RPAMS CCV (Ultraviolet-C) UVC Light Systems

A force multiplier in the fight to protect against COVID-19

EPA EST. NO. 97050-OR-1. RESTRICTED USE PESTICIDE/GERMICIDAL UVC

RP CCV UVC LIGHT DOSAGE CHART

When calculating the changes in CFUs after disinfection, microbiologists express the performance as a percentage reduction in terms of a reduction factor and typically in factors of 10 using a logarithmic (log) reduction scale – a log reduction factor (LRV).

Log reduction is a mathematical term that is used to express the relative number of living microbes that are eliminated by disinfection.

Log Reduction = Log10 (N0 /N)

Where:

N0 = Colony forming units of the microorganisms BEFORE exposure to UV light

N = Colony forming units of the microorganisms AFTER exposure to UV light

For example, a 1 log reduction corresponds to inactivating 90 percent of a target microbe with the microbe count being reduced by a factor of 10. Thus, a 2 log reduction will see a 99 percent reduction, or microbe reduction by a factor of 100, and so on.

Table 1 (below) shows the chart of log reduction:

LOG REDUCTION	REDUCTION FACTOR	PERCENT REDUCED
1	10	90%
2	100	99%
3	1,000	99.9%
4	10,000	99.99%
5	100,000	99.999%
6	1,000,000	99.9999%

The RPAMS CCV UVC germicidal systems achieve the desired log reduction factor by ensuring that the process delivers a microbe-specific UVC dose based on peer reviewed efficacy studies.

Every pathogen has a unique spectral sensitivity "fingerprint." By using 254nm UVC wavelengths and selected doses of energy, the amount of supplemental disinfection (i.e. LRV of the pathogen) can be established. Dosage is determined based on the intensity of the UVC energy and the exposure time at a specific wavelength.

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Germicidal lamps provide effective augmented disinfection against various microorganisms. A small cross-section is shown below.

ORGANISM	ALTERNATE NAME	TYPE	DISEASE	DOSE*	μWSec/cm² Distance		
					4-5 in	6-8 in	12 in
Corynebacterium diptheriae	C. diphtheriae	Bacteria	Diptheria	6,500	2 sec	3 sec	6 sec
Legionella pneumophila	L. pneumophila	Bacteria	Legionnaire's Disease	12,300	4 sec	6 sec	12 sec
Mycobacterium tuberculosis	M. tuberculosis	Bacteria	Tuberculosis (TB)	10,000	3 sec	5 sec	10 sec
Pseudomonas aeruginosa	P. aeruginosa	Bacteria		3,900	2 sec	2 sec	5 sec
Serratia Marcescens	S. marcescens	Bacteria		6,160	2 sec	3 sec	6 sec
Staphylococcus aureus	S. aureus	Bacteria		6,600	2 sec	3 sec	6 sec
Staphylococcus epidermidis	S. epidermidis	Bacteria		5,800	2 sec	3 sec	5 sec
Adeno Virus Type III		Virus		4,500	2 sec	2 sec	5 sec
Coxsackie A2		Virus		6,300	2 sec	3 sec	6 sec
Influenza		Virus	Flu	6,300	2 sec	3 sec	6 sec

IF YOU HAVE QUESTIONS OR NEED INFORMATION PLEASE CALL

Jim Baynes 503-348-7950, Terry Wilmeth 971-237-3217 or CustomerService@RPAMS.com

It is understood and expected that all users of the RP CCV series UVC devices produced by RP Advanced Mobile Systems (RPAMS), LLC must comply with all safety requirements to prevent UVC exposure. **RPAMS, LLC** continues to effort the website availability of scientific and government information related to UVC so that End-users are aware and able to employ safe UVC device administrative controls. The technical data contained in RPAMS documents are based solely on data explicitly published by the governing authority or agency such as the National Institute of Health (NIH), Center for Disease Control (CDC), Environmental Protection Agency (EPA), NIOSH, etc. **RPAMS, LLC** disclaims any and all responsibility for incorrect, inaccurate, or incomplete information provided by these and other related entities regarding UV (Ultraviolet) light. ***In case of any conflict between this document and any updated mandatory UV (UVC) requirements issued by these and related authorities, the Regulatory Authority shall prevail.***

RPAMS maintains compliance to 40 CFR 156.10(a)(5) and FIFRA section 25(c)(3) as applicable to germicidal devices.

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