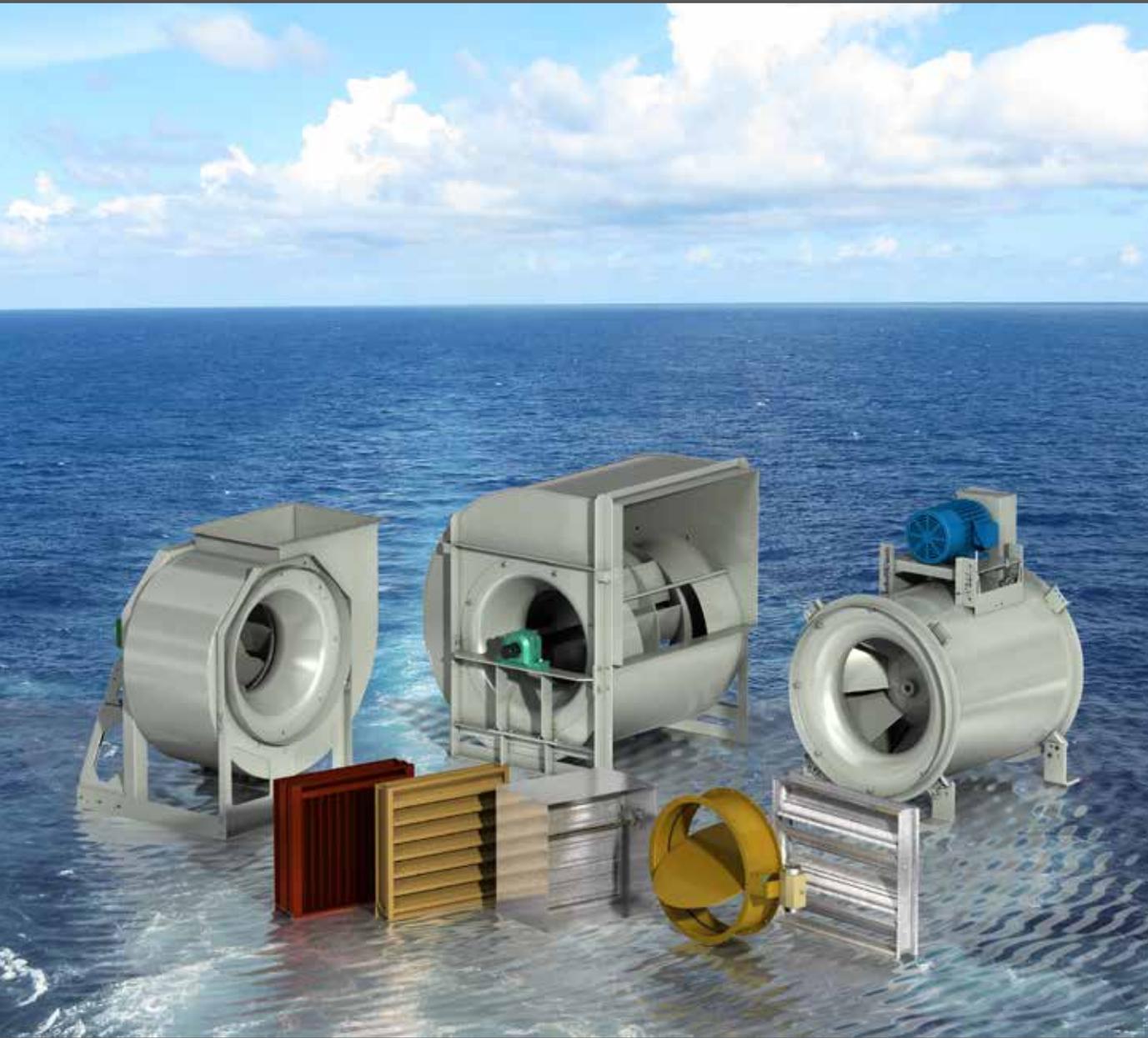


Marine Products

Dampers, Louvers, and Fans

• Selection • Construction • Performance



 **GREENHECK**
Building Value in Air.

February
2016



Greenheck dampers bring the same quality engineering and manufacturing that has earned Greenheck its position as an industry leader. Aggressive research and development has made Greenheck the best choice in the damper and louver industry. Greenheck has the most UL Classified dampers and the largest selection of AMCA Licensed dampers and louvers in the industry.



