

Standby generators liquid-cooled EGENX series



Gas engine generator sets

Continuous standby power rating

- EGENX22—22 kW
- EGENX27—27 kW
- EGENX32—32 kW
- EGENX38—38 kW
- EGENX48—48 kW

Aluminum enclosure as standard.

Standard features and equipment

- Multilingual controller
- Two-line LCD digital screen indicator, with external window for quick status
- Efficient rated synchronous 1800 rpm
- Lower rpm isochronous electronic governor
- Closed coolant recovery system
- Smart battery charger

- UV/ozone-resistant hoses
- $\pm 1\%$ voltage regulator
- Low oil pressure shutdown
- Low coolant level auto-shutdown
- Exercise time
- Vibration isolated from mounting base
- Oil drain extension
- Fan and belt guards
- Enclosed critical grade muffler
- Eaton's molded-case circuit breaker technology
- Operating temperature rise 120 °C above a 40 °C ambient
- NEMA® rated Class H insulation
- Natural gas or liquid propane fuel (all field convertible)
- 5-year limited warranty ①
- Meets EPA emissions regulations ②
- UL® 2200 Listed

Enclosure

- Aluminum corrosion-proof for all units
- Quiet test for low noise level exercise mode
- Rodent-proof construction
- Easy access for service maintenance
- Sound-attenuated acoustical enclosure
- Small, compact, eye appealing design

System overview

- Complete backup power system coupled with Eaton's full line of automatic transfer switches
- Exclusive national Eaton Certified Contractor Network (ECCN) contractors for residential and light commercial installation, maintenance, and service
- Local sales expertise and round-the-clock telephone pre/post-sales technical support

① U.S. and Canada. 3-year international warranty only.

② 22 and 27 kW models suitable for CA/MA. 32 and 38 kW models not suitable for CA/MA.

EATON

Powering Business Worldwide

Engineering specifications

Table 1. Catalog number EGENX22, 27, 32, 38, and 48 kW

Description	Specification
Generator	
Type	Synchronous
Rotor insulation class	H (22 and 27 kW) F (32, 38 and 48 kW)
Stator insulation class	H
Telephone interference factor (TIF)	<50
Alternator output leads single-phase	4-wire
Alternator output leads three-phase	6-wire
Bearings	Sealed ball
Coupling	Flexible disc
Excitation system	Direct
Voltage regulation	
Type	Electronic
Sensing	Single-phase
Regulation	±1%
Electrical system	
Battery charge alternator	12 V, 30 A
Static battery charger	2.5 A
Recommended battery (not included)	Group 26 (22, 27, 32, and 38 kW) Group 24F (48 kW), 525 CCA
Rated synchronous RPM	1800

Table 2. Engine 22, 27, 32, and 38 kW

Description	Specification
Model	In-line
Cylinders	4
Displacement (liters)	2.4
Bore (in/mm)	3.41/86.5
Stroke (in/mm)	3.94/100
Compression ratio	9.5:1
Intake air system	Naturally aspirated (22 and 27 kW) Turbocharged/aftercooled (32 and 38 kW)
Lifter type	Hydraulic

Table 3. Engine 48 kW

Description	Specification
Model	V-type
Cylinders	8
Displacement (liters)	5.4
Bore (in/mm)	3.55/90.2
Stroke (in/mm)	4.17/105.9
Compression ratio	9:1
Intake air system	Naturally aspirated
Lifter type	Hydraulic

Table 4. Engine Systems 2

Description	Specification
Lubrication system	
Oil pump type	Gear
Oil filter type	Full flow spin-on cartridge
Crankcase capacity (qt/l)	4/3.8 (22, 27, 32, and 38 kW) 6/5.7 (48 kW)
Cooling system	
Type	Closed
Water pump	Belt driven
Fan speed (rpm)	1980—22 and 27 kW 1500—32 and 38 kW 1954—48 kW
Fan diameter (in/mm)	17.7/449.6 (25 and 30 kW) 22/558.8 (36, 45, and 60 kW)
Fan mode	Pusher (22 and 27 kW) Puller (32, 38, and 48 kW)
Fuel system	
Fuel type	Natural gas, propane vapor
Carburetor	Down draft
Secondary fuel regulator	Standard
Fuel shut-off solenoid	Standard
Operating fuel pressure	5–14-inch water column/9–26 mm HG

