

PLASMA GUARD™ MARINE

Product Catalog



PlasmaGuard, LLC™ Overview

All of PlasmaGuard's™ technologies utilize cold plasma, which produces an electrostatic charge, an agglomeration, and a non-thermal flameless plasma. This results in the independently proven destruction of viruses, bacteria and pathogens. This is the safest and best air purification method available for use throughout all industries and buildings. Our system connects to any existing ducting system before or after the main HVAC unit. PlasmaGuard's™ technologies has the ability

to provide excellent destruction efficiency with an extremely small relative surface area to the amount of air flow. All of these benefits are regardless of the amount of inlet particulate load. These units efficiently purify everything from arenas to homes and everything in between. PlasmaGuard's™ industries pride themselves in overcoming any installation difficulties. Our units are UL tested and certified.

We Specialize in Pure Air Technology

PlasmaGuard MARINE™ is aware that the most polluted air exists in and around all ocean going vessels from the use of diesel fuels and heavy fuel oils. This makes the technology requirements to purify the air substantially more difficult and necessary. PlasmaGuard MARINE™ specializes in Micro-WESP™ technology that is easily adaptable into existing ventilation and exhaust stack systems. All ocean going vessels can now purify the internal air for the crew and passengers as well as all exhaust streams to 99.9% efficiency with extremely low maintenance and power costs. All exhaust streams will meet and/or exceed all maritime pollution regulations today and well into the future.



About PlasmaGuard Marine™



PlasmaGuard Marine specializes in treating air pollution both inside marine vessels as well as the harmful emissions created from large scale diesel engines, garbage incinerators and auxiliary generators. The combination of our three proprietary technologies is the best and complete solution for combating marine air pollution.

PlasmaGuard Marine™ systems specialize in Micro-WESP™ technology that's easily adaptable into marine vessels and cruise ships. Ocean liners (cruise ships), cargo vessels, bulk carriers, tankers and small vessels (over 90,000 ships sailing today) can now clean the air internally for the crew and passengers, as well as externally to meet and exceed all maritime pollution regulations now and in the distant future.

Our system connects directly into the ship exhaust stack systems. They are Non-Thermal Cold Plasma Wet Electrostatic Precipitator systems that eliminate all harmful pollutants from entering into our atmosphere. These systems are extremely efficient in eliminating pollution and can collect and clean matter as small as 0.1 microns in size. To give you an idea of how small that is, one average hair is 100-150 microns in size and a dust mite is approximately 5 microns in size.



PlasmaGuard PRO™

The single pass air purifier with 99.9% destruction of pathogens and contaminants.



PlasmaGuard EXP™

Monitors and controls indoor air quality for a happier, healthier environment.



PlasmaGuard STAX™

Permanent solution to large scale stack emissions with 100% air quality compliance.

PlasmaGuard PRO™

THE ONLY TECHNOLOGY THAT CAPTURES AND DESTROYS 99.9% ON THE FIRST PASS.

The PlasmaGuard PRO™ system is a Non-Thermal Plasma Pathogen Elimination System ideal for high traffic facilities. It works by destroying all living pathogens with high voltage, using very little electrical energy, thus eliminating the problem. The system then captures and removes them through its self-cleaning design.

In the Marine industry, the PlasmaGuard PRO™ system is ideal for treating the indoor air within marine vessels, creating a perfect clean environment for all passengers. Each PlasmaGuard PRO™ unit comes with a 25 year warranty.



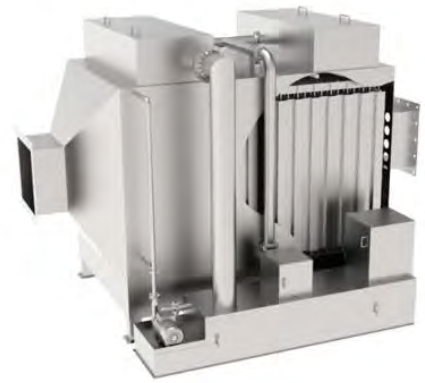
WHAT DOES PLASMAGUARD PRO™ DESTROY?

