

safety POWER

clean essential energy



ecoCUBE®

Global Emissions Compliance

ecoCUBE® with SCR, DPF, DOC & Silencer



ecoCUBE® Emissions Product Catalog for GE Jenbacher Engines

SCR and Silencing in one ecoCUBE®

If required add DOC, DPF to the same box

www.safetypowerinc.com

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About The ecoCUBE®

Safety Power's ecoCUBE® solution combines Selective Catalytic Reduction (SCR) technology with optional, Diesel Particulate Filters (DPF), Diesel Oxidation Catalysts (DOC) and Silencing Options for generators from 500 kW to 10 MW and above. Safety Power also provides commissioning services, installation services, remote monitoring and on-going support that allow diesel and natural gas engines to be operated and tested minimizing the impact on the surrounding environment.

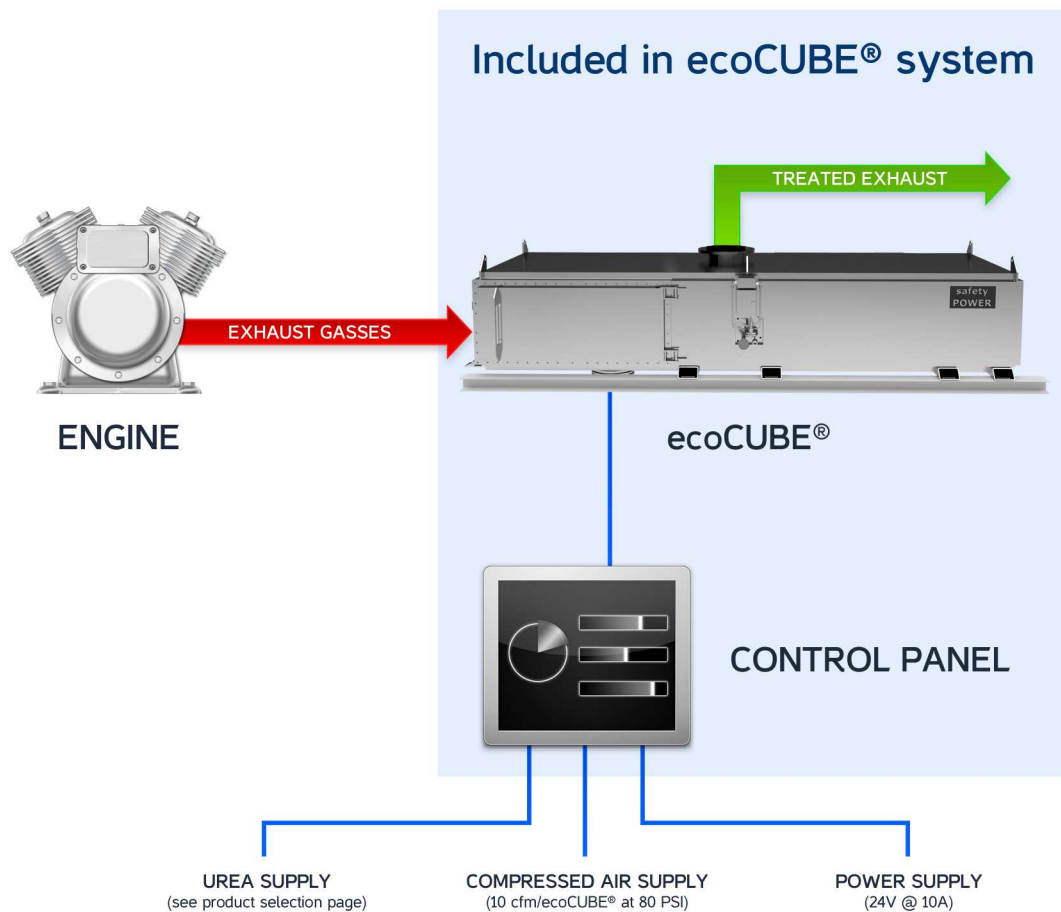
The ecoCUBE® Advantage

- Fully Compliant Tier 4f & Euro Stage IV Solution
- Up to 98% NO_x Reduction
- Optional DOC & DPF Integration
- Silencing up to 52 dBA Reduction
- Low Pressure Drop, Options from 6" WC
- Highly Customizable Inlet & Outlet locations
- Floor, Ceiling or Container Mounted Options
- Easy Addition to almost any Engine
- Ideal for Stationary, Marine and Non-Road Mobile Applications



What's Included

All of our ecoCUBE® systems contain Selective Catalytic Reduction (SCR) technology. ecoCUBE® systems also come with closed loop controls and system control panels. In order to operate the ecoCUBE® the control panel requires connections for power, urea and compressed air.



The ecoCUBE® system utilizes the Urea and Compressed Air supply for operation. Please see the Accessories Section of this Catalog if you are interested in receiving pricing for Urea and Compressed Air Systems supplied by Safety Power.

Urea is required to convert the NO_x in the exhaust gas into Nitrogen Gas and Water Vapor. Compressed Air is combined with the Urea Solution to create a fine mist of Urea that is spread evenly throughout the catalyst.

For more information on NO_x, Particulate Matter (PM), Carbon Monoxide (CO) and Hydrocarbon (HC) reduction levels please see the System Performance Level Section of this Catalog.

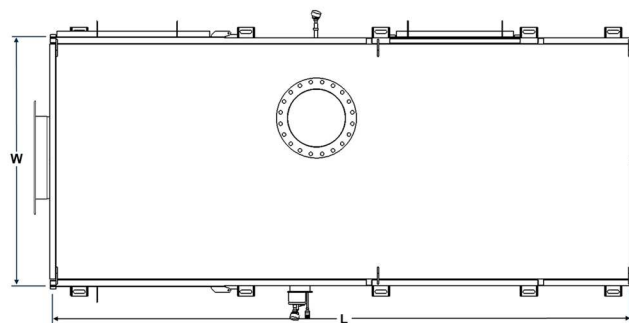
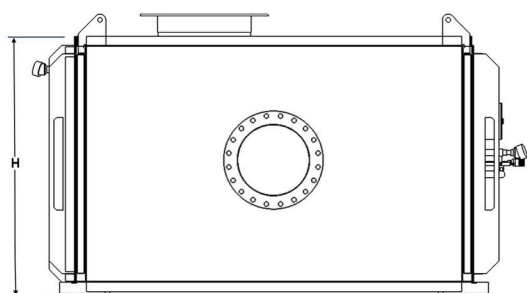
4 Easy Steps To Select Your ecoCUBE®

- 1** Find the ecoCUBE® Product Selection page corresponding to the engine you are using. Using the table, choose the desired SCR, SCR and Silencing or Tier 4 Compliant configuration with the correct pressure drop. Submit the corresponding part number via phone or email and receive same day or next day pricing.
- 2** Confirm that your desired Inlet, Outlet and Mounting Configurations are available from the Features and Options Section of this Catalog. If you desire a configuration not found in the Catalog, please contact Safety Power and we will likely be able to accommodate.
- 3** Please see the Features and Options Section of this Catalog (Pages 7-13). There are several Standard Options and Additional Options that can be selected. If you are interested in receiving pricing for the Additional Options please submit this information with your part number.
- 4** Please see the Accessories Section of this Catalog (Pages 15-20) . The ecoCUBE® requires a Urea and Compressed Air Supply for operation. If you are interested in receiving pricing for supporting Urea Storage or Air Compressor equipment, please selected the desired configurations from this section and submit this information with your part number.



* The ecoCUBE® selection pages list the most common engine types. If you cannot find your engine or desire a different configuration please contact Safety Power at the telephone number below and we will assist you.

GE Jenbacher J 312 GS-C81 633 kW NATURAL GAS



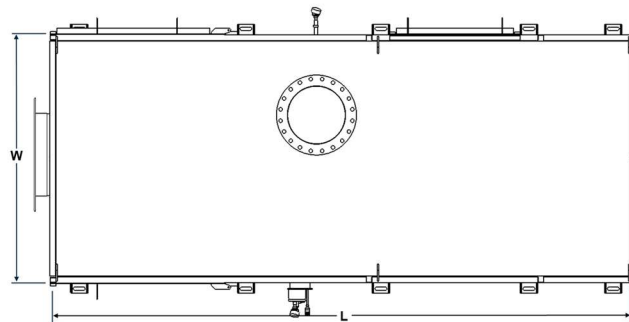
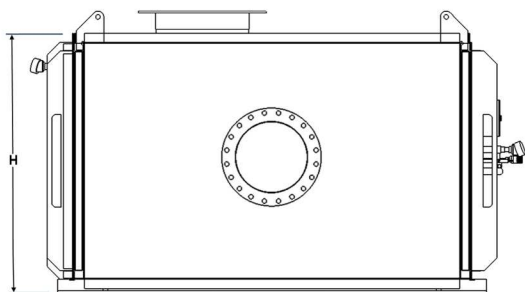
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	25.0	59.0	129.0	12.0	12.0	6.3	2350	9323-H300
	Low Pressure	25.0	59.0	129.0	12.0	12.0	6.3	2350	9323-H300
	Ultra Low Pressure	25.0	59.0	129.0	12.0	12.0	6.3	2350	9323-H300
SCR & Oxidation Catalyst	Standard	25.0	59.0	129.0	12.0	12.0	7.6	2500	9623-H304
	Low Pressure	25.0	59.0	129.0	12.0	12.0	7.6	2500	9623-H304
	Ultra Low Pressure	25.0	59.0	129.0	12.0	12.0	7.6	2500	9623-H304
SCR & Silencer	Standard	25.0	59.0	152.0	12.0	12.0	12.9	2950	9423-H306
	Low Pressure	25.0	59.0	152.0	12.0	12.0	12.9	2950	9423-H306
	Ultra Low Pressure	43.0	66.0	156.0	18.0	18.0	8.9	4550	9430-H206
SCR, Oxidation Catalyst & Silencer	Standard	25.0	59.0	152.0	12.0	12.0	14.7	2950	9923-H306
	Low Pressure	25.0	59.0	166.0	12.0	12.0	12.5	3250	9925-H308
	Ultra Low Pressure	43.0	66.0	156.0	18.0	18.0	8.4	4650	9930-H208

Full Load Urea Consumption: 0.5 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 316 GS-C85 848 ekW NATURAL GAS



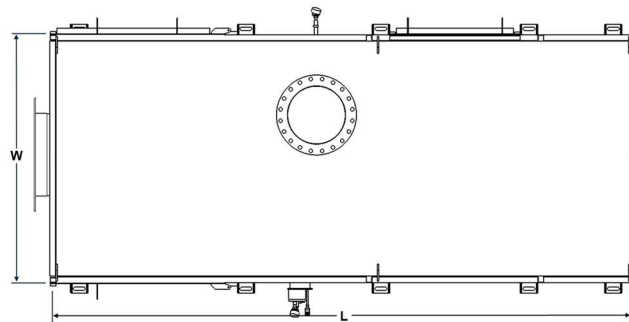
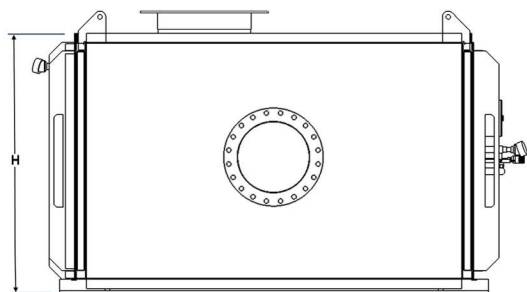
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	43.0	66.0	142.0	18.0	18.0	2.4	4100	9330-H200
	Low Pressure	43.0	66.0	142.0	18.0	18.0	2.4	4100	9330-H200
	Ultra Low Pressure	43.0	66.0	142.0	18.0	18.0	2.4	4100	9330-H200
SCR & Oxidation Catalyst	Standard	43.0	66.0	156.0	18.0	18.0	4.1	4550	9630-H206
	Low Pressure	43.0	66.0	156.0	18.0	18.0	4.1	4550	9630-H206
	Ultra Low Pressure	43.0	66.0	156.0	18.0	18.0	4.1	4550	9630-H206
SCR & Silencer	Standard	43.0	66.0	156.0	18.0	18.0	9.4	4650	9430-H208
	Low Pressure	43.0	66.0	156.0	18.0	18.0	9.4	4650	9430-H208
	Ultra Low Pressure	43.0	66.0	156.0	18.0	18.0	9.4	4650	9430-H208
SCR, Oxidation Catalyst & Silencer	Standard	43.0	66.0	156.0	18.0	18.0	11.2	4650	9930-H208
	Low Pressure	43.0	66.0	156.0	18.0	18.0	11.2	4650	9930-H208
	Ultra Low Pressure	43.0	66.0	169.0	18.0	18.0	9.4	5100	9930-H210