In-House Testing

State-of-the-art laboratory and testing facilities have always been important to Greenheck's ongoing business success. Greenheck has a laboratory facility devoted exclusively to development of damper and louver related products as well as testing to the latest versions of AMCA, ANSI, ASHRAE, UL, Miami-Dade County, USCG, and other industry standards of performance.



IMO Fire Damper Test

Greenheck built a steel bulkhead to test dampers to the IMO Fire Test Procedure Code (A.754). The dampers are tested to 1733°F (945°C) for 60 minutes.



Wind-Driven Rain & Water Penetration Testing

Our in-house wind-driven rain test chamber simulates the effects of a Class II hurricane at 100 mph wind speeds to test rain rejection while allowing air passage.



Air Test Chamber

Greenheck has on-site registered air performance test chambers to measure air volume and horsepower requirements at different pressure levels.

A Global Presence

Greenheck operates eight manufacturing locations, five national distribution centers, and three international distribution centers:

● Manufacturing

- Schofield, WI
- Shelby, NC
- Kings Mountain, NC
- Rocklin, CA
- Frankfort, KY
- Saltillo, Mexico
- Kunshan, China
- Bawal, India

● National Distribution

- Schofield, WI
- Rocklin, CA
- Dallas, TX
- Miami Lakes, FL
- Greensboro, NC

● International Distribution

- Mexico
- China
- India



Marine Dampers, Louvers, and Fans

A complete line of Fire, Combination Fire/Smoke Dampers, Louvers, and Fans can be used in marine and offshore ventilation systems such as:



- *Ferries* • *Ships* • *Tug boats* • *Offshore oil rigs* • *River Boat casinos* • *Cruise ships*



Greenheck is the first US manufacturer with United States Coast Guard Class A-60 division approval on Combination Fire/Smoke and Fire Dampers. The Marine dampers were tested at Underwriters Laboratories (UL) in accordance with International Maritime Organization's (IMO) Fire Test Procedure code. They are also American Bureau of Shipping (ABS) approved. Performance data testing was conducted in accordance with AMCA Standard 500-D.

A complete line of Wind-Driven Rain, Drainable and Combination Louvers are available for the severe and corrosive environments on ships. Wind-Driven Rain models offer excellent rain resistance while Drainable blade louvers additionally offer outstanding resistance to water penetration. Combination louver models can be opened or closed as desired.

Greenheck's high standards of quality and performance provides assurance for fans in marine environment applications. Greenheck has a versatile line of heavy duty fans to meet many different performances, configurations, and situation requirements. Compact designs, efficient performance, and reliable operation are what Greenheck provides in fans for marine duty environments.



Greenheck marine dampers are approved for:

- United States Coast Guard (USCG) type approved A-60 fire rating
Approval Number 164.139/0007/0
- United States/European Union
MRA Listed (Ships wheel)
- ABS Type Approval Design Assessment (PDA)
Approval Number 06-HS154367-PDA



1408/05



IMO-310/SSIMO-310 Fire Dampers

- USCG type approved fire rating: A60 for all sizes
- Maximum Velocity: 2000 fpm (10.2 m/s)
- Maximum Pressure: 4 in. wg (1kPa)

IMO-311/SSIMO-311 Combination Fire/Smoke Dampers

- USCG type approved fire rating: A60 for single section sizes; A30 for multi-section sizes
- Maximum Velocity: 4000 fpm (20.3 m/s)
- Maximum Pressure: 4 in. wg (1 kPa)
- Leakage Class: 3 cfm/ft² @ 1 in. wg
(35 cmh/m² @ .25 kPa)

IMO-310/ SSIMO-310	Actual Size in. (mm)	Weight lb. (kg)
	8 x 8 (203 x 203)	11 (5)
	10 x 10 (254 x 254)	14 (6.4)
	12 x 12 (305 x 305)	17 (7.7)
	18 x 18 (457 x 457)	28 (12.7)
	20 x 20 (508 x 508)	31 (14)
	24 x 24 (610 x 610)	39 (17.7)
	30 x 30 (762 x 762)	52 (23.6)
	32 x 32 (813 x 813)	58 (26.3)
	64 x 32 (1626 x 813)	96 (43.5)