Table 5. Power output voltage/kW—60 Hz

Size (kW)	Voltage / phase / pf	Liquid propane (gaseous)		Natural gas		CB size (both)
		kW	Amperes	kW	Amperes	
22	120/240 V, single-phase, 1.0 pf	22	92	22	92	100
	120/208 V, three-phase, 0.8 pf	22	76	22	76	80
	120/240 V, three-phase, 0.8 pf	22	66	22	66	80
27	120/240 V, single-phase, 1.0 pf	27	113	25	104	125
	120/208 V, three-phase, 0.8 pf	27	94	25	87	100
	120/240 V, three-phase, 0.8 pf	27	81	25	75	90
32	120/240 V, single-phase, 1.0 pf	32	133	32	133	150
	120/208 V, three-phase, 0.8 pf	32	111	32	111	125
	120/240 V, three-phase, 0.8 pf	32	96	32	96	100
	277/480 V, three-phase, 0.8 pf	32	48	32	48	60
38	120/240 V, single-phase, 1.0 pf	38	158	38	158	175
	120/208 V, three-phase, 0.8 pf	38	132	38	132	150
	120/240 V, three-phase, 0.8 pf	38	114	38	114	125
	277/480 V, three-phase, 0.8 pf	38	57	38	57	60
48	120/240 V, single-phase, 1.0 pf	48	200	48	200	200
	120/208 V, three-phase, 0.8 pf	48	167	48	167	175
	120/240 V, three-phase, 0.8 pf	48	144	48	144	150
	277/480 V, three-phase, 0.8 pf	48	72	48	72	80

Table 6. Surge capacity in amperes

Size (kW)	Voltage / phase	Voltage dip at <0.4 pf	
		15%	30%
22	120/240 V, single-phase	55	135
	120/208 V, three-phase	40	92
	120/240 V, three-phase	35	80
27	120/240 V, single-phase	62	170
	120/208 V, three-phase	70	120
	120/240 V, three-phase	61	103
32	120/240 V, single-phase	75	180
	120/208 V, three-phase	87	210
	120/240 V, three-phase	75	182
	277/480 V, three-phase	36	87
38	120/240 V, single-phase	75	180
	120/208 V, three-phase	87	210
	120/240 V, three-phase	75	182
	277/480 V, three-phase	36	87
48	120/240 V, single-phase	85	195
	120/208 V, three-phase	90	218
	120/240 V, three-phase	78	189
	277/480 V, three-phase	36	87

Table 7. Fuel consumption

Size (kW)		Natural gas		Liquid propane (gaseous)		
		(ft ³ /hr)	(m ³ /hr)	(gal/hr)	(l/hr)	(ft ³ /hr)
22	Exercise cycle	42	1.2	0.44	1.7	16
	25% of rated load	100	2.8	1.1	4.2	40
	50% of rated load	190	5.4	2.1	7.8	75
	75% of rated load	255	7.2	2.8	10.5	101
27	Exercise cycle	316	9	3.4	13	125
	25% of rated load	42	1.2	0.44	1.7	16
	50% of rated load	108	3.1	1.2	4.5	43
	75% of rated load	197	5.6	2.1	8.1	78
32	Exercise cycle	287	8.2	3.1	11.8	114
	25% of rated load	359	10.2	3.9	14.8	143
	50% of rated load	79	2.2	0.8	3.2	30
	75% of rated load	144	4.1	1.7	6.3	60
38	Exercise cycle	226	6.4	2.7	10.3	97
	25% of rated load	298	6.4	3.7	13.9	132
	50% of rated load	375	10.6	4.6	17.5	166
	75% of rated load	437	12.4	5.2	19	185
48	Exercise cycle	83	2.3	0.9	3.2	31
	25% of rated load	162	4.6	1.7	6.6	62
	50% of rated load	255	7.2	2.9	10.8	103
	75% of rated load	345	9.8	4	15	142
48	Exercise cycle	437	12.4	5.2	19	185
	25% of rated load	95	2.7	1	3.9	38
	50% of rated load	204	5.8	2.16	8.5	82
	75% of rated load	392	11.1	4.14	15.7	151
48	Exercise cycle	547	15.5	5.8	22.8	220
	100% of rated load	756	21.5	7.96	31.3	302

Altitude adjustments for power output

- Temperature deration: 3% for every 10 °C above 25 °C or 1.65% for every 10 °F above 77 °F
- Altitude deration (25, 30, 36, and 45 kW): 1% for every 100 m above 183 m or 3% for every 1000 ft above 600 ft
- Altitude deration (60 kW): 1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft

Note: Fuel pipe must be sized for full load.

For BTU content, multiply ft³/hr x 2520 (LP) or ft³/hr x 1000 (NG).

For megajoule content, multiply m³/hr x 93.15 (LP) or m³/hr x 37.26 (NG).