Full Load Urea Consumption: 0.6 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 320 GS - C85 1059 ekW NATURAL GAS



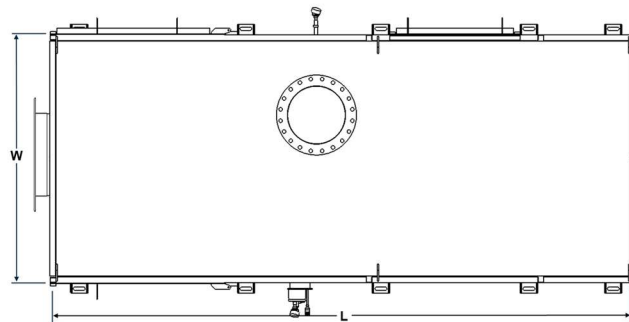
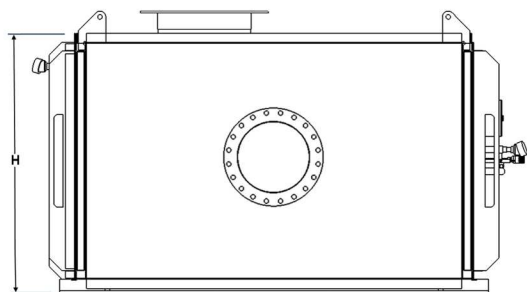
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	43.0	66.0	142.0	18.0	18.0	3.8	4350	9330-H300
	Low Pressure	43.0	66.0	142.0	18.0	18.0	3.8	4350	9330-H300
	Ultra Low Pressure	43.0	66.0	142.0	18.0	18.0	3.8	4350	9330-H300
SCR & Oxidation Catalyst	Standard	43.0	66.0	156.0	18.0	18.0	5.1	4900	9630-H308
	Low Pressure	43.0	66.0	156.0	18.0	18.0	5.1	4900	9630-H308
	Ultra Low Pressure	43.0	66.0	156.0	18.0	18.0	5.1	4900	9630-H308
SCR & Silencer	Standard	43.0	66.0	156.0	18.0	18.0	12.0	4900	9430-H308
	Low Pressure	43.0	66.0	156.0	18.0	18.0	12.0	4900	9430-H308
	Ultra Low Pressure	43.0	66.0	169.0	18.0	18.0	9.2	5450	9430-H312
SCR, Oxidation Catalyst & Silencer	Standard	43.0	66.0	156.0	18.0	18.0	14.0	4900	9930-H308
	Low Pressure	43.0	66.0	169.0	18.0	18.0	11.9	5350	9930-H310
	Ultra Low Pressure	43.0	66.0	183.0	18.0	18.0	9.6	5900	9930-H314

Full Load Urea Consumption: 0.8 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 412 GS-B85 852 ekW NATURAL GAS



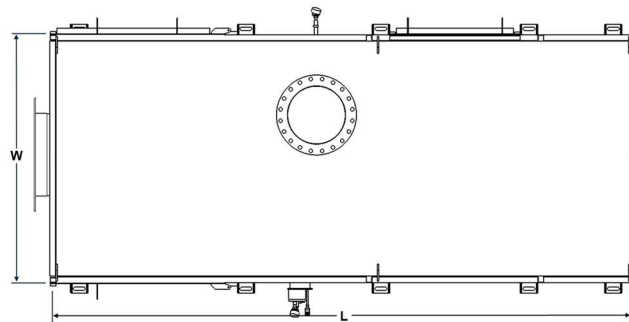
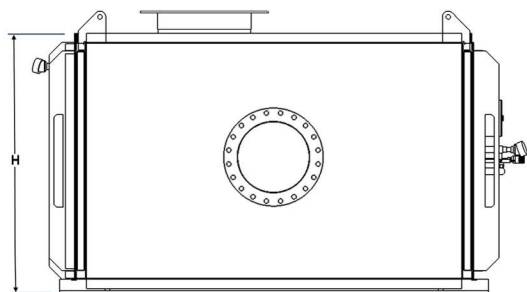
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	32.0	48.0	129.0	12.0	12.0	8.1	2450	9320-C300
	Low Pressure	32.0	48.0	129.0	12.0	12.0	8.1	2450	9320-C300
	Ultra Low Pressure	32.0	48.0	129.0	12.0	12.0	8.1	2450	9320-C300
SCR & Oxidation Catalyst	Standard	32.0	60.0	152.0	12.0	12.0	7.3	3600	9623-C206
	Low Pressure	32.0	60.0	152.0	12.0	12.0	7.3	3600	9623-C206
	Ultra Low Pressure	32.0	60.0	152.0	12.0	12.0	7.3	3600	9623-C206
SCR & Silencer	Standard	32.0	60.0	152.0	12.0	12.0	14.2	3600	9423-C206
	Low Pressure	32.0	60.0	166.0	12.0	12.0	12.3	3950	9425-C208
	Ultra Low Pressure	44.0	67.0	156.0	18.0	18.0	7.8	5050	9430-C208
SCR, Oxidation Catalyst & Silencer	Standard	32.0	60.0	152.0	12.0	12.0	16.1	3600	9923-C206
	Low Pressure	32.0	60.0	180.0	12.0	12.0	12.2	4300	9925-C210
	Ultra Low Pressure	44.0	67.0	156.0	18.0	18.0	9.3	5050	9930-C208

Full Load Urea Consumption: 0.6 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 416 GS-B85 1137 ekW NATURAL GAS



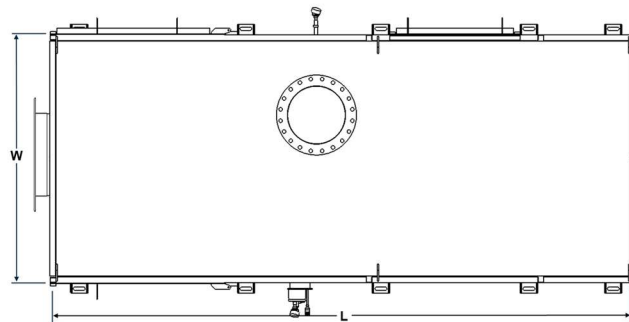
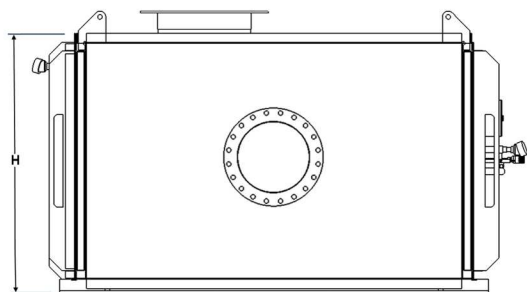
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	32.0	48.0	129.0	12.0	12.0	13.6	2450	9320-C300
	Low Pressure	44.0	67.0	142.0	18.0	18.0	2.9	4500	9330-C200
	Ultra Low Pressure	44.0	67.0	142.0	18.0	18.0	2.9	4500	9330-C200
SCR & Oxidation Catalyst	Standard	32.0	60.0	166.0	12.0	12.0	12.1	4200	9625-C308
	Low Pressure	32.0	60.0	166.0	12.0	12.0	12.1	4200	9625-C308
	Ultra Low Pressure	44.0	67.0	156.0	18.0	18.0	3.9	5050	9630-C208
SCR & Silencer	Standard	44.0	67.0	156.0	18.0	18.0	10.8	5050	9430-C208
	Low Pressure	44.0	67.0	156.0	18.0	18.0	10.8	5050	9430-C208
	Ultra Low Pressure	44.0	67.0	169.0	18.0	18.0	9.1	5500	9430-C210
SCR, Oxidation Catalyst & Silencer	Standard	44.0	67.0	156.0	18.0	18.0	12.7	5050	9930-C208
	Low Pressure	44.0	67.0	156.0	18.0	18.0	12.7	5050	9930-C208
	Ultra Low Pressure	44.0	67.0	169.0	18.0	18.0	9.3	5650	9930-C212

Full Load Urea Consumption: 0.8 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 420 GS-B85 1426 ekW NATURAL GAS



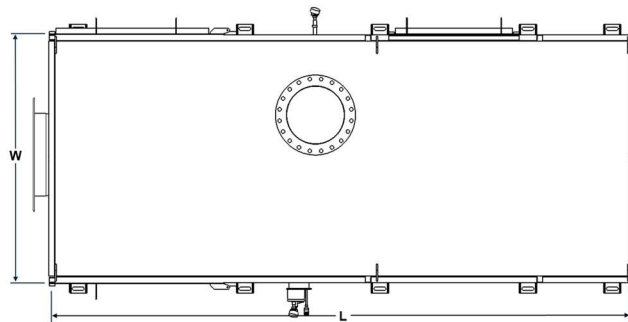
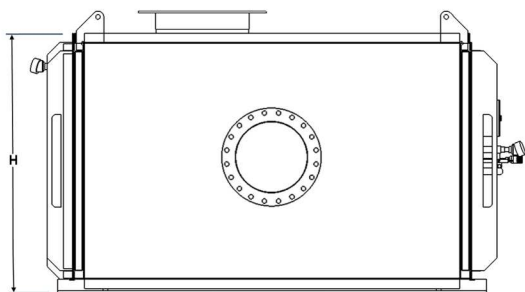
Type	H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number	
SCR	Standard	44.0	67.0	142.0	18.0	18.0	4.8	4900	9330-C300
	Low Pressure	44.0	67.0	142.0	18.0	18.0	4.8	4900	9330-C300
	Ultra Low Pressure	44.0	67.0	142.0	18.0	18.0	4.8	4900	9330-C300
SCR & Oxidation Catalyst	Standard	44.0	67.0	156.0	18.0	18.0	5.8	5450	9630-C308
	Low Pressure	44.0	67.0	156.0	18.0	18.0	5.8	5450	9630-C308
	Ultra Low Pressure	44.0	67.0	156.0	18.0	18.0	5.8	5450	9630-C308
SCR & Silencer	Standard	44.0	67.0	169.0	18.0	18.0	11.1	6000	9430-C312
	Low Pressure	44.0	67.0	169.0	18.0	18.0	11.1	6000	9430-C312
	Ultra Low Pressure	44.0	67.0	183.0	18.0	18.0	9.4	6600	9430-C316
SCR, Oxidation Catalyst & Silencer	Standard	44.0	67.0	169.0	18.0	18.0	12.7	6000	9930-C312
	Low Pressure	44.0	67.0	169.0	18.0	18.0	12.7	6000	9930-C312
	Ultra Low Pressure	44.0	67.0	196.0	18.0	18.0	9.3	7150	9931-C320

Full Load Urea Consumption: 1.0 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 612 GS-F09 1995 ekW NATURAL GAS