IMO-311/ SSIMO-311	Actual Size in. (mm)	Weight lb. (kg)
	8 x 8 (203 x 203)	16 (7.3)
	10 x 10 (254 x 254)	19 (8.6)
	12 x 12 (305 x 305)	22 (10)
	18 x 18 (457 x 457)	33 (15)
	20 x 20 (508 x 508)	36 (16.3)
	24 x 24 (610 x 610)	44 (20)
	30 x 30 (762 x 762)	57 (26)
	32 x 32 (813 x 813)	63 (28.5)
	64 x 32 (1626 x 813)	103 (46.7)

STD = Standard OPT = Optional		IMO-310	SSIMO-311	IMO-311	SSIMO-311
Frame	Galvanized Steel Channel Frame	STD	-	STD	-
	304SS Channel Frame	-	STD	-	STD
Blade	Airfoil	STD	-	STD	-
	304SS Airfoil	-	STD	-	STD
Closure Temperature	165°F (74°C)	STD	STD	STD	STD
	212°F (100°C)	OPT	OPT	OPT	OPT
Minimum Size	in. (mm)	8 x 6 (203 x 152)			
Maximum Size	in. (mm)	32 x 32 (813 x 813)			
Max. Multi Section Size	in. (mm)	64 x 32 (1626 x 813)			

Volume Control Dampers

Volume control dampers regulate the flow of air in a HVAC system. They can be used as a positive shutoff or for automatic control. Models VCD-23 and SEVCD-23 have 3V blades. Models VCD-33 and SEVCD-33 have airfoil blades. A wide range of electric and pneumatic actuators are available.



VCD-23/SEVCD-23

- Maximum Temperature: 250°F (121°C)
- Maximum Velocity: 3000 fpm (15.2 m/s)
- Maximum Pressure: 5 in. wg (1.2 kPa)
- Leakage: Class 1A @ 1 in. wg (.25 kPa)
Class 1 @ 4-10 in. wg (1 - 2.5 KPa)

VCD-33/SEVCD-33

- Maximum Temperature: 250°F (121°C)
- Maximum Velocity: 4000 fpm (20.3 m/s)
- Maximum Pressure: 10 in. wg (2.5kPa)
- Leakage: Class 1A @ 1 in. wg (.25 kPa)
Class 1 @ 4-10 in. wg (1 - 2.5 KPa)

STD=Standard OPT=Optional		VCD-23	VCD-33	SEVCD-23	SEVCD-33
Blade Profile	3V	STD		STD	
	Airfoil		STD		STD
Material	Galvanized	STD	STD		
	304 stainless steel	OPT	OPT		
	316 stainless steel			STD	STD
Frame Gauge in. (mm)	16 (1.5)	STD	STD	STD	STD
	12 (2.8)	OPT	OPT		
Blade Seals	TPE	STD	STD	STD	STD
	Silicone	OPT	OPT	OPT	OPT
Jamb Seals	304 stainless steel	STD	STD		
	316 stainless steel			STD	STD
Bearings	Synthetic	STD	STD		
	Bronze	OPT	OPT		
	304 stainless	OPT	OPT		
	316 stainless			STD	STD
Axles/ Linkage Material	Steel	STD	STD		
	304 stainless steel		OPT		
	316 stainless steel			STD	STD
Linkage Material	Steel	STD	STD		
	304 stainless steel	OPT	OPT		
	316 stainless steel			STD	STD
Sizing in. (mm)	Minimum size	6x6 (152x152)	6x6 (152x152)	6x6 (152x152)	6x6 (152x152)
	Maximum single section size	48x74 (1219x1880)	60x74 (1524x1880)	48x74 (1219x1880)	48x74 (1219x1880)
	Maximum multi section size	Unlimited	Unlimited	Unlimited	Unlimited

Industrial control dampers are a heavy duty flanged damper with various blade styles. They are designed to control airflow and provide shutoff in HVAC or industrial process control system. Bubble tight dampers are designed to meet the requirement for zero leakage.



