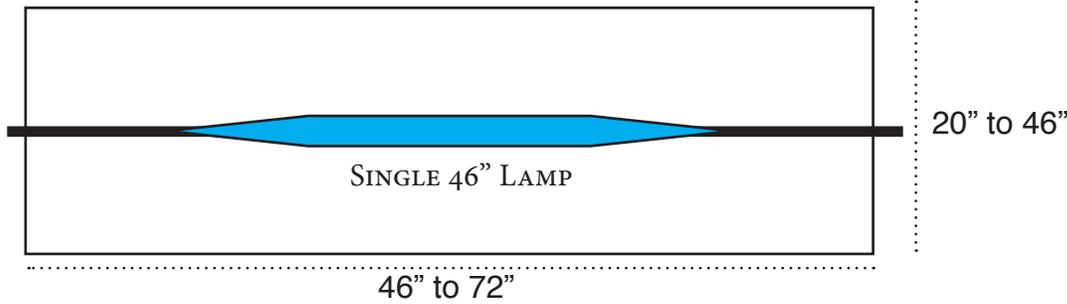
6-10 Ton	(1) 232-D
10-12 Ton	(1) 232D or (1) 246S
12-15 Ton	(1) 246D
15-20 Ton	(1) 246D
20-30 Ton	(1 or 2) 246D
30-40 Ton	(2) 246D
40-50 Ton	(2 or 3) 246D

COMMON LAMP LAYOUT



COIL SIZE (length x height)

- Each 32" lamp provides coverage for up to 2,100 square inches
- Each 46" lamp provides coverage for up to 3,300 square inches
- These are suggestions: Increasing density will increase kill rate intensity



COMMON ACCESSORIES

CABLE EXTENDER



BACK LIGHT GUARD



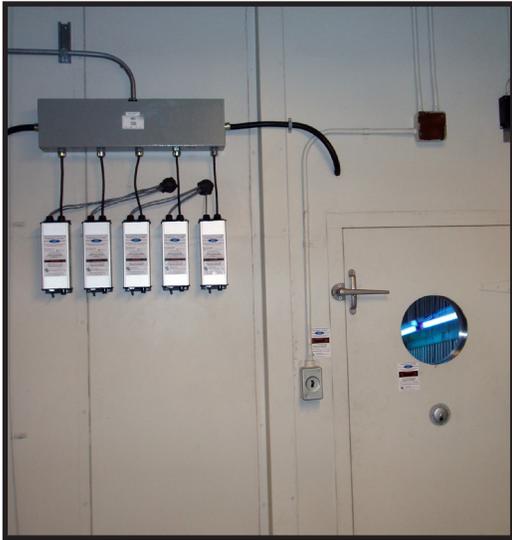
RACK SYSTEM



DOOR INTERLOCK
SAFETY SWITCH



APPLICATION IMAGES



SEEMS SIMPLE? IT IS!

Contact HiLumz USA: 770-289-0010
hilumzUSA.com

FAQs

HOW DO WE QUANTIFY COST SAVINGS?

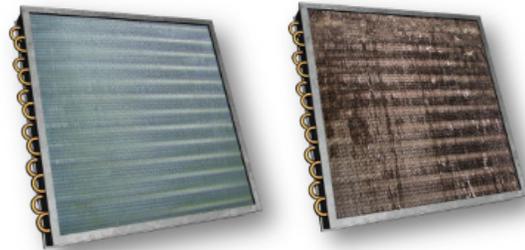
Hard dollar measured savings will be derived from reduction in coil cleaning and the associated increase in HVAC efficiency as a result of reduced coil grim.

UV is a great alternative to existing cleaning methods.

1. Pressure washing which is labor intensive and tends to push debris to the center coils.
2. Chemicals are often dangerous with little consideration for the pollution into the air we breath.
3. Neglect: which leads to massive efficiency loss.



Fouling Thickness	Measured Efficiency Loss
0.15mm	16%
0.30mm	20%
0.61mm	27%
0.91mm	33%
1.63mm	50%



SHINY COILS IN 30 DAYS

University of Pennsylvania study in a variety of geographies demonstrated a 15% pressure drop reduction using UVC coil cleaning over 30 days

*According to the U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE), major utilities, and other experts, dirty condenser and evaporator coils can significantly increase HVAC energy usage and associated utility costs. The U.S. DOE says that **“a dirty condenser coil can increase compressor energy consumption by 30 percent.”** A dirty evaporator coil decreases airflow, resulting in reduced heat transfer and a degradation of the dehumidification process. These can cause overall air quality to decline and systems to fail, and decrease the life expectancy of motors due to increased heat while running.*

FAQs, CONT...

IS IT SAFE?

Yes. There are generally three risk factors associated with UVC lighting.

1. The mercury in the lamps can be dangerous to human exposure or an open wound.
 - Our low pressure mercury vapor lamps contain 10% of the mercury of a normal fluorescent lamp, and, we take the extra precaution of using a Teflon coating so should a lamp break, all mercury will be contained. Our lamps are safe, even to damage.
2. UVC exposure causes skin and eye irritation
 - We do not recommend direct exposure and we offer a door interlock to the HVAC system to ensure workers cannot enter while the lighting is on.
3. Light below 180nm can causes Ozone pollution.
 - We ensure no output at these levels.

ARE THESE SYSTEMS WARRANTIED?

Yes. The lamps are offered with a two year warranty while the hardware and ballasts are offered with a 10-year warranty. HiLumz is in Alpharetta, GA. We're here to ensure you achieve target benefits.

ARE THERE INDEPENDENT STUDIES THAT PROVE IT WORKS?

Yes. A lot of them. UV lighting in residential is very common with endless installations in the USA and associated case studies. This technology is also used very commonly in surgery rooms, commercial ice machines, and hundreds other high contamination areas.

Adoption in commercial HVAC will accelerate in the coming years.



TECHNOLOGY VALIDATED BY:

