



DELREN HVAC, INC.

(856) 541-1776

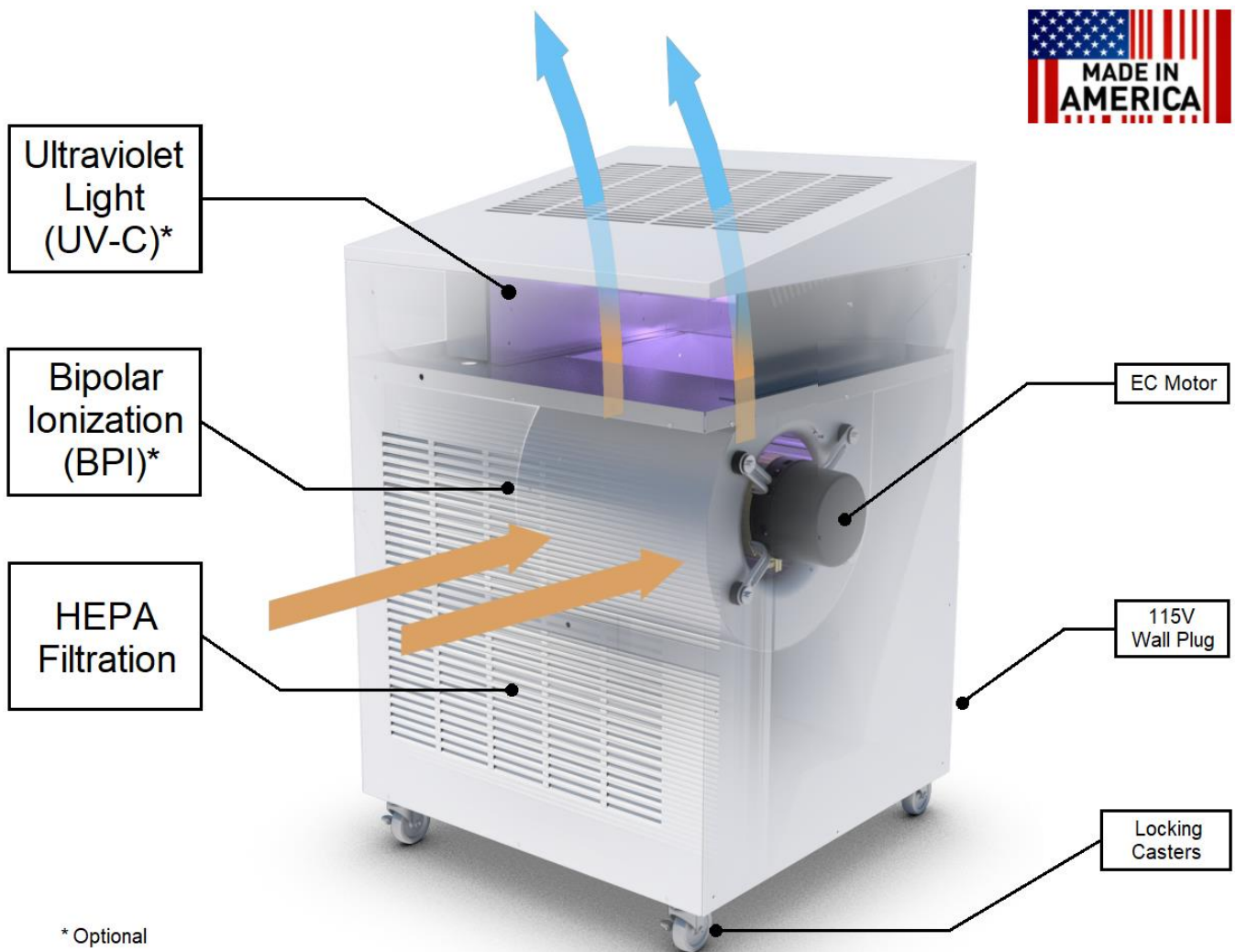
www.delren.com

141 Shreve Avenue
Barrington, NJ 08007

31 Hoffman Road
Monroe Township, NJ 08831

PRICE

Room Air Purifier (RAP)



Standard lead time: 3-4 weeks



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		Treatable Volume (ft ³)					
CFM	600	Additional Air Changes per Hour (ACH) (1/hr)					
		2	4	6	8	10	12
Number of Units	1	18,000	9,000	6,000	4,500	3,600	3,000
	2	36,000	18,000	12,000	9,000	7,200	6,000
	4	72,000	36,000	24,000	18,000	14,400	12,000
	6	108,000	54,000	36,000	27,000	21,600	18,000
	8	144,000	72,000	48,000	36,000	28,800	24,000
	10	180,000	90,000	60,000	45,000	36,000	30,000
	12	216,000	108,000	72,000	54,000	43,200	36,000

Applying the RAP

CDC: HEPA-filtered air = ACH.¹
Most commercial spaces have some level of outside air already supplied to them per code. The RAP is rated for up to 600 CFM and can supplement additional equivalent ACHs.

HEPA filters removes particulate of 0.3-micron diameter at 99.97% effectiveness² (greater effectiveness for particulate both larger and smaller.³)

Bipolar Ionization (BPI)	Ultraviolet Irradiation (UV-C)
<p>Neutralization: Oxygen ions combine with hydrogen ions to form hydroxyl radicals which cluster on the virus. As these radicals build up, they bind with hydrogen atoms from the virus and form water molecules. This transference of hydrogen alters the virus' structure which disables its ability to bind to human cells, rendering it neutralized.⁴</p> <p>Agglomeration: Positively charged particles are attracted to negatively charged particles, causing them to clump together. Once the agglomerated particle's density is high enough, it will fall out of the airstream. Once its volume is high enough, it will be caught by the HEPA filter.</p> 	<p>Sterilization: Over the UV-C range ($\lambda = 200$ to 280 nm), a detrimental effect on microbial cells occurs because the intercellular components of microbes (e.g., RNA, DNA, and proteins) can absorb UV-C photons. Absorbed UV-C photons cause critical damage to the genomic system of microorganisms, preventing them from replicating and surviving.⁵</p> 

¹ CDC <https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/air.html>

² NIH <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4587002/>

³ Harvard <https://journals.sagepub.com/doi/pdf/10.1177/109135059800300111>

⁴ Johnson Controls <https://youtu.be/-L5AvNeYYY?t=397>

⁵ NIH <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7571309/>