HCD/HCDR Series

- Maximum Temperature: 1000°F (538°C)
- Maximum Velocity: 6400 fpm (32.5 m/s)
- Maximum Pressure: 45 in. wg (11.2 kPa)



HBTR Series

- Bubble tight dampers
- Maximum Temperature: 1000°F (538°C)
- Maximum Velocity: 6400 fpm (32.5 m/s)
- Maximum Pressure: 20 in. wg (5kPa)

STD = Standard OPT = Optional	Maximum Pressure in. wg (kPa)	Maximum Velocity ft/min (m/s)	Maximum Temperature °F (°C)		Material				
			Standard	Optional	Galvanized Steel	Aluminum	Painted Steel	304SS	316SS
HCD-120	8.5 (2.1)	3000 (15.2)	200 (93)	400 (204)	STD	-	OPT	OPT	OPT
HCD-130	8.5 (2.1)	4000 (20.3)	250 (121)	400 (204)	STD	-	OPT	OPT	OPT
HCD-135	8.5 (2.1)	4000 (20.3)	250 (121)	-	STD	-	-	OPT	OPT
HCD-140	6 (1.5)	6000 (30.5)	250 (121)	-	STD - FRAME	STD - BLADE	OPT	OPT	OPT
HCD-220	15 (3.7)	4000 (20.3)	250 (121)	600 (315)	STD	-	OPT	OPT	OPT
HCD-230	15 (3.7)	5000 (25.4)	250 (121)	600 (315)	STD	-	OPT	OPT	OPT
HCD-240	15 (3.7)	5000 (25.4)	250 (121)	-	STD - FRAME	STD - BLADE	-	OPT	OPT
HCD-330	25 (6.2)	5000 (25.4)	250 (121)	600 (315)	STD	-	OPT	OPT	OPT
HCD-430	35 (8.7)	6000 (30.5)	250 (121)	600 (315)	STD	-	OPT	OPT	OPT
HCD-530	45 (11.2)	6000 (30.5)	250 (121)	600 (315)	STD	-	OPT	OPT	OPT
HCDR-050	6 (1.5)	4000 (20.3)	250 (121)	-	STD	-	OPT	OPT	OPT
HCDR-150	6 (1.5)	4000 (20.3)	250 (121)	400 (204)	-	-	STD	OPT	OPT
HCDR-250	13. (3.4)	5150 (26.2)	250 (121)	600(315)	-	-	STD	OPT	OPT
HCDR-350	20 (5)	6400 (32.5)	250 (121)	1000 (538)	-	-	STD	OPT	OPT
HCDR-351	20 (5)	6500 (33)	250 (121)	400 (204)	-	-	STD	OPT	OPT
HBTR-151	10 (2.5)	3900 (19.8)	250 (121)	-	-	-	STD	OPT	OPT
HBTR-451	10 (2.5)	6500 (33)	250 (121)	-	-	-	STD	OPT	OPT
HBTR-551	30 (7.5)	6500 (33)	250 (121)	-	-	-	STD	OPT	OPT

Combination Fire Smoke Dampers

Combination Fire Smoke Dampers performs the function of a fire damper and a smoke damper. They are qualified to UL 555 as a fire damper and UL 555S as a smoke damper.



FSD Series

- UL 555S Leakage Class I or II
- UL 555 1 1/2 hour fire resistance rating
- Maximum Velocity: 4000 fpm (20.3 m/s)
- Maximum Pressure: 8 in. wg (2 kPa)
- 3V or Airfoil blade styles available

FSDR Series

- UL 555S Leakage Class I or II
- UL 555 1 1/2 hour fire resistance rating
- Maximum Velocity: 2000 fpm (10.2 m/s)
- Maximum Pressure: 4 in. wg (1 kPa)