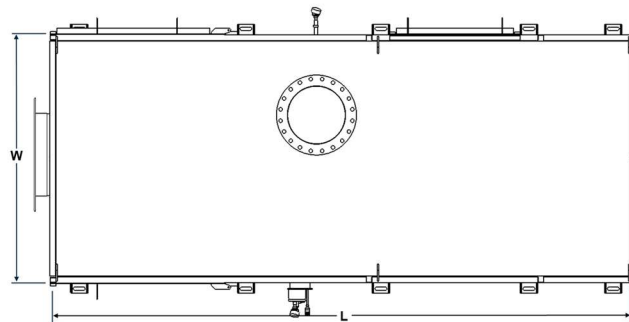
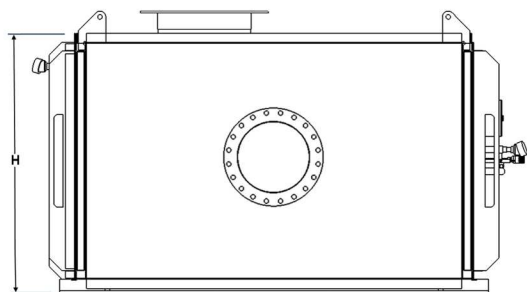
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	44.0	67.0	142.0	18.0	18.0	8.5	4900	9330-C300
	Low Pressure	44.0	67.0	142.0	18.0	18.0	8.5	4900	9330-C300
	Ultra Low Pressure	44.0	80.0	142.0	28.0	28.0	4.8	5850	9333-C300
SCR & Oxidation Catalyst	Standard	44.0	67.0	169.0	18.0	18.0	8.1	6000	9630-C312
	Low Pressure	44.0	67.0	169.0	18.0	18.0	8.1	6000	9630-C312
	Ultra Low Pressure	44.0	67.0	183.0	18.0	18.0	8.0	6600	9630-C316
SCR & Silencer	Standard	44.0	67.0	183.0	18.0	18.0	13.8	6600	9430-C316
	Low Pressure	44.0	80.0	196.0	28.0	28.0	10.8	8200	9435-C318
	Ultra Low Pressure	57.0	87.0	204.0	28.0	28.0	7.6	9100	9450-C220
SCR, Oxidation Catalyst & Silencer	Standard	44.0	67.0	196.0	18.0	18.0	13.8	7150	9931-C320
	Low Pressure	57.0	87.0	190.0	28.0	28.0	10.5	8400	9950-C216
	Ultra Low Pressure	57.0	87.0	204.0	28.0	28.0	7.6	9350	9950-C224

Full Load Urea Consumption: 1.5 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 616 GS-F09 2666 ekW NATURAL GAS



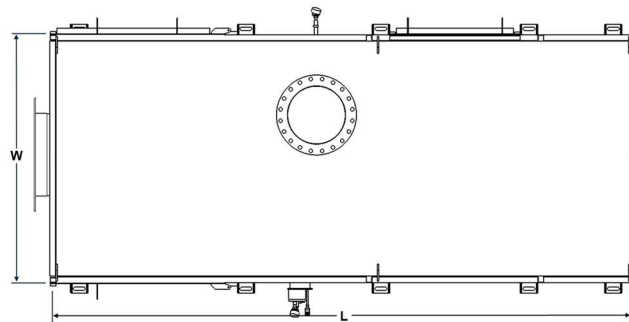
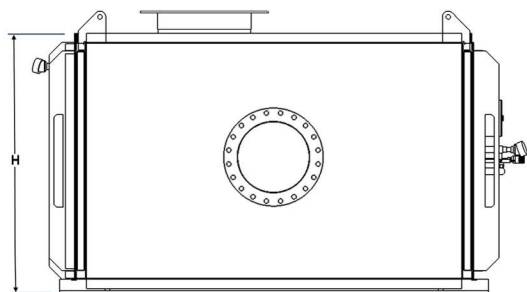
Type	H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number	
SCR	Standard	44.0	80.0	142.0	28.0	28.0	7.8	5850	9333-C300
	Low Pressure	44.0	80.0	142.0	28.0	28.0	7.8	5850	9333-C300
	Ultra Low Pressure	44.0	80.0	142.0	28.0	28.0	7.8	5850	9333-C300
SCR & Oxidation Catalyst	Standard	44.0	67.0	183.0	18.0	18.0	12.6	6600	9630-C316
	Low Pressure	44.0	80.0	183.0	28.0	28.0	8.8	7700	9633-C316
	Ultra Low Pressure	57.0	87.0	190.0	28.0	28.0	4.9	9100	9650-C316
SCR & Silencer	Standard	57.0	87.0	204.0	28.0	28.0	10.9	9800	9450-C320
	Low Pressure	57.0	87.0	204.0	28.0	28.0	10.9	9800	9450-C320
	Ultra Low Pressure	57.0	100.0	218.0	32.0	32.0	7.7	11350	9455-C230
SCR, Oxidation Catalyst & Silencer	Standard	57.0	87.0	204.0	28.0	28.0	12.5	9800	9950-C320
	Low Pressure	57.0	87.0	204.0	28.0	28.0	11.0	10000	9950-C324
	Ultra Low Pressure	70.0	101.0	206.0	32.0	32.0	7.9	12400	9980-C232

Full Load Urea Consumption: 1.9 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 620 GS-F09 3333 ekW NATURAL GAS



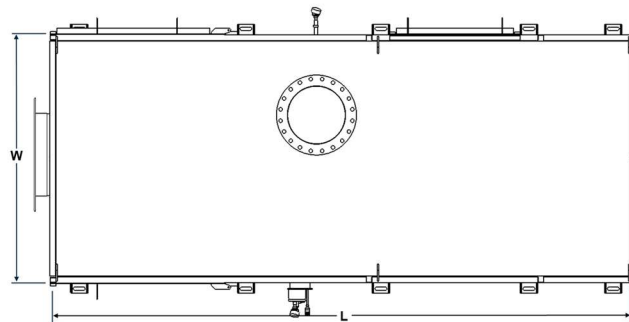
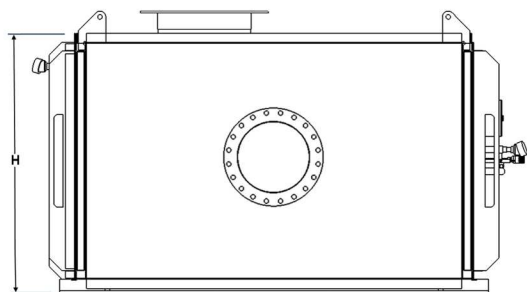
Type		H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number
SCR	Standard	44.0	80.0	142.0	28.0	28.0	11.7	5850	9333-C300
	Low Pressure	57.0	87.0	177.0	28.0	28.0	5.7	8350	9350-C300
	Ultra Low Pressure	57.0	87.0	177.0	28.0	28.0	5.7	8350	9350-C300
SCR & Oxidation Catalyst	Standard	44.0	80.0	196.0	28.0	28.0	12.5	8350	9635-C320
	Low Pressure	57.0	87.0	204.0	28.0	28.0	6.4	9800	9650-C320
	Ultra Low Pressure	57.0	87.0	204.0	28.0	28.0	6.4	9800	9650-C320
SCR & Silencer	Standard	57.0	87.0	204.0	28.0	28.0	12.7	10000	9450-C324
	Low Pressure	57.0	100.0	218.0	32.0	32.0	11.0	12100	9455-C328
	Ultra Low Pressure	70.0	101.0	220.0	32.0	32.0	7.9	13400	9481-C240
SCR, Oxidation Catalyst & Silencer	Standard	57.0	87.0	218.0	28.0	28.0	13.6	10550	9951-C326
	Low Pressure	70.0	101.0	206.0	32.0	32.0	10.7	12250	9980-C230
	Ultra Low Pressure	70.0	101.0	234.0	32.0	32.0	8.0	14450	9981-C248

Full Load Urea Consumption: 2.4 USgph

Important Product Information

- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.

GE Jenbacher J 624 GS-H01 4016 ekW NATURAL GAS



Type	H (in)	W (in)	L (in)	Inlet D (in)	Outlet D (in)	Pressure Drop ("WC)	Weight (lbs)	Part Number	
SCR	Standard	57.0	87.0	177.0	28.0	28.0	7.1	8350	9350-C300
	Low Pressure	57.0	87.0	177.0	28.0	28.0	7.1	8350	9350-C300
	Ultra Low Pressure	57.0	87.0	177.0	28.0	28.0	7.1	8350	9350-C300
SCR & Oxidation Catalyst	Standard	57.0	87.0	204.0	28.0	28.0	7.6	9900	9650-C322
	Low Pressure	57.0	87.0	204.0	28.0	28.0	7.6	9900	9650-C322
	Ultra Low Pressure	57.0	87.0	204.0	28.0	28.0	7.6	9900	9650-C322
SCR & Silencer	Standard	57.0	87.0	218.0	28.0	28.0	13.7	10700	9451-C328
	Low Pressure	70.0	101.0	206.0	32.0	32.0	11.0	13500	9480-C332
	Ultra Low Pressure	70.0	114.0	247.0	32.0	32.0	7.9	17000	9485-C256
SCR, Oxidation Catalyst & Silencer	Standard	57.0	100.0	218.0	32.0	32.0	14.0	12250	9955-C330
	Low Pressure	70.0	101.0	220.0	32.0	32.0	10.8	14500	9981-C340
	Ultra Low Pressure								

Full Load Urea Consumption: 2.9 USgph

Important Product Information

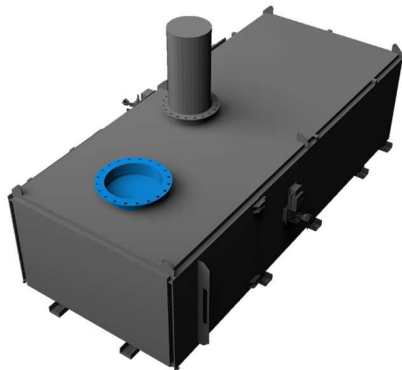
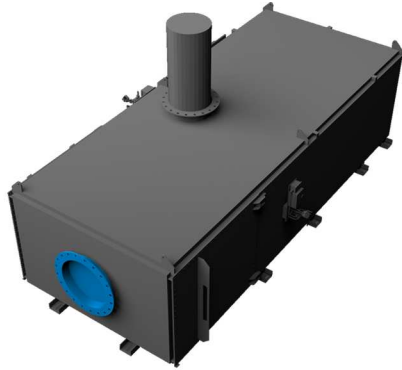
- SCR NO_x reduction is to Tier 4f levels.
- All Tier 4f Compliant and SCR & Silencing options provide Hospital Grade Silencing (35 - 43 dBA). If further attenuation is required please contact us.
- Please use inlet/outlet configuration section (pages 7 and 8) to add the desired inlet and outlet configurations to your part number.
- Products shown are most common designs. If desired configuration is not listed, please contact us and we likely will accommodate.
- Dimensions, pressure drop and weights may vary slightly from production models.
- Inlet and outlets flanges are 1/2" stainless steel.
- ecoCUBE® is constructed from 316 Stainless Steel.
- To add fall arrest rails please see the fall arrest section (page 10)
- 10 CFM @ 80 PSI compressed air.
- Compliance does not mean certified. A Tier 4f compliant engine will provide the same level of emissions reduction as certified.
- Maintenance Access Area Requirements: Allow minimum 4 ft access on left and right surfaces. Allow minimum 2.5 ft access on front surface.
- Tier 4f systems generally include: DOC, DPF, SCR and silencing.



ecoCUBE[®] Standard Features and Options

This Section outlines the Standard Features and Available Options for the ecoCUBE[®]. Standard Features are included with your ecoCUBE[®] configuration. Additional Options should be submitted with the ecoCUBE[®] Part Number for pricing.