- ALL VIRUSES
- BACTERIA
- FUNGI / MOLDS
- ALLERGENS
- ASTHMA TRIGGERS
- DUST
- VOC's
- HEAVY METALS
- SO2, SO3, SOX
- DIOXINS
- FURANS
- ODORS



PLASMAGUARD PRO™

SPECIFICATIONS AND STANDARD SIZES



Standard Sizes

Model	AAC-8	AAC-18	AAC-32	AAC-50	AAC-59	AAC-72	AAC-98	Custom
AIR FLOW (ACFM)	2,500	5,000	10,000	14,000	17,000	20,000	30,000	30,000 +
Unit in Tons (or Equivilant)	6	13	25	35	40	50	75	75 +
Unit in Square Feet	3,000	6,750	13,000	15,750	20,750	26,000	36,500	37,000 +
Unit Dimensions	Sized to Fit	Sized to Fit	Sized to Fit	Sized to Fit	Sized to Fit	Sized to Fit	Sized to Fit	Sized to Fit
INLET/OUTLET, F x G	18"x30"	32"x36"	48"x48"	60"x60"	60"x72"	72"x72"	84"x84"	Custom
CURRENT (MA)	50	100	200	250	300	350	500	Custom
VOLTAGE (KV)	60	60	60	60	60	60	60	Custom
PLASMA POWER (KW)	3	6	12	15	18	21	30	Custom
WASH WATER (GPM)	12	24	45	70	82	100	150	Custom
TOTAL CONNECTED POWER (KW)	8	11	17	20	23	26	35	Custom
OPERATING POWER (KW)	1	2	4	5.6	6.8	8	12	Custom

SPECIFICATION	PG-PRO
Supply Voltage	60 KV
Max Operating Pressure	20 IN W.C.
Line Voltage	All Standards Supported
Capacity	2,500 - 30,000 + ACFM
Capacity in square feet	3,000+
Central Duct-Mounted Installation	Yes
Method of Purification	Non-Thermal Cold Plasma WESP
Eliminates Indoor Ozone	Yes
Opacity Reduction	99.9%
Heavy Metal, Mercury, Dioxins/Furans Removal	99.9%
SO2 Removal	99.9%
Back Pressure	0.5 in W.C.
Physical Dimensions	6'x6'x15'
Design	Vertical

Financing options are available

PLASMAGUARD PRO™ SPECIFICATIONS



SPECIFICATION	PG-EXP
Supply Voltage	100-240 VAC
Energy to operate	<10 Watts
Secondary Voltage (Ionization)	4K-5K V
Capacity - Up to 3000 CFM	300-1500 CFM (UL Test); >3000 CFM Capability
Capacity - Covers 2,000+ Square Feet	Yes
Central Duct-Mounted Installation	Yes
Method of Purification	Bi-Polar Cold Plasma Air Ionization
Eliminates Indoor Ozone	Yes - Patented "Ozone Depletion Mode"
Ozone Filtration	Yes - Patented Ozone Filter
Works on Demand from actual IAQ sensor readings	Yes
User Adjustable Clean Air Settings	Yes
3rd Party Lab Validation on reduction of viruses, bacteria, pollens, etc	Yes
Visual Display of Air Quality by Color Code	Yes
Visual Display of Air Quality by Numeric Value	Yes
Pairs with IAQ Sensor	Yes
Built-in Ozone Sensor	Yes
Built-in Air Particulate Sensor	Yes
Real-Time Feedback	Yes
Cloud-Based IoT Connection Capability	Yes
Does System have ability to gather other sensor data of interest	Yes
Can System directly integrate with Home Automation technology	Yes
Can System directly integrate with Smart Phones	Yes
Can System Status be sent to Owner / Operator by text or email	Yes
Can System integrate with Smart Filter Sensor technology	Yes
UL Listed Device	Yes for UL 867, UL 2043
UL Tested Ozone Output below CARB Standards of 50ppb	Yes (<10 ppb max)
FCC Compliance	Yes

Financing options are available

PlasmaGuard EXP™

INTELLIGENT, RESPONSIVE AIR QUALITY MANAGEMENT FOR YOUR SHIP

The PlasmaGuard EXP™ system, powered by the CleanAir-EXP, is an air and surface purification solution that cleans indoor air and surfaces of viruses, allergens, pathogens, odors, smoke, mold, ozone, and harmful chemicals. It deactivates and destroys the structure of viruses and bacteria, including coronavirus surrogates, E. coli, norovirus, and more.

Using the air flow from your existing HVAC fan, the PlasmaGuard EXP™ Purification Unit bombards the air with millions of air-cleaning oxygen ions, removing particulates, eliminating germs, and breaking down VOCs. The result is that every vent in your home or small office becomes its own air purification unit, treating indoor airborne pollution problems at the source. The Purification Unit uses the power of nature to **clean, refresh, and energize** the air you breathe.