Standby rating

Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

	22 kW	27 kW	32 and 38 kW	48 kW
Engine cooling				
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2400/68	2400/68	2200/62.3	4350/123.2
System coolant capacity (gal/liters)	2.5/9.5	2.5/9.5	2.5/9.5	3/11.4
Heat rejection to coolant (BTU per hr/MJ per hr)	99,000/104.5	105,000/110.8	145,000/153	186,000/196.2
Maximum operation air temperature on radiator (°C/°F)	60/150	60/150	60/150	60/150
Maximum ambient temperature (°C/°F)	50/140	50/140	50/140	50/140
Combustion requirements				
Flow at rated power (cfm/cmm)	68/1.9	68/1.9	106/3	163/4.6
Noise levels ①				
Sound output in dBA at 23 ft (7 m) with generator in exercise mode	61	61	58	63
Sound output in dBA at 23 ft (7 m) with generator operating at normal load	70	70	64	68
Exhaust				
Exhaust flow at rated output (cfm/cmm)	165/4.7	180/5.1	300/8.5	414/11.7
Exhaust temperature at muffler outlet (°C/°F)	482/900	538/1000	579/1075	552/1025

① Sound level testing from the front of the unit. Field sound emissions testing results may vary depending on installation parameters, surround noise, physical conditions, etc.

Controller features

- Two-line plain text LCD display: simple user interface for ease of operation
- Mode switch:
 - Auto: automatic start on utility failure; 7-day exerciser
 - Off: stops unit; power is removed; control and charger still operate
 - Manual: start with starter control, unit stays on; if utility fails, transfer to load takes place
- Programmable start delay between 10 and 30 seconds: standard
- Engine start sequence: cyclic cranking—16 seconds on, 7 rest (90 seconds maximum duration)
- Engine warm-up: 5 seconds
- Engine cool-down: 1 minute
- Starter lock-out: starter cannot re-engage until 5 seconds after engine has stopped
- Smart battery charger: standard
- Automatic voltage regulation with overvoltage and undervoltage protection: standard
- Automatic low oil pressure shutdown: standard
- Overspeed shutdown: standard, 72 Hz
- High temperature shutdown: standard
- Overcrank protection: standard
- Safety fused: standard
- Failure to transfer protection: standard
- Low battery protection: standard
- 50 event run log: standard
- Future set capable exerciser: standard
- Incorrect wiring protection: standard
- Internal fault protection: standard
- Common external fault capability: standard
- Governor failure protection: standard

Accessories

Type	Model size	Description/features	Catalog number
Maintenance and general accessories			
Cold weather kit	22, 27, 32, and 38 kW (2.4 L engine)	Includes battery warmer. Built-in thermostat maintains battery in optimal temperatures for engine performance. Recommended in areas where temperature drops to 32 °F (0 °C) or below.	5630CH
	48 kW (5.4 L engine)		5632CH
Extreme cold weather kits	22, 27, 32, and 38 kW (2.4 L engine)	Includes crankcase warmer. Built-in thermostat maintains engine block in optimal temperatures for ideal performance. Recommended in areas where temperature drops to 32 °F (0 °C) or below.	5616CH
	48 kW (5.4 L engine)		6204CH
Maintenance kit	22 and 27 kW (2.4 L engine)	Includes all hardware and material necessary to perform schedule maintenance.	5656CH
	32 and 38 kW (2.4 L engine)		5984CH
	48 kW (4.2 L engine)		5658CH
Touch-up paint	All liquid-cooled models 22–60 kW	Bisque color—touch-up paint kit	EGENPAINT
Monitoring			
Mobile wireless remote monitor	All liquid-cooled models 22–60 kW	Most advanced wireless status monitoring system. Allows connectivity and settings programming via smart devices (laptops, smartphone, tablets, etc.). Sends automated emails and/or text messages to multiple users. Requires cell phone signal and subscription. Compatible with 2008 models or newer. Requires EGENKIT installation.	EGENMOBILE
		Adapter wire harness kit for EGENMOBILE monitor. Required for liquid-cooled generators only. Compatible with 2008 models or newer. U.S. and Canada only.	EGENKIT
In-house wireless monitor		Basic wireless local home monitor. In-house generator status basic monitoring system. No computer connectivity required. 600 ft radius of wireless coverage. Requires EGENinHOMEKIT installation.	EGENinHOME
		Adapter wire harness kit for EGENinHOME monitor. Required for liquid-cooled generators units only. Compatible with 2008 models or newer. U.S. and Canada only.	EGENinHOMEKIT

Installation drawings

Dimensions in mm (inches)

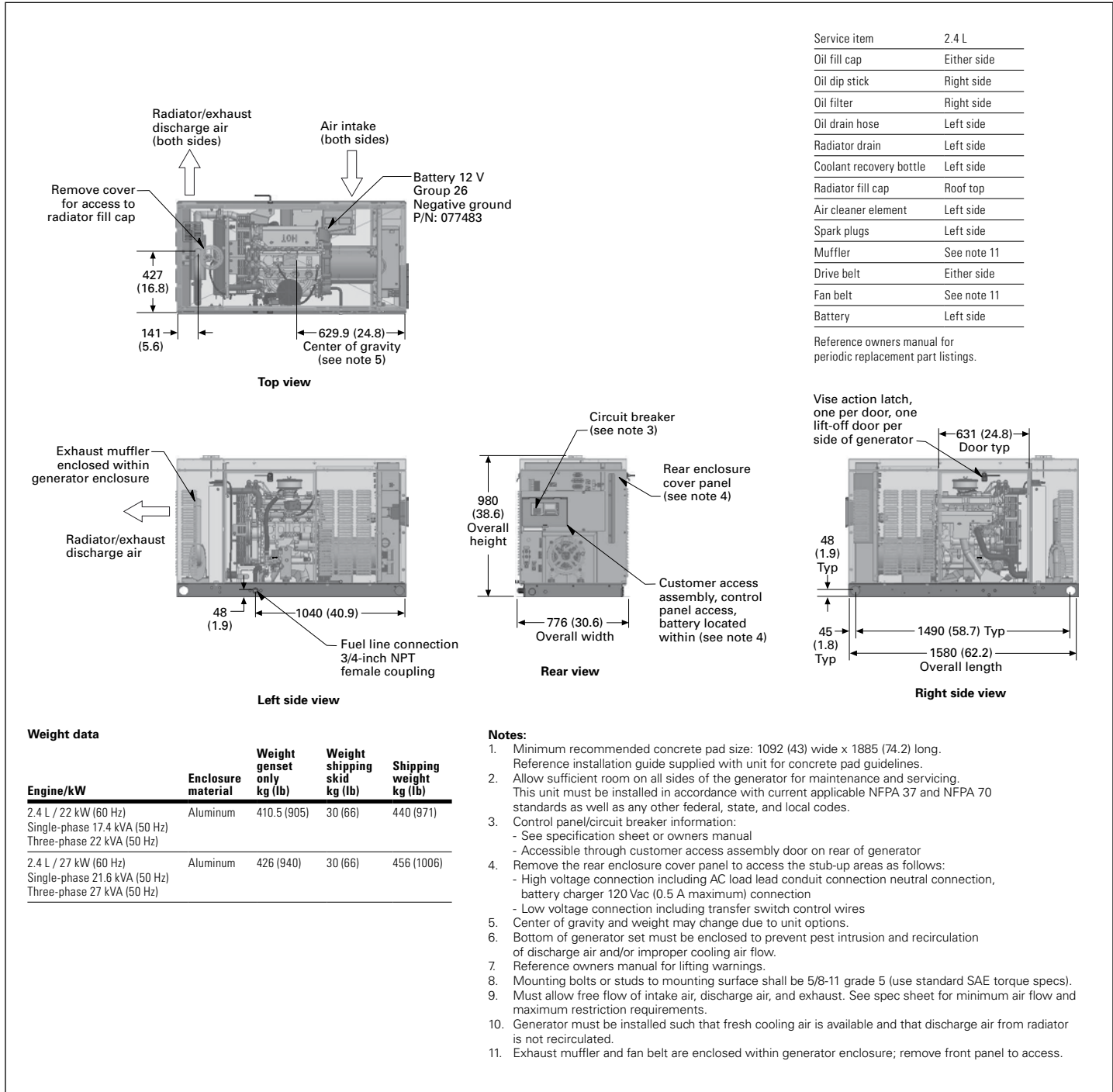


Figure 1. Catalog number EGENX22 and 27 kW

Dimensions in mm (inches)