Available Standard Inlet Profiles

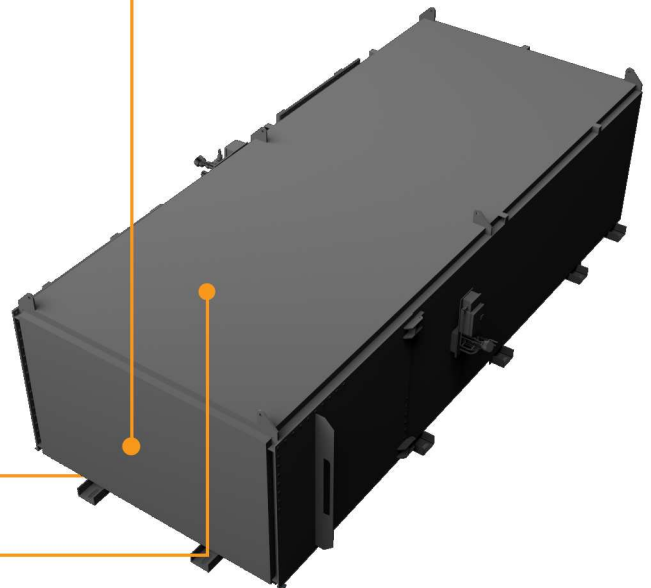


1 End Inlet

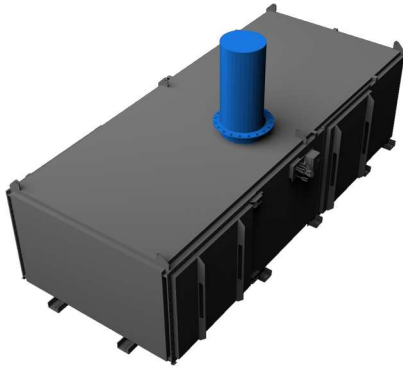
2 Bottom Inlet

3 Top Inlet

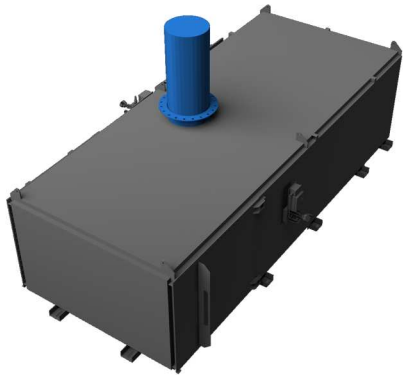
4 Dual Bottom Inlet



Available Standard Outlet Profiles



1 Top Outlet Biased Right Side



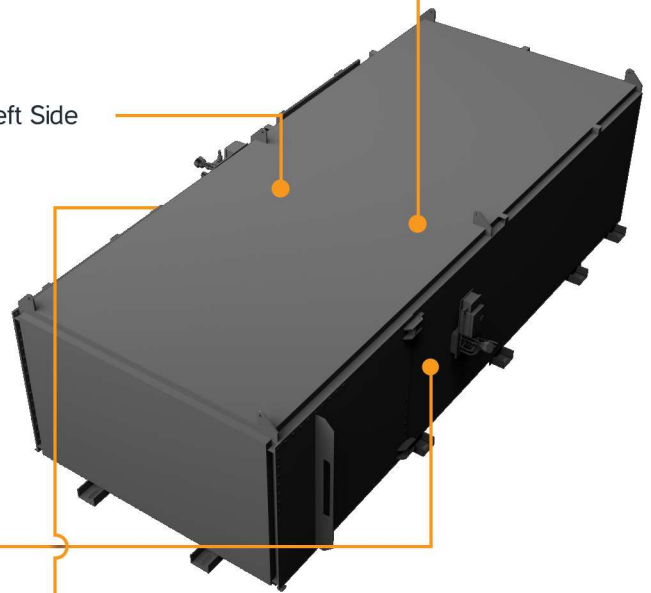
2 Top Outlet Biased Left Side



3 Right Side Outlet



4 Left Side Outlet



* Bottom outlets are available as well, for more details please contact us.

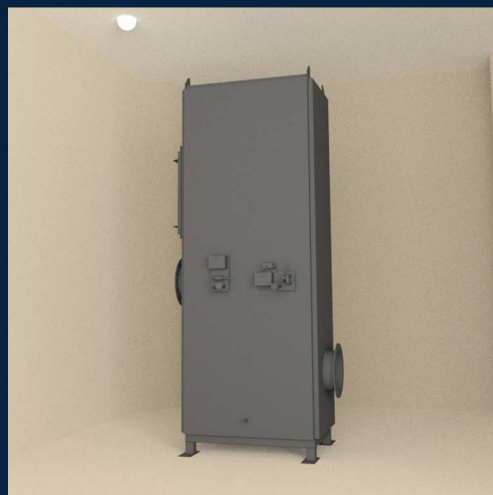
** The exhaust outlet stack is not included with the ecoCUBE® system.

Available Standard Mounting Configurations

1 CELLING MOUNT



2 VERTICAL MOUNT



3 SIDE MOUNT



4 CONTAINER OR FLOOR MOUNT

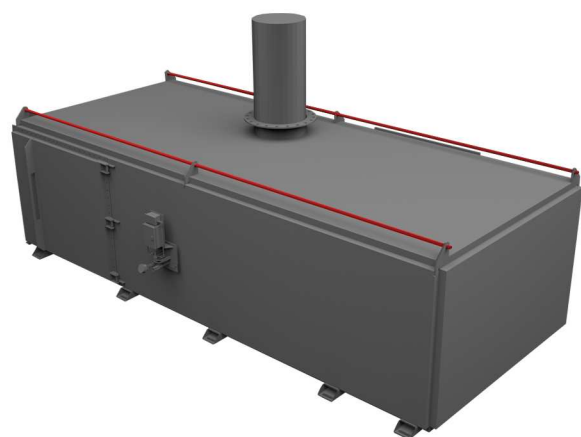


Other Standard Features



The ecoCUBE® is compliant with Seismic Zone 2 standards

Higher compliance levels are available upon request.



The ecoCUBE® has an Integrated "Fall Arrest" Safety Enhancement for Container Mount Applications

This type of system is important for workers when the ecoCUBE® is container mounted to prevent worker injury.

Each support rail in the "Fall Arrest, Work Restraint System" is rated to 4kN and is suitable for up to 2 workers.

Standard Controls

All ecoCUBE® systems come with Standard Controls that can be accessed using a Web Browser.

The Standard Controls display current system operation and allow access to historical parameters such as NO_x, temperature and pressure readings.

The Standard Controls also has a Modbus over ethernet interface, allowing easy connectivity to your Building Automation System (BAS).



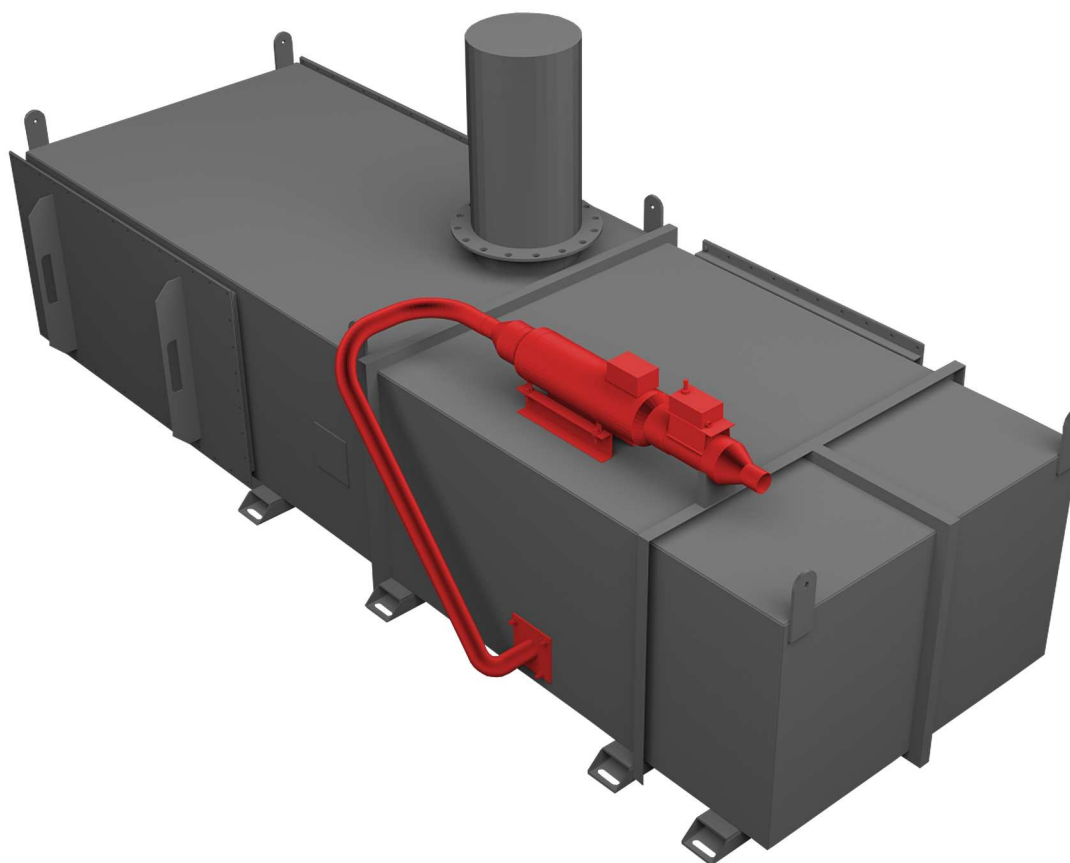
<p>safety POWER www.safetypower.ca</p> <p>ecoCUBE Status</p> <p>ONLINE</p>	COMMUNICATION		UREA INJECTION	
	SPI Controller: Idle		Mode: ANR	
	ENGINE		Air Valve: Open	
	Status: On	Load: 2495 KW	Air Pressure: Normal	Urea Valve: Open
Run Time: 71h 39m 26s	DPF		Flow Rate: 7.95 G/H	Pump Speed: 2.13 mV
Status: Soot Level Ok - 8%	Upstream: 857 F	Downstream: 855 F	Urea Level: 85 %	Run Time: 50h 33m 14s
Delta Pressure: 10 iwc	Cold Starts: 2	Inlet NO _x : 650 ppm	SCR	
Inlet O ₂ : 10.51 %	Temperature: 854.2 F	Delta Pressure: 1 iwc	Outlet NO _x : 41 ppm	Outlet O ₂ : 10.63 %

All ecoCUBE® Control Systems utilize two NO_x sensors to actively supply a Closed Loop Control Algorithm. The Closed Loop Control coupled with an additional Model Based Predictive Control Algorithm delivers industry leading response times to changing loads, ensuring that the correct level of Urea is injected at the right time.

Optional Pre-Heat System

Safety Power's Optional Pre-Heat System ensures that the ecoCUBE® is operational within 5 minutes from engine startup. This option is of special interest in areas that require very stringent NO_x reduction within a short period of time.

In order for the NO_x reducing chemical reactions to occur, the SCR Catalyst must reach Activation Temperature. Generally Activation Temperature is reached utilizing the hot exhaust gasses from the generator, but in some specific cases the Pre-Heat unit is required to reduce this warm up time.