PLASMAGUARD EXP™ MANUFACTURER WARRANTY

The manufacturer warrants these products to be free from defects in materials or workmanship, under normal use and conditions, for a period of three (3) years for the original invoice date. Shipping and handling fees are to be paid by the customer. The manufacturer agrees, at its option during the warranty period, to repair any defect in material or workmanship or to furnish a repaired or refurbished product of equal value in exchange without charge (except for a fee for shipping, handling, packing, return postage, and insurance which will be incurred by the customer). Such repair or replacement is subject to verification of the defect or malfunction and proof of purchase as confirmed by showing the model number on original dated sales receipt.

The warranty does not include:

- Any condition resulting from other than ordinary wear or any use for which the product was not intended
- Any condition resulting from incorrect or inadequate maintenance or care
- Damage resulting from misuse, abuse, negligence or accidents
- Dissatisfaction due to buyer's remorse
- Normal wear and tear
- Damages incurred during transportation
- Damages incurred during assembly or maintenance

PlasmaGuard STAX™

PLASMAGUARD STAX™ CONNECTS DIRECTLY INTO THE SHIPS EXHAUST STACKS

PlasmaGuard STAX system eliminates harmful particulates from emission streams down to sub-micron (0.1) size by applying an electrostatic charge to the particles. The particles are then destroyed, converted and/or captured for proper removal from the air stream.

Using a high-voltage electric field, our system eliminates harmful emission molecules to meet even the most demanding applications. It maintains excellent long-term performance with the ability to effectively achieve greater than 99.9% removal efficiency, far exceeding other scrubber technologies on the market.