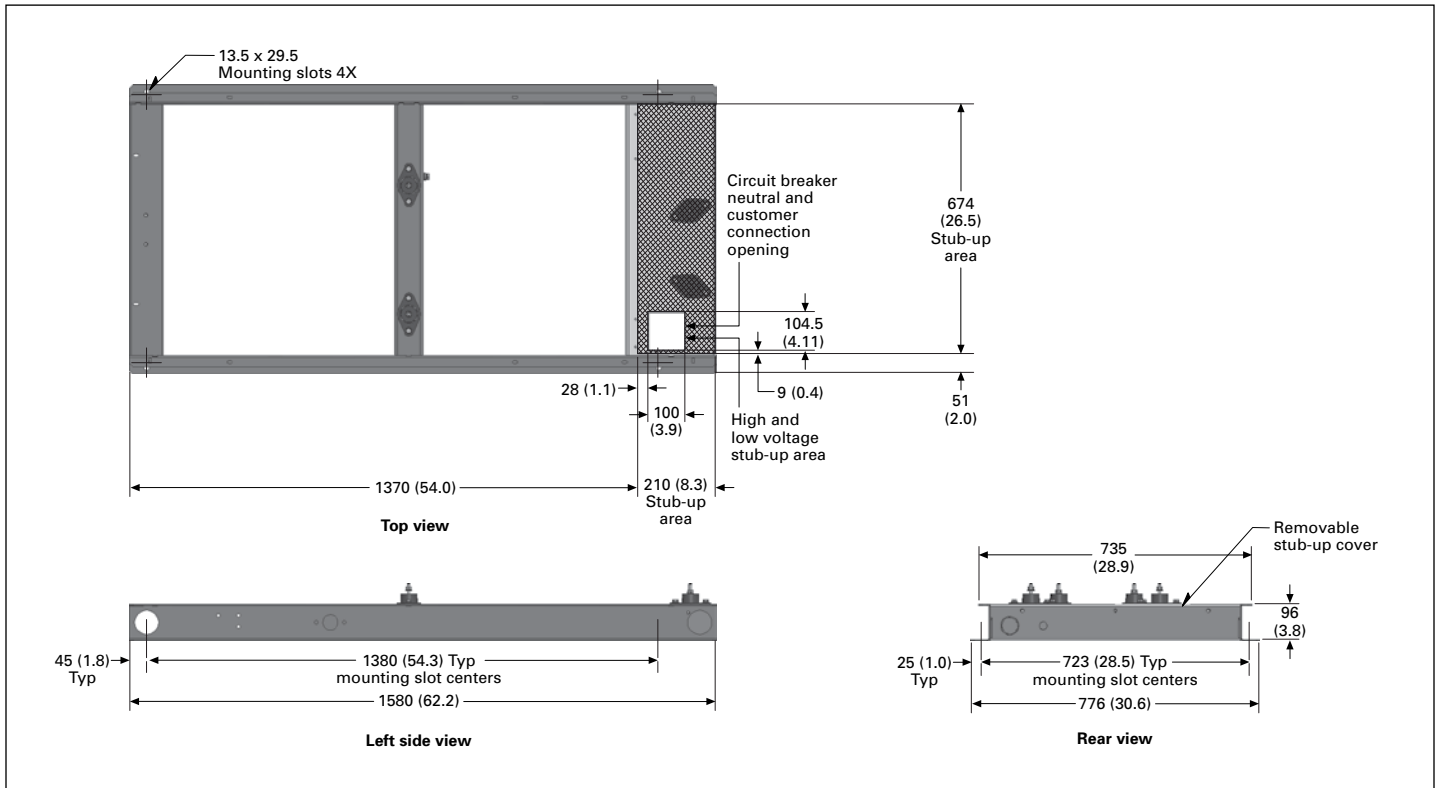


Figure 2. Catalog number EGENX22 and 27 kW

Dimensions in mm (inches)