STD = Standard OPT = Optional		FSD-311	FSDR-511	SEFSD-211	SEFSDR-511	SSFSD-211	SSFSDR-511
Frame	Galvanized Steel	STD	STD	-	-	-	-
	304SS	-	-	-	-	STD	STD
	316SS	-	-	STD	STD	-	-
Blade	3V	STD	-	STD	-	STD	-
	Airfoil	-	-	-	-	-	-
	Round	-	STD	-	STD	-	STD
Closure Temperature	165°F (74°C)	STD	STD	STD	STD	STD	STD
	212°F (100°C)	OPT	OPT	OPT	OPT	OPT	OPT
	250°F (121°C)	OPT	-	OPT	-	OPT	-
	350°F (177°C)	OPT	-	OPT	OPT	OPT	OPT
Closure Device	Fusible Link	OPT	STD	OPT	STD	OPT	STD
	RRL	STD	OPT	STD	OPT	STD	OPT
	TOR	OPT	OPT	OPT	OPT	OPT	OPT
	PRV	OPT	OPT	OPT	OPT	OPT	OPT
Minimum Size	in. (mm)	8 x 6 (203 x 152)	6 (152)	8 x 6 (203 x 152)	6 (152)	8 x 6 (203 x 152)	6 (152)
Maximum Size	in. (mm)	32 x 50 (813 x 1270)	24 (610)	24 x 30 (610 x 762)	24 (610)	24 x 30 (610 x 762)	24 (610)
Max. Multi Section Size	in. (mm)	Horizontal 144 x 96 (3658 x 2438) Vertical 128 x 100 (3251 x 2540)	NA	Horizontal 48 x 30 (1219 x 762) Vertical 88 x 72 (2235 x 1829)	NA	Horizontal 48 x 30 (1219 x 762) Vertical 88 x 72 (2235 x 1829)	NA

For more models, go to www.greenheck.com.

For the extreme conditions of maritime applications, Greenheck offers a complete line of Wind-Driven Rain Louvers to meet your requirements. Wind-Driven Rain louvers offer the best resistance to water penetration.

Models EVH, EHH

FEATURES AND BENEFITS

- All Greenheck Wind-Driven Rain Louvers are subjected to the more stringent 50 mph wind/8 inches rain per hour test
- Vertical blade models are the most effective in minimizing water penetration through openings that are sensitive to wind-driven rain in a building's exterior wall
- Horizontal blade models offer excellent performance against wind-driven rain, along with the aesthetically pleasing look of a horizontal blade
- Greenheck's Wind-Driven Rain Louvers are available in both vertical (EVH) and horizontal (EHH) blade configurations
- All Greenheck Wind-Driven Rain Louvers are AMCA certified for Water Penetration, Air Performance and Wind-Driven Rain



EVH-501



EHH-501

RAIN RESISTANT EXTRUDED LOUVERS		EVH-301	EVH-401	EVH-501	EVH-501D	EVH-602	EVH-660D	EHH-401	EHH-501	EHH-601
FEATURES & PERFORMANCE										
Blade	Style	RR	RR	RR	RR	RR	RR	RR	RR	RR
Frame	Depth (inches)	3	4	5	5	6	6	4	5	6
Blade	Thickness (inches)	0.063	0.081	0.081	0.081	0.081	0.095	0.081	0.081	0.081
Frame	Thickness (inches)	0.050	0.081	0.060	0.063	0.081	0.063	0.081	0.081	0.081
Free Area (48 x 48)	Square Feet	8.40	6.38	8.71	8.77	5.88	7.29	6.72	6.80	7.58
Free Area (48 x 48)	%	52.5	39.9	54.4	54.8	36.8	45.6	42.0	42.5	47.4
Free Area Intake Velocity @ Beginning Point of Water Penetration (Ft/Min)		1250	1250	1250	1250	1250	1250	1250	1250	1250
Pressure Drop @ 6000 CFM Intake Velocity (48x48) (in. wg)		0.07	0.16	0.08	0.08	0.09	0.10	0.16	0.15	0.15
Maximum Intake Volume Flow Rate (48 x 48) Unit CFM		10500	7975	10888	11077	7525	9112	8400	8500	9475
Exhaust Volume Flow Rate @ 0.15 in. wg (cfm)		8794	5897	8190	8371	7626	6602	5982	5998	6091

RR = Rain Resistant



Greenheck certifies that the models shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance, water penetration, and wind-driven rain ratings for models: EVH-301, EVH-401, EVH-501, EVH-501D, EVH-602, EVH-660D, EHH-401, EHH-501 and EHH-601.