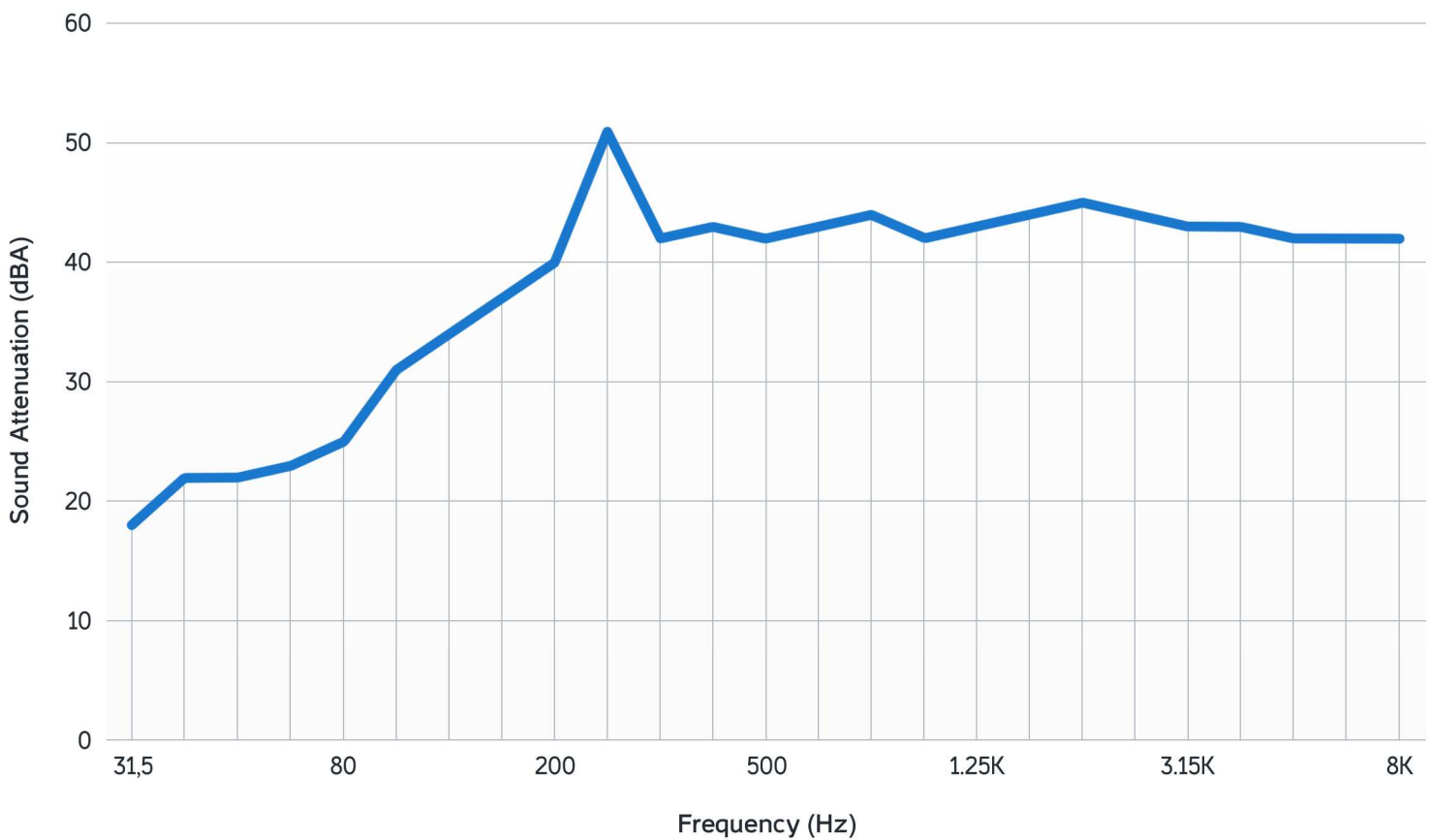
The system works by injecting hot air into the ecoCUBE® prior to engine operation. This Patent Pending technique utilizes an external electric heating element and a fan to Pre-Heat the ecoCUBE® SCR Catalyst to a pre-operation temperature.

This method is advantageous as it is electrically driven, instead of using other methods such as fuel injection. The electrical draw is small and is analogous to a block heater.

ecoCube® Silencing

Typical Sound Attenuation Properties of ecoCUBEs® with Silencing or Tier 4f Compliance

ecoCUBE® Sound Attenuation



Overall sound attenuation levels with these modules are typically considered Hospital Grade or above. The overall sound attenuation levels are 35-43 dBA.

Enhanced silencing modules are also available for further reduction up to 52 dBA. If you require further sound attenuation please contact Safety Power at the telephone number below and we will make sure our solution can meet your needs.

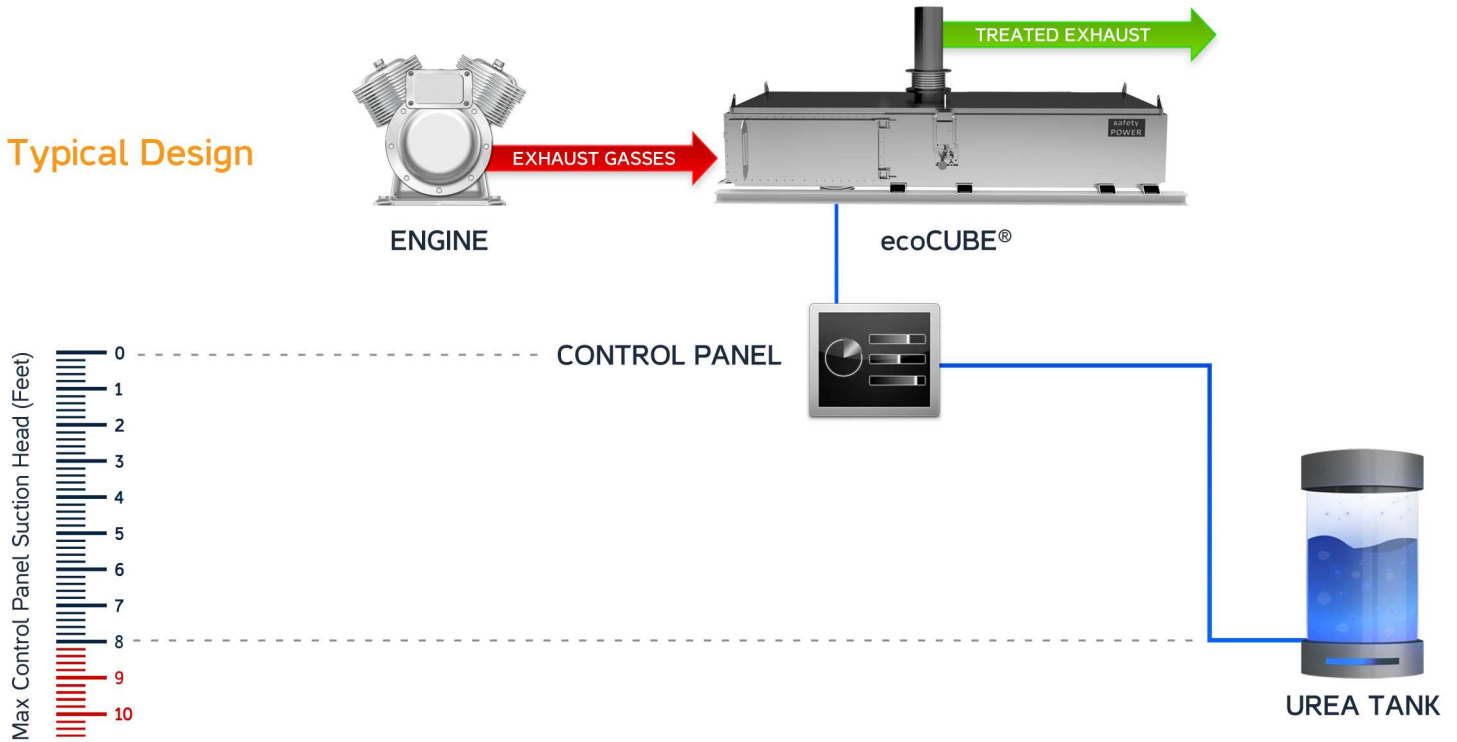


ecoCUBE[®] Accessories

The ecoCUBE[®] system requires Urea and Compressed Air Supplies to operate. This section provides typical layouts for Urea Storage and Supply components. In addition, it also provides you with the necessary information to receive pricing from Safety Power for the supply of these components.

ecoCUBE® Urea Storage System for a Single Engine (<8' Suction Pressure)

Typical Design



Urea Storage Selector for Single Engine, Low Pressure

Select an option from each column and provide selection to Safety Power with engine type for pricing.

Configuration	Storage Run-Time	Material	Wall Type	Insulated	Heated
Single Engine - LP	8 hrs	HDPE	Single Wall	Yes	Yes
	24 hrs	Stainless	Double Wall	No	No
	48 hrs				
	72 hrs				

What's Included

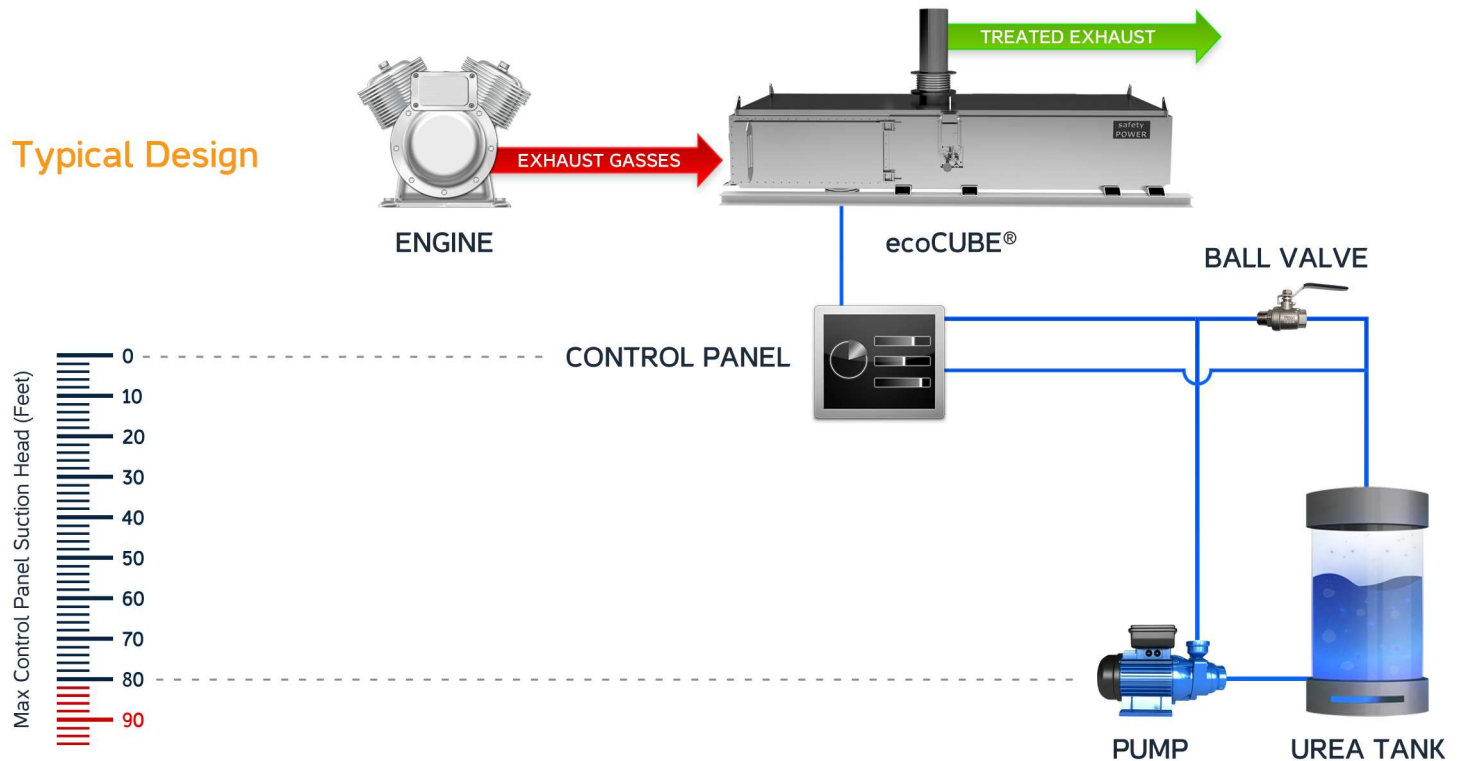
Tank with level sensor, breather valve and controls for system
All Double Wall Tanks come with leak monitors

Provided by Others

System Installation
Supply and Install of ether Black Iron or Stainless Steel inter-connecting piping and valving

ecoCUBE® Urea Storage System for a Single Engine (>8' Suction Pressure)

Typical Design



Urea Storage Selector for Single Engine, High Pressure

Select an option from each column and provide selection to Safety Power with engine type for pricing.