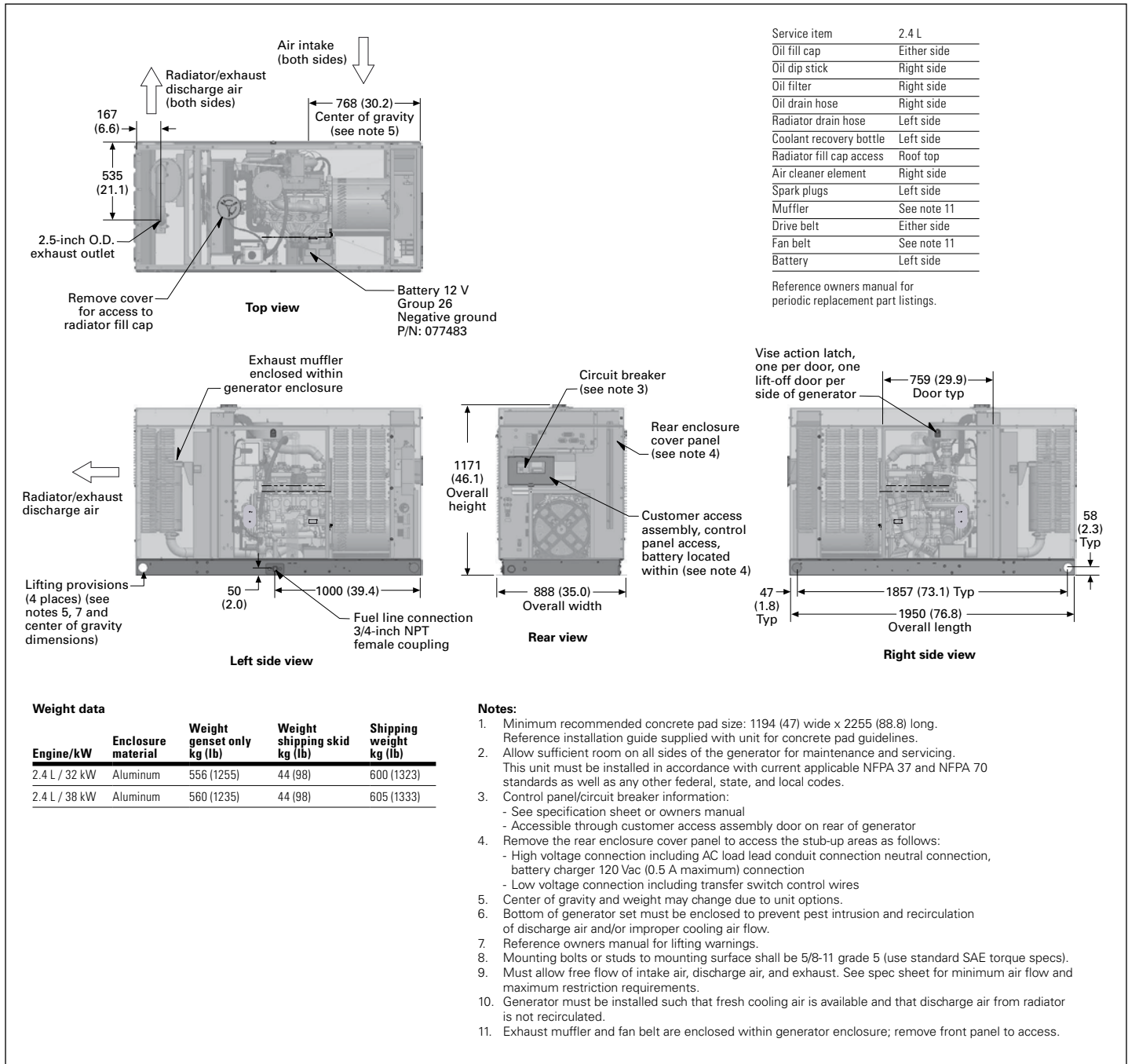


Figure 3. Catalog number EGENX32 and 38 kW

Dimensions in mm (inches)