	Airflow (cfm)	Free Area Velocity (fpm)	Core Area Velocity (fpm)	Wind Velocity – 29 mph Rainfall – 3 in./hr. ³		Wind Velocity – 50 mph Rainfall – 8 in./hr. ³	
				Effectiveness	Classification	Effectiveness	Classification
EVH-301	14818	1764	993	99.3%	A	-	-
	14448	1720	968	-	-	99.6%	A
EVH-401	7477	1172	685	99.3%	A	-	-
	4294	673	399	-	-	99.3%	A
EVH-501	14678	1685	991	100.0%	A	-	-
	13066	1500	882	-	-	99.3%	A
EVH-501D	14905	1682	989	99.8%	A	-	-
	14692	1658	975	-	-	99.9%	A
EVH-602	10806	1795	981	99.9%	A	-	-
	10662	1771	968	-	-	100.0%	A
EVH-660D	13202	1811	984	100.0%	A	-	-
	13202	1811	984	-	-	100.0%	A
EHH-401	9281	1381	864	99.9%	A	-	-
	4200	625	391	-	-	99.0%	A
EHH-501	8350	1228	776	99.1%	A	-	-
	7351	1081	683	-	-	99.2%	A
EHH-601	10544	1391	763	99.8%	A	-	-
	9338	1232	676	-	-	99.2%	A

³Wind Driven Rain Penetration Classes	
Class	Effectiveness
A	100%-99%
B	98.9%-95%
C	94.9%-80%
D	Below 80%

NOTES: Based on louver size 48 in. x 48 in. ¹Core area is the open area of the louver face (face area less louver frames). Core area velocity is the airflow velocity through the core area of the louver.

Greenheck offers a complete line of Drainable Blade Louvers that offer outstanding resistance to water penetration.

Models ESD, EDD, EHM

FEATURES AND BENEFITS

- A drain gutter is located on each blade of ESD models, capturing rain water and channeling it to louver jamb members, where it then flows down integral downspouts to the sloped sill and drains away from the louver
- Models ESD-435 and ESD-635 offer 35° blades and increased free area without compromising water penetration performance
- Model EDD is a dual drainable blade model with a second drain gutter to further catch water
- Model EHM offers a recessed mullion design for continuous blade appearance



ESD-635



EDD-601

STATIONARY DRAINABLE EXTRUDED LOUVERS		ESD-202	ESD-403	ESD-435	ESD-603	ESD-635	EDD-401	EDD-601	EHM-601
FEATURES & PERFORMANCE									
Blade	Style	D	D	D	D	DD	DD	DD	DD
Frame	Depth (inches)	2	4	4	6	6	4	6	6
Blade	Thickness (inches)	.063	.081	.081	.081	.081	.081	.081	.081
Frame	Thickness (inches)	.063	.081	.081	.081	.081	.081	.081	.081
Free Area (48 x 48)	Square Feet	6.01	8.00	8.92	8.36	9.41	8.21	8.58	7.91
Free Area (48 x 48)	%	37.6	50.0	55.8	52.3	58.8	51.4	51.3	49.4
Free Area Intake Velocity @ Beginning Point of Water Penetration (Ft/Min)		1058	1007	989	1027	1077	992	1107	1065
Pressure Drop @ 6000 CFM Intake Velocity (48x48) (in. wg)		0.15	0.08	0.06	0.08	0.05	0.08	0.08	0.09
Maximum Intake Volume Flow Rate (48 x 48) Unit CFM		6369	8056	8822	8586	10134	8154	9088	8424
Exhaust Volume Flow Rate @ 0.15 in. wg (cfm)		5963	8188	9219	8215	9984	8329	8072	6577

D = Drainable DD = Dual Drainable

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The AMCA Certified Ratings Seal applies to air performance and water penetration ratings for models: ESD-202, ESD-403, ESD-435, ESD-603, ESD-635, EDD-401, EDD-601 and EHM-601.

Combination louvers incorporate both stationary and adjustable blades, allowing the louver to be opened or closed as desired. The louver appearance does not change when the adjustable damper blade is closed as stationary blades maintain their position.