Configuration	Storage Run-Time	Material	Wall Type	Insulated	Heated
Single Engine - HP	8 hrs	HDPE	Single Wall	Yes	Yes
	24 hrs	Stainless	Double Wall	No	No
	48 hrs				
	72 hrs				

What's Included

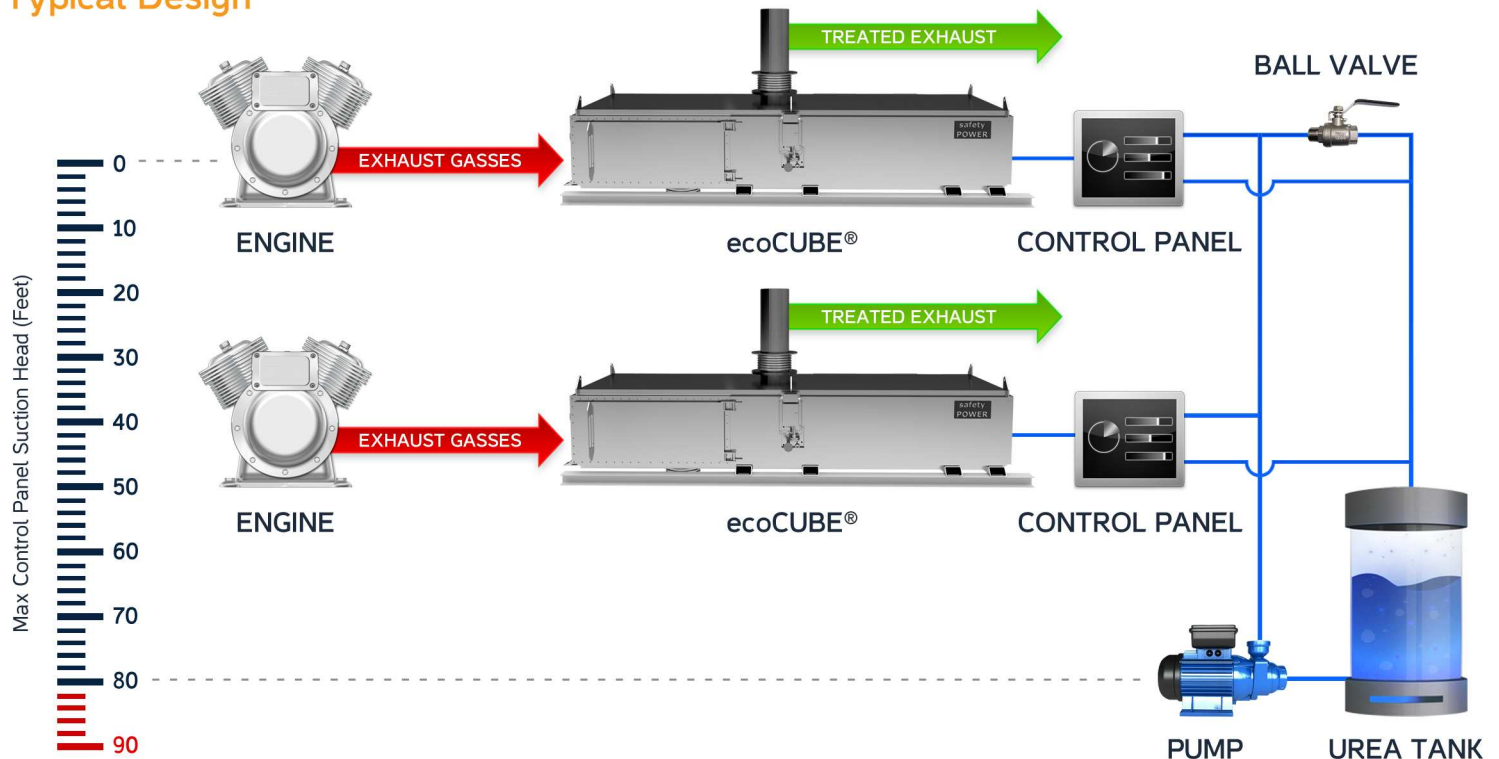
Tank with level sensor, breather valve and controls for system
All Double Wall Tanks come with leak monitors

Provided by Others

System Installation
Supply and Install of ether Black Iron or Stainless Steel inter-connecting piping and valving

ecoCUBE® Urea Storage System for Multiple Engines

Typical Design



Urea Storage Selector for Multiple Engines

Select an option from each column and provide selection to Safety Power with engine type for pricing.

Configuration	Storage Run-Time	Material	Wall Type	Insulated	Heated
Multiple Engines	8 hrs	HDPE	Single Wall	Yes	Yes
	24 hrs	Stainless	Double Wall	No	No
	48 hrs				
	72 hrs				

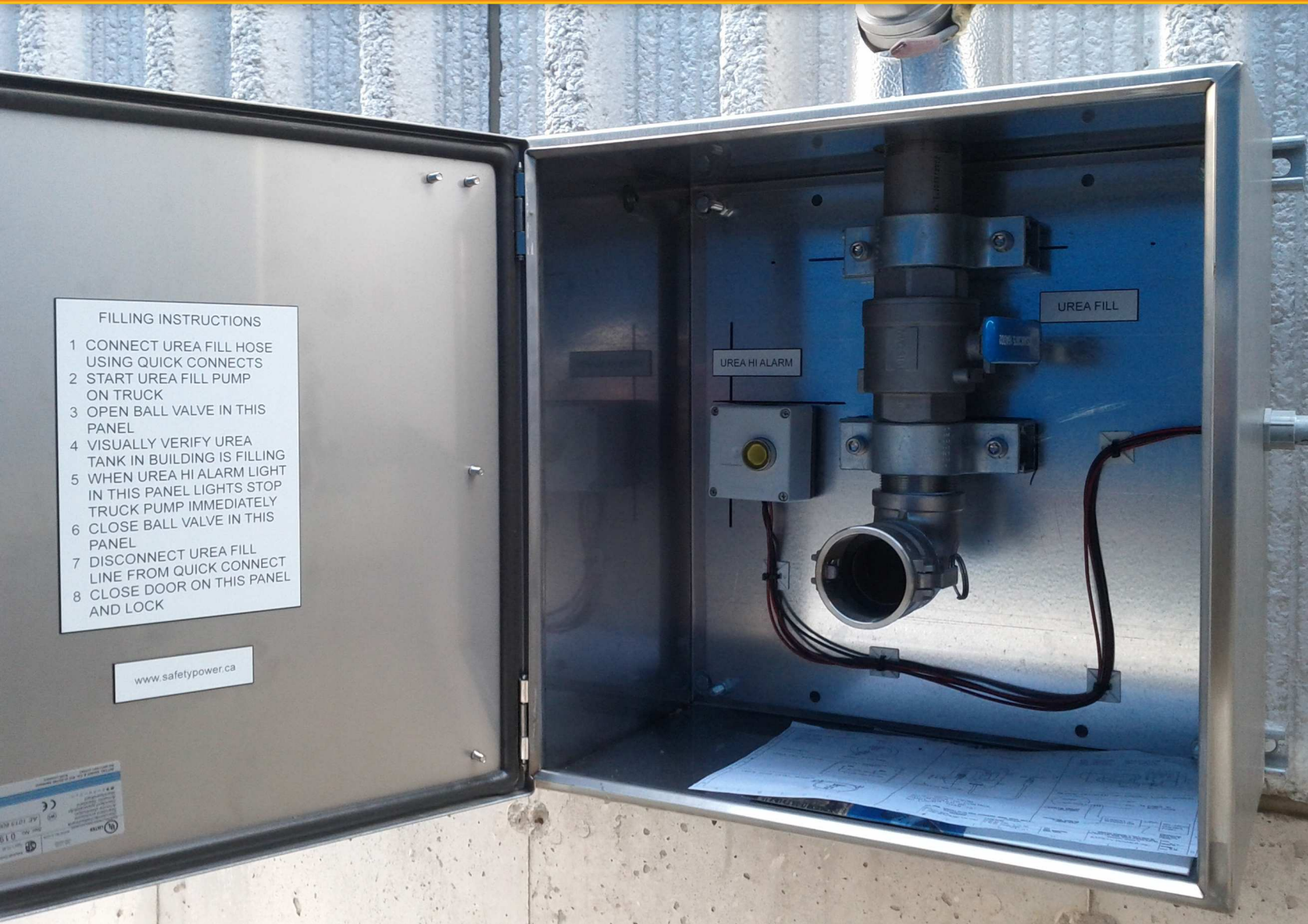
What's Included

Tank with level sensor, breather valve and controls for system
All Double Wall Tanks come with leak monitors

Provided by Others

System Installation
Supply and Install of ether Black Iron or Stainless Steel inter-connecting piping and valving

Urea Fill Station



Safety Power also supplies Optional Urea Fill Stations. A Fill Station is ideal for locations with indoor Urea Tanks, providing easy outside access for Urea providers.

The Fill Station contains a 2" Camlock connection and a Urea high level alarm that indicates when the storage tanks are full. The Fill Station is also enclosed in a lockable cabinet to deter tampering. A shut-off valve is also included to prevent backflow of filled Urea.

If you would like to include a Urea Fill Station on your project please indicate this when submitting information for pricing.

* Please note that installation, interconnecting piping and associated valves are provided by others.

Using Urea Storage Totes

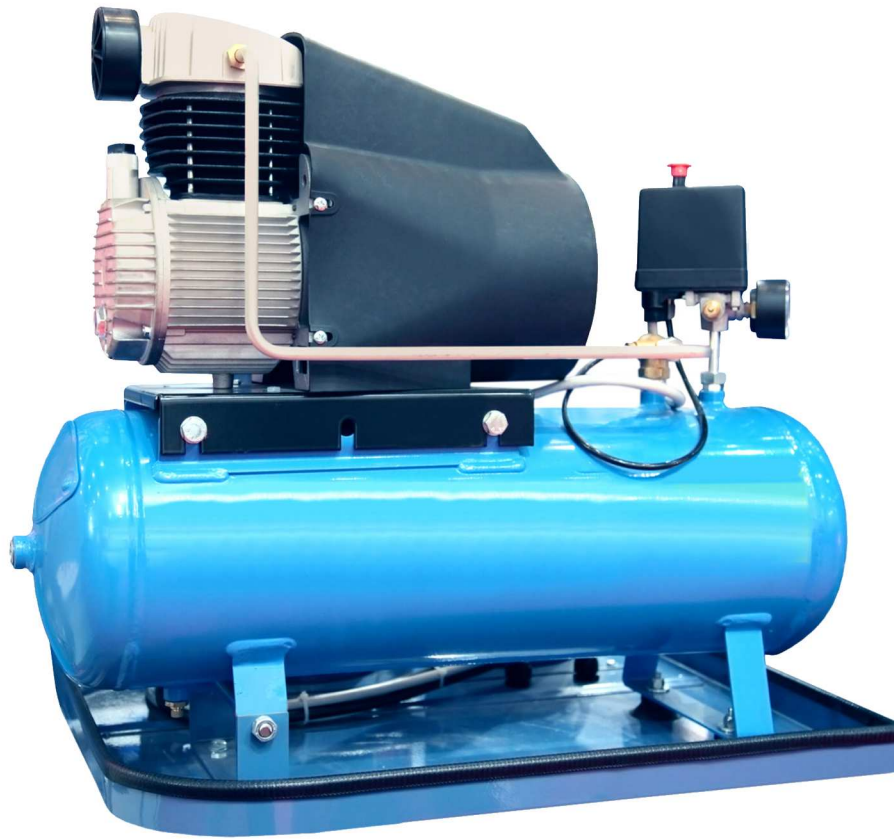


Urea Totes can be a very convenient way to purchase Bulk Urea. Totes are typically shipped with pre-filled urea and are swapped out when empty. They can be used in place of the Urea Storage Tanks (shown on previous pages) but may not have enough capacity for large installations. If Totes are being used in an environment where there is a potential to freeze, please make sure that they are stored in a heated environment and have an accessible route for replacement. Typical Totes are 1100 liters / 290 USGal.

If you are interested in using Totes, please use the previous pages to select your Engine Storage Configuration and complete the Table below:

Configuration	Storage Run-Time	Material
Single Engine - LP (<8' suction head)	24 hrs	Tote
Single Engine - HP (>8' suction head)	48 hrs	
Multiple Engines	100 hrs	
	200 hrs	

Air Compressors



Each ecoCUBE® System requires 10 CFM of clean, dry compressed air at 80 PSI. For air compressor pricing, please select the appropriate options from the Table below:

Operation Type	Mounted Inside Container	Redundant Compressor Design
Prime Power	Yes	Yes
Stand-By	No	No

If you purchase your air compressor through Safety Power, we will supply a compressor with air dryer that is appropriate for your application. Installation of the compressor, interconnecting piping, valves and air dryers are provided by others. Safety Power has worked on several compressed air installations for SCR systems and can provide assistance if you have a specific design in mind.



ecoCUBE[®]

General Information

While every attempt is made to ensure accuracy, all of the information presented in this section is for information purposes only. Actual terms and conditions, technical guarantee, service, clarifications and delivery information are included in a formal contract only.