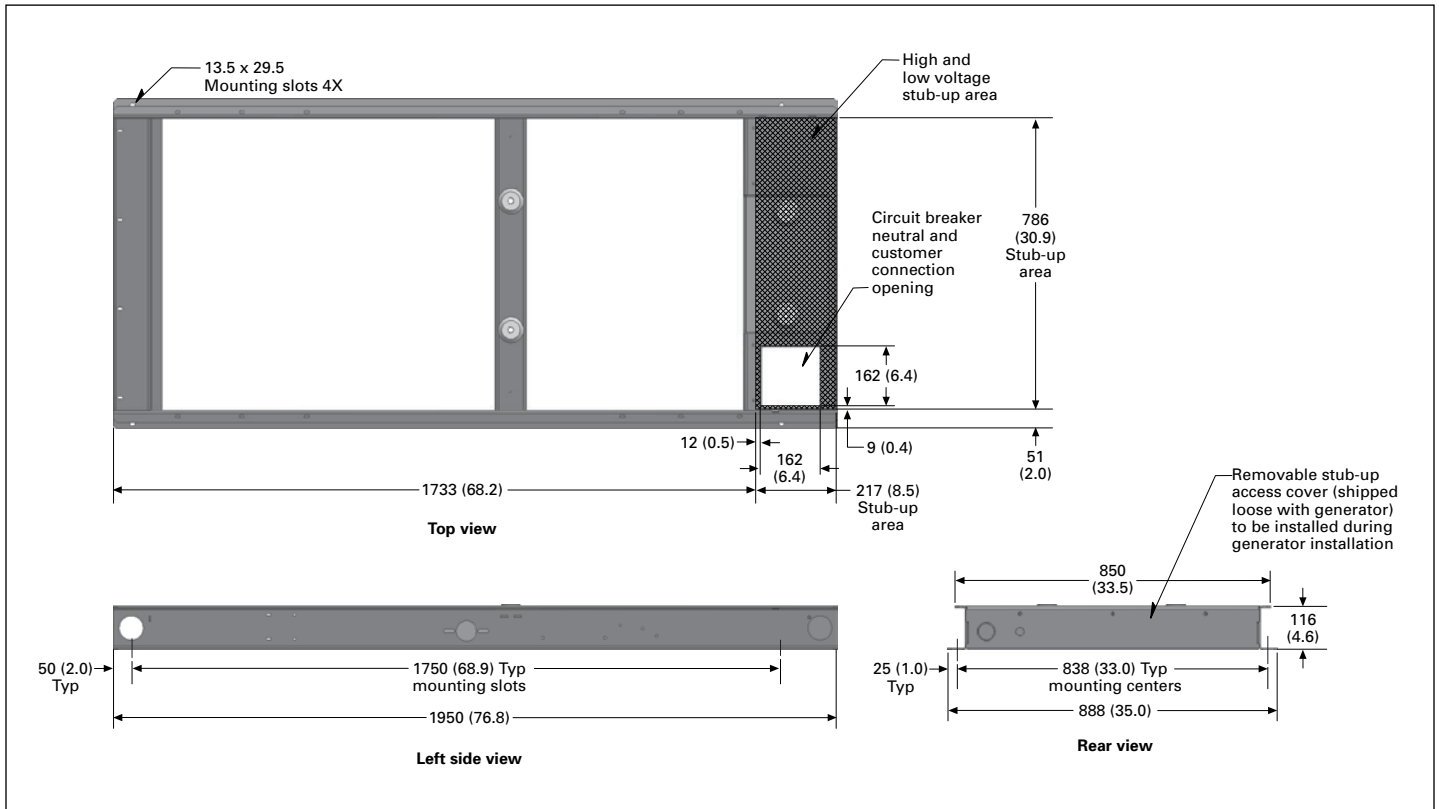


Figure 4. Catalog number EGENX32 and 38 kW

Dimensions in mm (inches)

