SGUVGI - 3000 In-Duct Single Rack Unit

% Percentage Kill

Microorganisms	UV Dose µW.sec/cm2	0.20 m3/s	0.30 m3/s	0.40 m3/s	0.50 m3/s	0.60 m3/s	0.70 m3/s	0.80 m3/s	0.90 m3/s	1.00 m3/s
Pseudomonas aeruginosa (lab)	3,900 (9)					99.9%				
Avian Flu (Influenza A)	3,900 (16)					99.9%				
Campylobacter jejuni	4,000 (2)					99.9%				
Salmonella typhi	4,800 (2)					99.9%				
Legionella pneumophilia	5,500 (1,2)					99.9%				
Staphylococcus aureus	5,800 (2, 5,6,8,11)					99.9%				
Vibrio comma (cholera)	6,500 (9)					99.9%				
MRSA	6600 (13)					99.9%				
Influenza	6,600 (3,4,5,6,9)					99.9%				
E-coli	6,600 (1,2)					99.9%				
Klebsiella terrigena	6,700 (2)					99.9%				
Coronavirus (SARS)	7,400 (15)					99.9%		98%	95%	94%-90%
Streptococcus faecalis	8,000 (2)					99.9%		98%	95%	94%-90%
Hepatitis A	8,000 (2)					99.9%		98%	95%	94%-90%
Agrobacterium	8500 (15)					99.9%		98%	95%	94%-90%
Bacillus anthracis	8,700 (15)					99.9%		98%	95%	94%-90%
Clostridium Difficile	10,000 (14)				99.9%			98%	95%	94%-90%
Mycobacterium Tuberculosis	10,000 (3,5,6,9,10)				99.9%			98%	95%	94%-90%
Pseudomonas aeruginosa	10,500 (3,4,5,6)			99.9%				98%-95%	94%	90%
Herpes simplex	11,000 (17)			99.9%			98%	95%		90%
Bacillus subtillis	11,000 (5,6,8)			99.9%			98%	95%		90%
Clostridium Botulinum	11200 (15)			99.9%			98%	95%		90%
Stenotrophomonas maltophilia	12,000 (7)		99.9%			98%		95%	90%	85%
Salmonella anatum	12,000 (2)		99.9%			98%		95%	90%	85%
Klebsiella pneumoniae	15,000 (2)	99.9%		98%			95%	90%	85%	75%
Micrococcus sphaeroides	15,400 (3,5)	99.9%		98%		95%	94%	90%	85%	75%
Rotavirus	20,000 (1)	98%			95%	94%	90%	85%	75%	60%
Bacillus subtilis spores	22,000 (2,4,5,6,8)	98%			95%	94%-90%	89%	80%	70%	55%
Clostridium Tetani	23,100 (15)	98%		95%	94%	90%	89%	80%	70%	55%
B. anthracis Sterne	27500 (12)	98%-95%	94%		90%	89%-80%	79%			50%

Air Volume

Performance tests carried out in partnership with the ***Pathogen Control Engineering Research Group*** at the School of Civil Engineering - ***University of Leeds***

References:
1. Hijnen et. al "Inactivation credit of UV radiation for viruses, bacteria and protozoan" 2006
2. "UV dose required to achieve incremental log inactivation of bacteria, protozoa and Viruses" IUVA March 2006
3. "The Use of Ultraviolet Light for Microbial Control", Ultrapure Water, April 1989.
4. William V. Collentro, "Treatment of Water with Ultraviolet Light - Part I", Ultrapure Water, July/August 1986.
5. James E. Cruver, Ph.D., "Spotlight on Ultraviolet Disinfection", Water Technology, June 1984.
6. Dr. Robert W. Legan, "Alternative Disinfection Methods - A Comparison of UV and Ozone", Industrial Water Engineering, March/April 1982.
7.G. Cairns, et. al. "Susceptibility of Burkholderia cepacia and other pathogens of importance in cystic Fbrosis to u.v. light", Letters in Applied Microbiology, 2001.
8. Rudolph Nagy, Research Report BL-R-6-1059-3023-1, Westinghouse Electric Corporation.
9. Myron Lupal, "UV Offers Reliable Disinfection", Water Conditioning & Purification, November 1993.
10. John Treij, "Ultraviolet Technology", Water Conditioning & Purification, December 1995.
11. Bak Srikanth, "The Basic Benefits of Ultraviolet Technology", Water Conditioning & Purification, December 1995.
12.Nicholson Waye L., et. al. "UV Resistance of bacilus anthracis spores revisited: validation of bacilus subtilis spore as UV Surrogate for spores of B. anthracis Sterne", Applied and Environmental Microbiology, Feb 2003
13. University of Leeds, "S. Aureus is assumed to have the same strain", personal communication, March 2008
14. Unpublished work by the University of Leeds, personal communication, September 2008
15. NQ Industries Inc. UV dosage necessary for complete destruction, 1997.
16. Abraham G. 1979. Virology 97: 177-182.
17. Henderson E., Heston L., Grogan E., Miller G. 1978. Virol. 25: 51-59.

UNIVERSITY OF LEEDS

Springfield Group PRODUCTS