System Performance Levels

All ecoCUBE® Systems listed in the ecoCUBE® Product Selection Pages of this Catalog have been designed to meet one of the following performance levels:

Tier 4f Compliant ecoCUBE® Systems

will reduce full load emissions of the specified generator to Tier 4f levels, please see the Table below for Tier 4f concentration levels.*

Emissions	Tier 4f Compliant (g/bhp-hr)
NO _x	0.5
CO	2.6
NMHC	0.14
PM	0.01

SCR and SCR + Silencing ecoCUBE® Systems

will reduce full load NO_x emissions of the specified generator to Tier 4f levels, please see the Table below for Tier 4f NO_x concentration levels.*

Emissions	Tier 4f Compliant (g/bhp-hr)
NO _x	0.5

SCR and Oxidation Catalyst with / without Silencer

will reduce full load emissions of the specified generator to the levels in the table below.*
Further reductions available on request.

Emissions	Reduction Level (g/bhp-hr)
NO _x	0.5
CO	2.6
NMHC	0.14

* The design of the Safety Power emissions reduction system is based on NO_x being calculated as NO₂.

General ecoCUBE[®] Maintenance Guidelines

The honeycomb SCR catalyst installed in the ecoCUBE[®] system is supplied by Safety Power to ensure reliable performance over the life of the system. Operating in accordance with the manufacturer's recommendations the catalyst is warranted from defects 15,000 operating hours or 5-years, whichever comes first, provided that correct fuel and urea are used. Periodic inspection of the SCR catalyst by measuring and noting the differential pressure across the catalyst should be the only maintenance required over the life of this system.

NOTE: Safety Power's Warranty coverage does not negate the requirement for annual maintenance and inspection of the system to ensure peak performance. During the Warranty Period any parts found to be defective will be supplied at no additional charge. Safety Power recommends a minimum of one visit per year to inspect, clean and adjust the system.

Periodic Inspection

1. Prior to operation of the generator check urea tank and top up if necessary. Use a urea concentration analyzer to verify that the urea is at a concentration of approximately 32.5% by weight.
2. Visually inspect all urea fittings, dosing pump, urea lines for signs of leaks and correct if necessary. Leaks will be evident by signs of crystallization.
3. Check SCR control panel for alarm faults. If any faults are observed contact your Safety Power technical representative.
4. Ensure secure power is provided to the control panel and dosing system.
5. Check that air compressor is operational and receiver is charged and there are no leaks.

Annual Maintenance and testing

In order to ensure the reliable operation and performance of the SCR system periodic maintenance is required. Safety Power recommends that the owner enter into a service agreement with Safety Power.

Annual maintenance inspections include but not limited to:

Scope of Work: Maintenance, Inspection, Warranty Repairs
Frequency: Every Twelve (12) Months

Prior to the Measurement & Verification services, Safety Power's Technician will carry out the following recommended maintenance & inspection services:

1. Air compressor – inspect and as required adjust pressure for atomization and purging functions.
2. Inspect SCR catalyst - by comparing delta pressure changes since the last inspection found in historical data-logger.

General ecoCUBE[®] Maintenance Guidelines

3. If included, inspect DPF cartridges – by comparing delta pressure (dP) changes since last inspection found in historical data-logger. Note dP pressure for final report.
4. Check injection lance - done by verifying flow at various engine loads. Once every 500 operating hours (SCR) remove and visually inspect injection nozzle for build-up and wear. The lance tip may need replacement after several years (5 - 10) as it is exposed to high temperature - the replacement parts are not covered by the Service Agreement.
5. Inspect system for urea and air leaks. Tighten fittings as needed.
6. Inspect dosing pump. Verify pump operation. Typically the replacement parts may include the gear assembly required after several years (5 - 10) – replacement parts are not covered by the Service Agreement.
7. Check urea level in day tank prior to measurement & verification testing. Check urea concentration using a urea concentration analyzer.
8. Participate in testing of the generator to ensure the total system functions in conjunction with the generator controls.
9. Check control panel software revision and upgrade to most recent revision if applicable. The cost of maintaining the most current revision of software for the SCR system is included in the Service Agreement.

Scope of Work: Measurement & Verification

Frequency: Every Twelve (12) Months

Sampling will be performed as follows:

One sample for oxides of nitrogen (NO_x) will be collected from the exhaust of each of the emergency generators.

Sampling will be performed at each unit (after approximately 15 minute warm-up period) for a period required to show stable operation of the unit (expected to be 15 to 20 minutes in length).

Results will be reported as lbs/hour NO_x at 15% oxygen.

During sampling Safety Power's Technician will monitor and record the engine loads and other operating conditions including the feed rate of Urea for inclusion in the final report. Safety Power will obtain the manufacturer's specification data for each of the engines to determine exhaust flow rates during testing.

General Installation Requirements

1. Client's exhaust duct must be supported independently of ecoCUBE®. ecoCUBE® Outlet Flange is not designed to carry more than 500 lbs of external load.
2. Client must make sure there is no absorptive silencer upstream of ecoCUBE® to prevent possible clogging of catalyst caused by downwash of absorptive material.
3. Outdoor urea lines to be insulated and heat traced (see PI-02 drawing in Formal Proposal). Urea lines to be 1/4" stainless steel.
4. Client to ensure fixed points of reactor are rigidly connected to building or enclosure structure. Do not weld ecoCUBE® to structure.
5. For ceiling mounted ecoCUBE®, 1" threaded rods must be no longer than 10 feet. Structural cross brace must be installed at fixed points to limit lateral motion.
6. Client must use low ash engine lube oil type CJ-4 or higher.
7. Client engine must be equipped with exhaust temperature sensor and alarm.
8. Control Panel must be mounted a minimum distance of one (1) foot away from the ecoCUBE®. Control Panel must also be mounted no more than a distance of 75 linear feet or 8 feet in static head pressure away from ecoCUBE®.
9. On ecoCUBE® equipped with oxidation catalysts engine control unit should have an override to prevent over fuelling an engine which is unable to deliver the requested load. Failure to have this override can result in excess post combustion in the oxidation catalysts. Such excess post combustion will damage the oxidation catalysts and void any associated warranty.

Sample Bill of Materials

ecoCUBE® System Components Description	For Engine XXXX
1. Reactor Assembly (Engine Specific ecoCUBE® Series)	Included
1.1 ecoCUBE® SCR Reactor assembly 409 s/s c/w temperature, pressure and NOx sensors	Included
1.2 SCR Catalyst	Included
1.3 Catalyzed Filter Cartridges - SPI FOx™ (Only for Tier 4 Compliant & DPF models)	Included
1.4 Silencing Modules (Only for SCR & Silencing Models)	Included
1.5 Oxidation Catalyst Modules (Only for Oxidation Catalyst Models)	Included
1.6 Standard ecoCUBE® Gaskets & Hardware	Included
2. Control and Dosing Assembly	Included
2.1 Control Panel – with embedded control, on-off switch, on-off status indicator light and power distribution. Ethernet connection for remote monitoring and troubleshooting. Dosing System – with automatic flow rate adjustment, system purge valve, air regulator, air pressure switch, check valves, overpressure regulator, injection valves and injection pumps.	Included
3. Insulation of each ecoCUBE® with 3” Mineral Wool insulation and metal cladding. Note: the insulation and cladding installed by SPI does not make the unit 100% “touch-safe”.	Included
4. 12-month parts & warranty	Included
5. Pre-Heat System	Optional
6. Air Compressor, Air Dryer and Oil Separator	Optional
7. Urea Storage Tank, Ancillary Pumps and Fill Station	Optional
8. Commissioning & Training	Included
9. Technical Support Services - (Number of Hours Specific to Formal Proposal)	Included

* actual bill of materials will vary, this has been included to provide a general overview of typical components included

Pre-Commissioning Checklist (Completed by Installation Contractor)

* Pre-Commissioning Instructions change frequently, please check with Safety Power for latest Revision.

INITIAL	ITEM DESCRIPTION
	Installation Correct as shown In layout drawings
	One support point is a fixed anchor attachment
	All other support points are sliding type in one or two directions
	Reactor is free to expand in both horizontal directions
	Reactor housing and enclosure insulation installed
	Injection lance installed in mixing tube with correct orientation of Injection spray nozzle
	Urea line connected
	Air line connected
	Urea and Air lines pressure tested and flushed.
	Urea line trace heating installed.
	Pressure Transmitter installed and connected
	Temperature Sensor Installed and connected
	NOx Sensor Installed and connected
	DC power connected
	Temperature sensors TC010, TC020 and TC030 wired to panel
	Pressure Transmitter sensors PR030, PR020, PR010 wired to panel
	NOx sensor NX010 wired to panel
	Engine load signal wired to panel
	No visible damage to components
	Interconnect wiring to control panel installed
	Urea supply line installed
	Urea Return line installed
	Urea Injection line installed
	Air supply line installed
	Air atomizer line installed
	No visible damage to components or tubing
	Engine fully commissioned and operational, (break-in performed), tuned for operation, running reliably without misfiring, excessive lube oil consumption etc.
	Engine available to run at specified loads (typically 40, 50,60,70,80,90,100% of full rated load

Comments, Clarifications & Customer Requirements

1. This proposal is based upon full load engine data.
2. The Urea used **shall be** 32.5% concentration. The dosing panel, tanks and lines with urea must be protected from freezing e.g. by heat tracing and insulating, locating the panel, tank & lines in an area that is maintained at a temperature above the freezing temperature.
3. Systems with diesel particulate filters (DPF) must be operated with ultra-low sulphur diesel only. In order to properly regenerate the DPF canisters the temperature must be above 350DegC (662DegF) for 30% of the engine operating time and greater than 40% engine load.
4. Maximum number of cold starts is 12 consecutive 10 minute or less idle sessions, which must be followed by a minimum of 2-hours of regeneration at the temperature and load noted above. Depending on the number of cold starts and other items relate to use of the system, Diesel Particulate Filters may require regular cleaning. The SPI system incorporates a virtual soot sensor which indicates the number of expected Run Hours Available (RHA) so that the operator is aware of when the next cleaning cycle is required. It is important that the operator monitor RHA to avoid high engine back pressure.
5. Unless expressly included in SPI's scope of supply the responsibility for allowing for thermal expansion of the products supplied by SPI is "by others".
6. Under no circumstances should the ecoCUBE® be placed downstream of a silencer with absorptive acoustical material.
7. A 4-20mA signal proportional to engine load must be provided and connected into ecoCUBE® control panel. Customer must provide the current transducer and current transformer for 1-phase.

■ Commissioning

SCR commissioning requires a customer supplied load bank to operate the generator at various load points and establish the controls load map. The customer should allow 4 hours per machine for the SCR load map to be established, 4 hours of testing and verifying SCR system operation, and where required, 1 hour for a third party witnessing of the SCR operation and performance.

■ Terms and conditions

This proposal is based upon Safety Power's Standard Terms and Conditions of Sale (please see section).

■ Proprietary Information

This document contains information proprietary to Safety Power. Your acceptance of it is acknowledgement of a confidential relationship between you and Safety Power with respect to this document. Safety Power requires that neither this document nor any information obtained therefrom is to be reproduced, transmitted, disclosed or used otherwise in whole or in part without the prior written authorization of Safety Power.

■ Typical Delivery Times

The delivery dates for system equipment shown below is from shipping point and do not include transit time. The scheduled delivery date will be adjusted, as necessary, to reflect the effects of additional work and delays in contract performance. The scheduled delivery date will be extended as soon as the actual effect of extra work and excused delays in contract performance can be determined.

Description	Delivery Date
System Drawings	4-6 weeks ARO (After receipt of order)
Equipment	12-16 weeks from drawing approval

Our Technical Guarantee

The system and catalytic material shall be warranted in accordance with the standard Performance & System Warranty.