Models EAC, EACA

FEATURES AND BENEFITS

- Linkage is concealed
- Four and six inch frame depths
- Stainless steel jamb seals
- Electric or pneumatic actuators

COMBINATION EXTRUDED LOUVER/DAMPERS		EAC-401	EAC-601	EACA-601	EACA-601D
FEATURES & PERFORMANCE					
Blade	Style	DA	DA	DAF	DAF
Frame	Depth (inches)	4	6	6	6
Blade	Thickness (inches)	.081	.081	.081	.081
Frame	Thickness (inches)	.125	.125	.125	.125
Free Area (48 x 48)	Square Feet	6.34	7.41	7.68	7.27
Free Area (48 x 48)	%	39.6	46.3	48.0	45.4
Free Area Intake Velocity @ Beginning Point of Water Penetration (Ft/Min)		1192	1020	1221	1125
Pressure Drop @ 6000 CFM Intake Velocity (48x48) (in. wg)		0.15	0.11	0.06	0.06
Maximum Intake Volume Flow Rate (48 x 48) Unit CFM		7557	7558	9377	8179
Exhaust Volume Flow Rate @ 0.15 in. wg (cfm)		6050	7212	9586	9837

DA = Drainable Adjustable, DAF = Drainable Airfoil



EAC-601



EACA-601D

Greenheck certifies that the models shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to air performance and water penetration ratings for models: EAC-401, EAC-601, EACA-601 and EACA-601D.

Greenheck has a full line of fans that are suitable for use in marine duty environments. Fans are designed and built for strength, long life, low maintenance, and corrosion resistance. Greenheck provides heavy duty quality products with a variety of options for construction materials, superior powder coatings for marine environments and a full line of accessories.

Quality from design through manufacturing and inspection

Using state of the art design, testing and measuring equipment, Greenheck leads the HVAC industry in providing reliable products with superior performance and construction.

- Finite element analysis, strain gauge testing, computational fluid dynamics, product life testing, and testing in AMCA registered sound and air performance labs are some of the methods used to design and verify structural integrity and performance.
- Belt driven fans have shaft bearings with a life in excess of L(10) 80,000 hours (average life of 400,000 hours). Optional L(10) 200,000 hours bearing life available.
- Electrostatically applied powder coatings provide even coverage on all surfaces of the fan components. These coatings are developed and tested to withstand the harshest chemicals and environments.
- All fans are test run at the factory to ensure proper operation. Amp readings are taken on motors and each assembled fan must pass a stringent vibration requirement. Electrical test results and vibration test reports are maintained as a permanent record for each fan.



Motors for the most severe applications

Greenheck has motors that are designed and approved for use in marine applications. Marine duty construction options that are available on motors from Greenheck include:

- IEEE 45 and USCG Marine Duty
- Marine Duty API RP14F for Offshore Platforms
- NEMA MG1-1.26.6 Waterproof Specification
- IEEE 841 Standard for Petroleum and Chemical Industry - Severe Duty
- NEMA Premium Efficiency
- Inverter Duty



Quick Selection

Models	SCROLL TYPE				INLINE TYPE				
	AFDW	CSW	BIDW	IPA	AX	TBI-CA	TBI-FS	QEI	QEID
Volume Range (cfm)	200-370,000	100-230,000	200-360,000	50-140,000	50-115,000	1,500-96,000	3,000-77,000	2,000-95,000	1,000-96,000
Max Ps (in. wg)	15	22	15	31	5	3.25	4.5	8.5	9.5
Certifications									
AMCA Air	YES	YES	YES	YES	YES	YES	YES	YES	YES
AMCA Sound	YES	YES	YES		YES		YES	YES	YES
UL 705 Electrical	OPT	OPT	OPT		OPT	OPT	OPT	OPT	OPT
UL Emergency Smoke		OPT			OPT		OPT	OPT	
Drive Type	Belt	Belt/Direct	Belt	Belt	Direct	Belt	Belt	Belt	Direct
Construction									
Coated Steel Casing	STD	STD	STD	STD	STD	STD	STD	STD	STD
316 Stainless Steel – Airstream		OPT							
Aluminum Prop Wheel	OPT	OPT	OPT	OPT	STD	STD		OPT	OPT
Aluminum – Entire	OPT	OPT	OPT		OPT	OPT			

Single Width Single Inlet Centrifugal

Model CSW

Versatile airfoil or backward inclined wheels in a centrifugal model offers a wide range of configurations and arrangements. Ventilation applications include clean air, emergency smoke exhaust, or contaminated process air and high temperature exhaust. Available in four classes of construction and eight different discharge positions.