BEFORE



AFTER

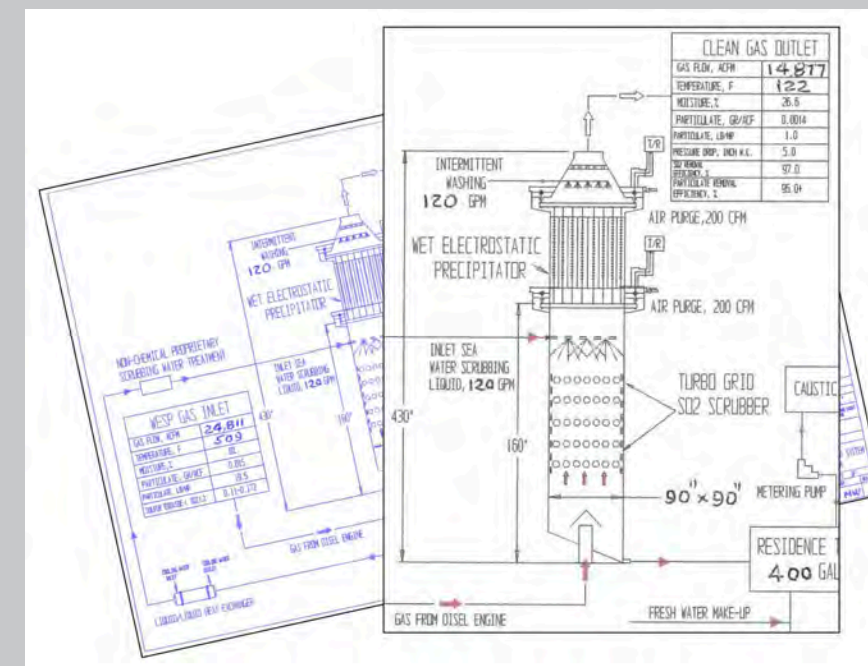


99.7% OPACITY REDUCTION

PLASMAGUARD STAX™ BENEFITS

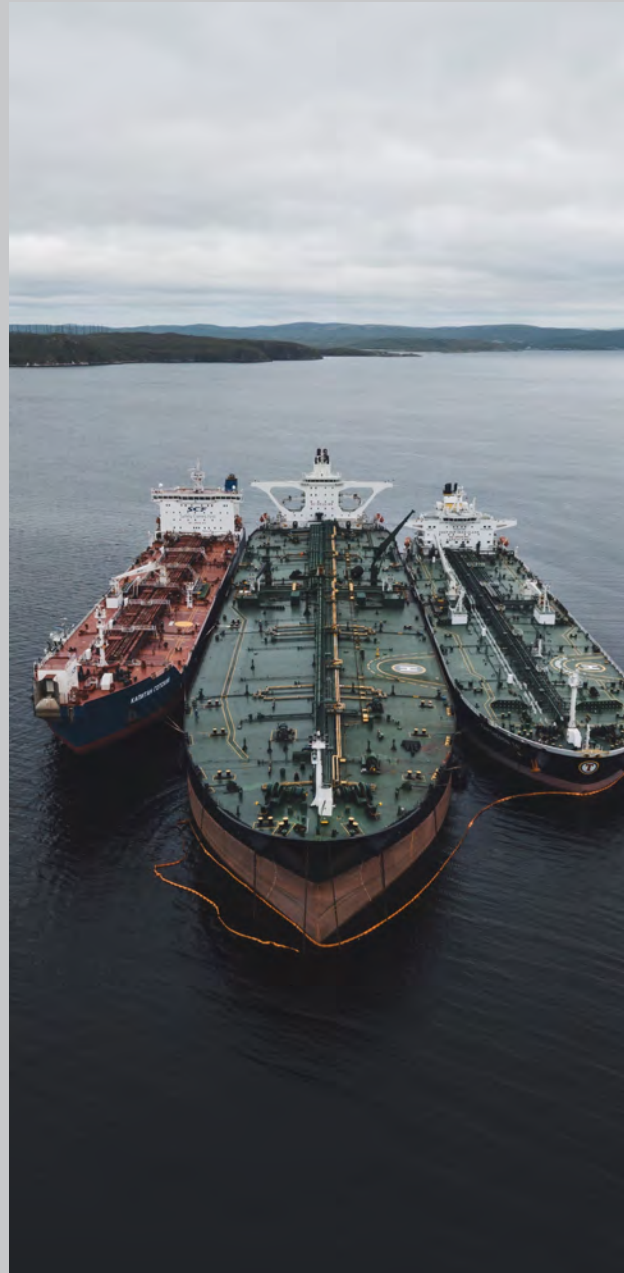


- Opacity Reduction 99.7%
- Heavy metals, mercury, dioxins/furans removal with 99.7% efficiency
- Sox removal 99.7%
- Odor Control
- Non catalytic low temp Nox technology yields 50%+ reduction
- Gas quench and scrubbing of acid gases of high temp exhaust systems
- In-Stack installations
- Condensable VOC (oil smoke) will be completely removed and collected for reuse.



Financing options are available

FINANCIAL BENEFITS AND COMPETITIVE ANALYSIS



LONG TERM HEALTH AND FINANCIAL BENEFITS

- Financing options are available to possibly lower your monthly payments
- Low maintenance costs
- No filters requiring replacements
- Significantly reduces dust cleaning required
- Clean air ship increases occupancy
- Provides employees the comfort and confidence to return to work
- Fewer employees becoming sick

FEATURES	PlasmaGuard ELT	PlasmaGuard PRO	Media Filtration	UV	PCO	Carbon Filters
Destroys all Pathogens First Pass	✓					
Captures all Particles	✓					
Washes and Cleans Continuously & Automatically	✓					
Eliminates Dioxins & Furans	✓					
Industrial Strength	✓					
Handles Large Air Flow Volumes	✓					
60,000 Volts of Power	✓					
Eliminates Heavy Metals	✓					
Significantly Reduces Surface Contamination	✓	✓				
Continuously Disinfects Ducts	✓	✓				
Affects Contaminants "In the Space"	✓	✓			✓	
Reduces Nox	✓					
Reduces Odors	✓	✓				✓
Reduces VOCs	✓	✓				✓
Reduces Particles (PM)	✓	✓	✓			✓
Effective on Bacteria, Viruses and Germs	✓	✓		✓	✓	
Converts Ozone to Pure Oxygen	✓	✓				
Low Pressure Drop	Very low	low				
Maintenance	none	Every 2 years	Quarterly	Yearly	Yearly	Bi-annually
Fit to Existing HVAC System	✓	✓				
New Design and Retro-fit Applications	✓	✓		✓	✓	
Reduces Energy Costs	✓	✓		✓	✓	
No Chemicals Byproducts	✓	✓	✓			
Tested Contaminant Reductions in Occupied Space	✓	✓				
Integrated with Sensors and Monitors	✓	✓				



PLASMA GUARD™ M A R I N E

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