Safety Power warrants the quality and suitability of the materials, design and construction of the supplies and services and their qualification for the application. Provided the design data is adhered to, Safety Power guarantees the output values as shown in Table 2 and the Performance & System Warranty, provided in a formal proposal.

The maximum allowed temperature entering the Catalyst is 950°F (for NO_x reduction). Above 950° F, the SCR catalyst activity can be degraded over time.

If the engine runs with an exhaust temperature below 570°F (450°F with the use of Ultra-low Sulphur Diesel @ 15ppm), the SCR control system will stop the injection of urea. This will prevent the formation of ammonium (bi) sulfate on the SCR catalyst surface. Ammonium bi-sulfate forms when ammonia (from urea) and sulfur (from the fuel) combine at exhaust temperature below 570°F.

The SCR Catalyst is warranted from defects for a period of **15,000 hours (5-years pro-rata)**, based in accordance with the operation manual. Any deficiencies in the supplies and services provided by Safety Power must be reported by the buyer in writing without delay. These deficiencies will be remedied to the exclusion of any further guarantee claims and rights, accordingly to our warranty statement and our standard terms and conditions. The supplied equipment, excluding the catalyst, is guaranteed for **12 months** starting from the date of commissioning and acceptance of the system but no longer than **18 months** after delivery or purchase order required ship date. This warranty is not transferable.

Standard Terms & Conditions of Sale

■ Application

These Standard Terms and Conditions apply to any sale of equipment, parts, materials and services (the “**Products**”) by Safety Power Inc. (“**SPI**”) to a SPI customer (the “**Customer**”) and the issuance of a Purchase Order by the Customer represents acceptance by the Customer of these Standard Terms and Conditions which therefore become an express condition of such sale.

■ Terms and Acceptance

Other than as described in the accepted Proposal or Quotation and this paragraph below, this document constitutes the entire agreement between SPI and the Customer in this transaction and supercedes all prior discussions, proposals, negotiations, representations and agreements, whether written or oral. Any additional or conflicting terms, whether or not material, shall not, in any manner, by implication, waiver, or otherwise, govern the relationship between SPI and the Customer. Any waiver, modification or amendment of these terms and conditions shall only be effective as against SPI if such waiver, modification or amendment is contained in a written instrument prepared or otherwise acknowledged in writing by SPI.

■ Delivery

Unless otherwise expressly agreed in writing, delivery of the Products will be made EX WORKS. SPI will use commercially reasonable efforts to adhere to any scheduled delivery dates (if purchased online, as contained in the email confirmation provided to the Customer for such Products); however, delays caused by reasons beyond SPI’s control shall extend the shipping dates for a period sufficient to permit SPI to ship. Changes in the delivery schedules requested by the Customer must be in writing and received by SPI at least two (2) days prior to the previously scheduled delivery dates. SPI is under no obligation to accept any change in delivery dates. In cases where the Customer requests SPI to arrange and charge for shipping, the Customer remains liable for any incidents which occur once the Products leave the EX WORKS point, this includes but is not limited to shipping incidents, lifting and hoisting incidents and associated personal injury or any other consequential damages that may be associated with such shipment.

■ Cancellations

Acceptance of Purchaser’s order shall be binding on the parties and cancellation, rescission, suspension, or modifications will be accepted only upon terms that will indemnify SPI against all losses and damages, and provide SPI with the profit that SPI would have earned on the sale of the product if Purchaser had not cancelled, rescinded, suspended or modified its order.

■ Force Majeure

SPI shall not be in any way responsible for or liable to the Customer for failure to deliver or perform or for delay in delivering or performing, due to causes beyond the reasonable control of SPI, including but not limited to acts of God, acts of civil or military authorities, fires, floods, epidemics, quarantine restrictions, war, riots, sabotage, explosion, revolution or the order or regulation of any government or agency thereof.

Standard Terms & Conditions of Sale

■ Purchase Price and Payment

Unless otherwise noted in the form of Proposal the Customer shall pay the full price for the Products within thirty (30) days of the date of the invoice for the Products received. A service charge of one and one-half (1 1/2%) percent per month is chargeable on all overdue accounts, to the extent permitted by applicable law. The prices quoted to the Customer are subject to change without notice from time to time with respect to any unshipped balance. If at anytime, in SPI's opinion, the financial condition of the Customer becomes impaired or unsatisfactory to SPI, or, inadequate to meet the obligations hereunder, the terms of payment may, at SPI's option, be revised or withdrawn, and SPI may require cash or other satisfactory security, before making further shipments to the Customer. In addition to any other legal remedy, if the Customer fails to fulfill the terms of payment, SPI may defer further delivery of Products hereunder or may, at its option cancel all further delivery of Products to the Customer.

■ Taxes

The Customer is responsible for all taxes, however designated, levied or based upon the purchase price for the Products, including without limitation any federal or State / provincial sales, excise or other taxes or amounts paid or payable by SPI in respect of the foregoing, exclusive, however, of taxes based upon SPI's net income.

■ Title and Security Interest

Title or ownership of the Products shall not pass to the Customer, notwithstanding delivery thereof, but shall remain vested in SPI until any unpaid balance of the purchase price of the Products is paid in full. To secure full payment of the purchase price of the Products, the Customer hereby grants to SPI, and SPI hereby reserves, a security interest in the Products and in all substitutions, replacements and additions thereto and the proceeds thereof.

■ Risk of Loss

The Customer assumes and shall bear the entire risk of loss of or damage to the Products from any cause whatsoever, except for the negligence of SPI or its personnel, upon acceptance of the Products by the designated Carrier at SPI's facilities and no loss or damage to the Products or any portion thereof shall relieve the Customer from its obligations herein.

■ Limited Warranty

SPI warrants the materials and workmanship of the Products strictly in accordance with the terms and conditions of the limited warranty statement that accompanies the individual Product, "**Product Warranties**". For the first end-user customer (the "Retail Customer"), you will find your limited warranty statement included with the applicable operating manuals and guides for each Product. Additional copies of such limited Product Warranties are available from SPI upon request.

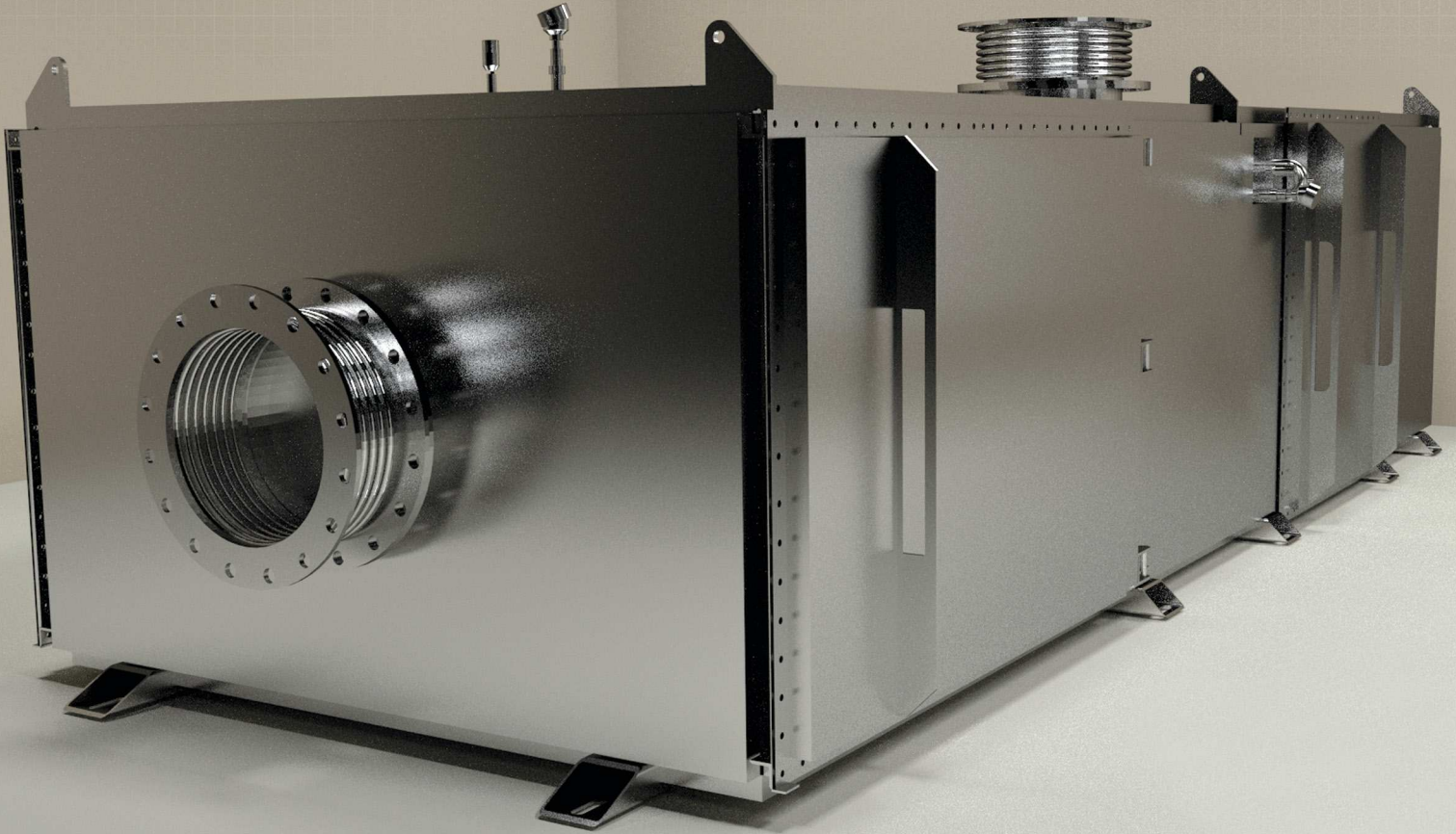
Products that have not been sold to a Retail Customer within three (3) years from the date of shipment of the Products as described on the invoice for such Products by SPI. SPI assumes no liability for loss or damage of any nature or kind in respect of the design, manufacture, use, performance or condition of the Products, whether arising out of or the use of the Products, whether or not defective.

Standard Terms & Conditions of Sale

IN NO EVENT SHALL SPI AND ITS DIRECTORS, OFFICERS, SHAREHOLDERS, EMPLOYEES, AGENTS OR ADVISORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES (EVEN IF SPI HAS BEEN ADVISED OF THE POSSIBILITY THEREOF) INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOSS OF INCOME, LOSS OF ANTICIPATED SALES, LOSS OF OPPORTUNITIES, BUSINESS INTERRUPTION, FAILURE TO REALIZE UNEXPECTED SAVINGS, DAMAGE TO PROPERTY, LOSS OF GOODWILL OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS OF ANY KIND OR ANY CLAIM AGAINST THE CUSTOMER BY A THIRD PARTY IRRESPECTIVE OF THE NATURE OF THE CAUSE OF ACTION BASED ON CONTRACT, NEGLIGENCE, STRICT LIABILITY, FUNDAMENTAL BREACH, FAILURE OF ESSENTIAL PURPOSE OR OTHERWISE WHETHER OR NOT SUCH SPI HAD ANY KNOWLEDGE, ACTUAL OR CONSTRUCTIVE, THAT THE CUSTOMER MIGHT INCUR SUCH DAMAGES.

Other than as may be contained in the specific Product Warranties, the limited warranty provided hereunder constitutes the only warranty of SPI in respect of the Products. Any other representations, warranties, guarantees and conditions either express or implied, statutory or otherwise, including implied warranties of merchantability or fitness for any particular purpose, intended or otherwise given, or those arising out of a course of dealing or usage of trade are expressly excluded by SPI.

ecoCUBE® with SCR, DPF, DOC & Silencer



Safety Power is the global innovator in emissions control for large scale diesel and natural gas engines.

The company manufactures the ecoCUBE® range of products that reduce NO_x, CO and Hydrocarbon emissions on engines from 500kW up to 20MW and beyond.

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While every attempt is made to ensure accuracy, this document does not constitute a warranty or performance guarantee. Any warranties or performance guarantees are made through a formal contract only.

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