Double Width Double Inlet Centrifugal Models AFDW and BIDW

Provides high volume capacities and pressure in a compact housing. Usually used for relatively clean air applications with unducted inlets such as built-up or custom air handlers.



High Pressure Blower Model IPA

Radial bladed wheel provides a full range of volume capabilities with higher pressures than centrifugal wheels. Heavy gauge materials are used throughout for increased strength and durability. Used in applications that have clean air, process exhaust or high temperature ventilation.



High Performance Axial, Direct Drive Model AX

Compact axial fan with a high efficiency airfoil blade designed to decrease energy requirements and lower sound levels. Blade pitch can be adjusted for onsite balancing. Direct drive construction reduces maintenance. Casing options include standard length, shorter casing for wall mounting and also a bolt-on vane section for increased pressure capabilities.



Medium Pressure Axial, Belt Drive Model TBI

TBI series of fans features two different impeller types; cast aluminum and fabricated steel. Cast aluminum hub and blades provide spark resistant construction and manual adjustability for on-site balancing. Heavy duty fabricated steel impellers are used for applications that include elevated airstream temperatures or smoke exhaust.



Mixed Flow, Inline Model QEI and QEID

Mixed flow fans have the advantage of both high efficiency and low sound levels in an inline fan. Integral air straightening vanes and venturi inlet improve the fan performance.



Full line of accessories

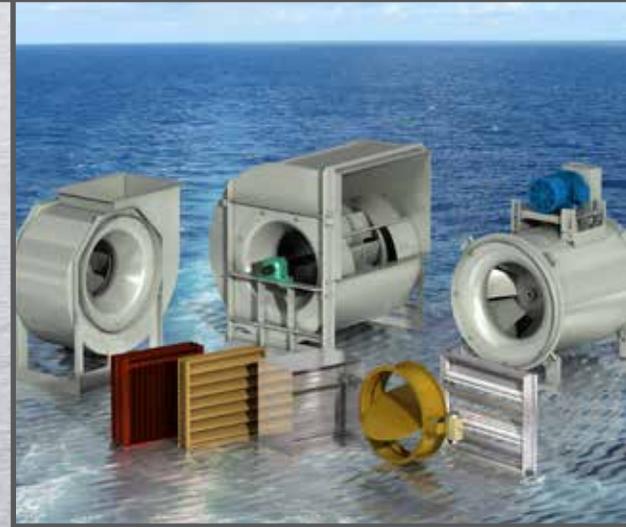
All models have as available options:

- Guarding for inlets, outlets and drive components
- Silencers to reduce noise (AX, TBI, QEI, QEID)
- Isolators to reduce vibration transmission
- Inlet bells
- Companion flanges

The Greenheck Advantage

Complete and Innovative Dampers & Louvers Product Offering!

- Commercial & Industrial Control Dampers
- Fire, Smoke, and Combination Fire Smoke Dampers
- Ceiling Radiation Dampers
- Backdraft Dampers
- Pressure Relief Dampers
- Manual Balancing Dampers
- Access Doors
- Marine Dampers
- Severe Environment Dampers
- Industrial Smoke Damper
- Insulated Thermally Broken Dampers
- Mechanical and Architectural Louvers
- Miami-Dade Louvers
- Wind-Driven Rain Louvers
- Thinline Louvers
- Sightproof Louvers
- Adjustable Louvers
- Acoustical Louvers
- Fabricated Louvers



- Combination Louver/Dampers
- Louver Penthouses
- Architectural Sunshades
- Equipment Screens
- Architectural Grilles
- Brick Vents
- Specialty Shapes

Top Quality Ventilation... Centrifugal Fan Product Offering!

- Material Handling
- Industrial Process
- Paint Booths
- Emergency Smoke Exhaust
- Marine Duty
- Tunnel Ventilation
- Grease Exhaust
- Laboratory Fume Exhaust Systems
- Air Handlers
- High Temperature
- General Ventilation



Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Specific Greenheck product warranties are located on greenheck.com within the product area tabs and in the Library under Warranties.



Prepared to Support Green Building Efforts