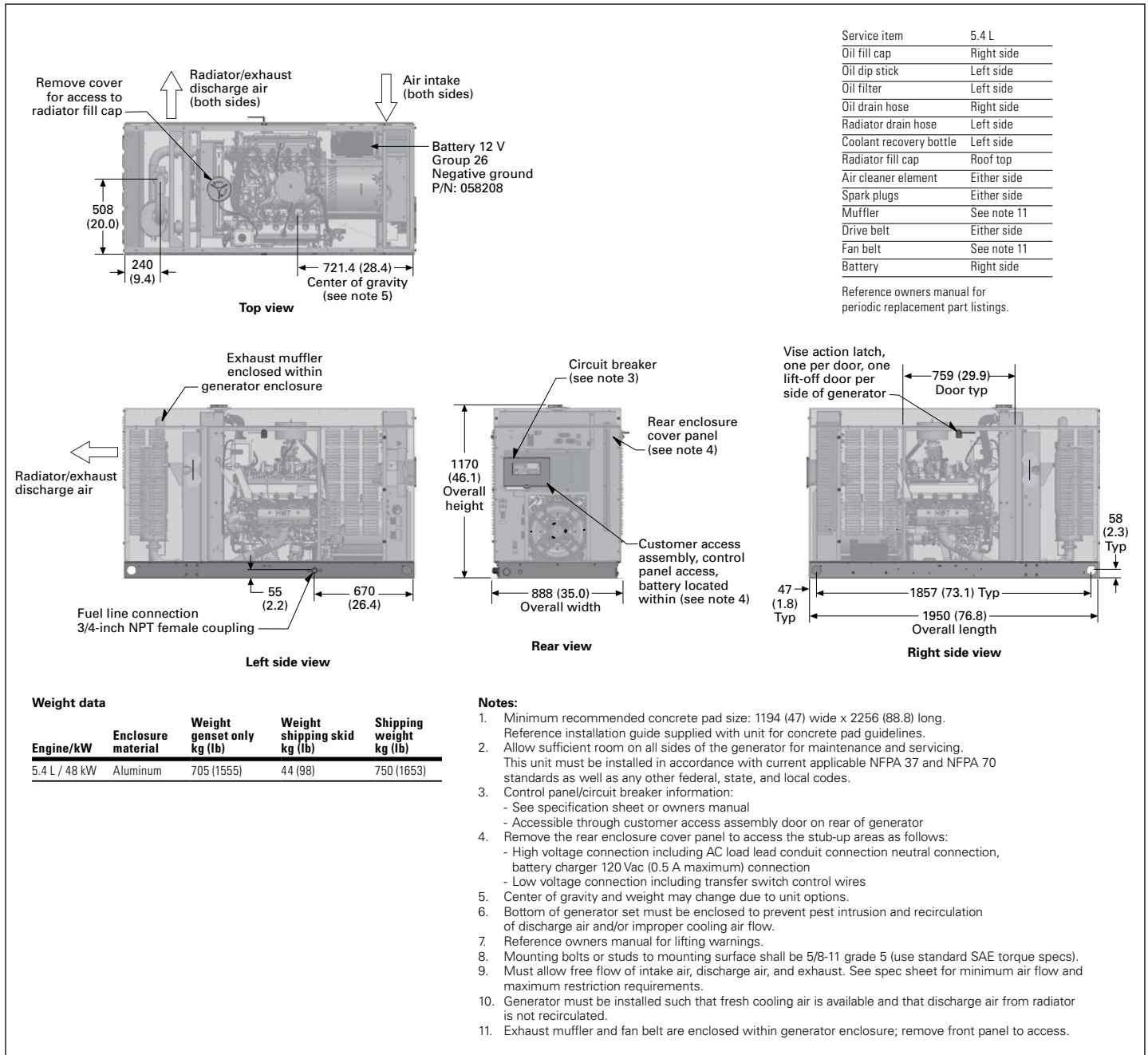


Figure 5. Catalog number EGENX48

Dimensions in mm (inches)

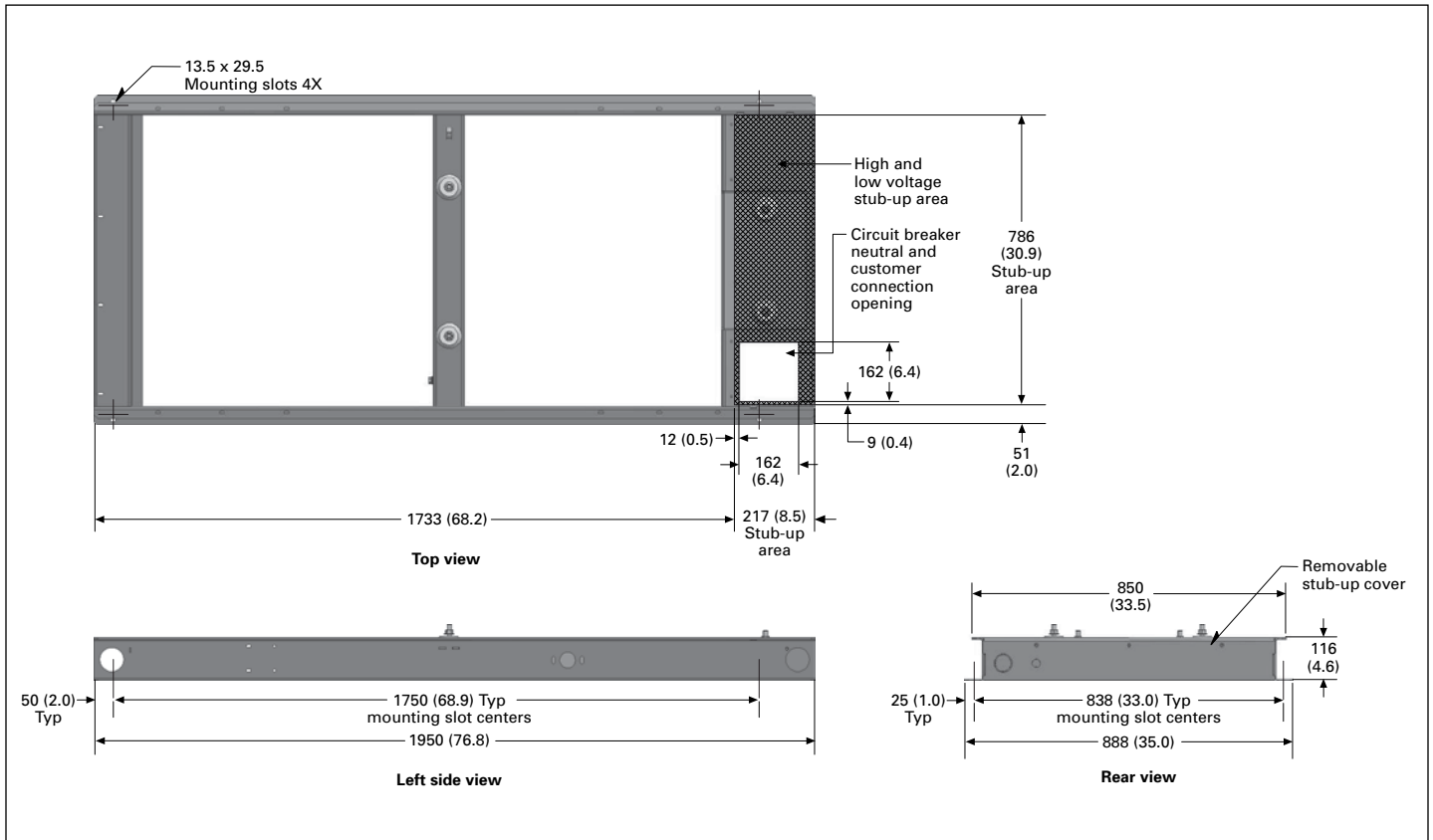


Figure 6. Catalog number EGENX48

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