GILLETTE GENERATORS

LIQUID COOLED DIESEL ENGINE GENERATOR SET

60 HZ MODEL

T4D-6000

Model	HZ	STANDBY 130°C RISE	PRIME 105°C RISE
T4D-6000-60 HERTZ	60	600	570

All generator sets are USA prototype built and thoroughly tested. Production models are USA factory built and 100% load tested.

UL2200, UL1446, UL508, UL142, UL498

NFPA 110, 99, 70, 37
All generator sets meet NFPA-110 Level 1, when equipped with the necessary accessories and installed per NFPA standards.

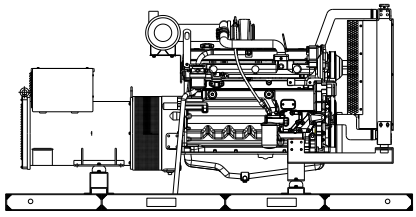
NEC 700, 701, 702, 708

NEMA ICS10, MG1, ICS6, AB1

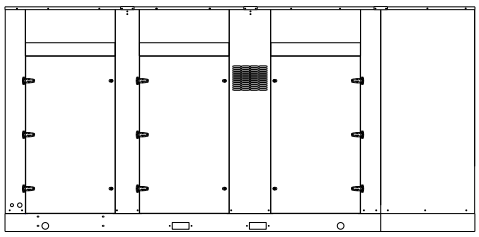
ANSI C62.41, 27, 59, 32, 480, 40Q, 81U, 360-05

ASCE 7-22
All generator sets meet 200 MPH rating.

EPA 40CFR Part 60, 89, 1039, 1048, 1054, 1065, 1068



"OPEN" GEN-SET
There is no enclosure, so gen-set must be placed within a weather protected area, un-inhabited by humans or animals, with proper ventilation. Silencer not supplied, as installation requirements are not known. However, this item is available as optional equipment.



"LEVEL 2" HOUSED GEN-SET
Full aluminum weather protection and superior sound attenuation for specific low noise applications. Critical grade muffler is standard.

GENERATOR RATINGS

GENERATOR MODEL	VOLTAGE		PH	HZ	130°C RISE STANDBY RATING		105°C RISE PRIME RATING	
	L-N	L-L			KW/KVA	AMP	KW/KVA	AMP
T4D-6000-3-2	120	208	3	60	600/750	2084	570/712	1980
T4D-6000-3-3	120	240	3	60	600/750	1806	570/712	1716
T4D-6000-3-4	277	480	3	60	600/750	903	570/712	858
T4D-6000-3-5	127	220	3	60	600/750	1970	570/712	1872
T4D-6000-3-16	346	600	3	60	600/750	722	570/712	686

RATINGS: All three phase gen-sets are 12 lead windings, rated at .8 power factor. 130° C "STANDBY RATINGS" are strictly for gen-sets that are used for back-up emergency power to a failed normal utility power source. This standby rating allows varying loads, with no overload capability, for the entire duration of utility power outage. 105° C "PRIME RATINGS" are strictly for gen-sets that provide the prime source of electric power, where normal utility power is unavailable or unreliable. A 10% overload is allowed for a total of 1 hour, within every 12 hours of operation, on every PRIME RATED system. All gen-set power ratings are based on temperature rise measured by resistance method as defined by MIL-STD 705C and IEEE STD 115, METHOD 6.4.4. All generators have class H (180°C) insulation system on both rotor and stator windings. All factory tests and KW/KVA charts shown above are based 130°C (standby), and 105°C (prime) R/R winding temperature, within a maximum 40°C ambient condition. Generators operated at standby power ratings must not exceed the temperature rise limitation for class H insulation system, as specified in NEMA MG1-22.40. Specifications & ratings are subject to change without prior notice.

APPLICATION & ENGINEERING DATA FOR MODEL T4D-6000-60 HZ

GENERATOR SPECIFICATIONS

Manufacturer.....Stamford Generators
Model & Type..... HCI634G-311, 4 Pole, 12 Lead, Three Phase
.....HCI534F-311, 4 Pole, 12 Lead, 480V, Three Phase
.....HCI534F-17, 4 Pole, 12 Lead, 600V, Three Phase
Exciter..... Brushless, shunt excited
Voltage Regulator.....Solid State, HZ/Volts
Voltage Regulation ..... ½%, No load to full load
Frequency .....60 HZ
Frequency Regulation.....± ½% (1/2 cycle, no load to full load)
Unbalanced Load Capability .....100% of standby amps
One Step Load Acceptance.....100% of nameplate rating
Total Stator and Load Insulation ..... Class H, 180°C
Temperature Rise.....105°C R/R, prime rating @ 40°C amb.
3 Ø Motor Starting @ 30% Voltage Dip (208-240V) .. 1500 kVA
3 Ø Motor Starting @ 30% Voltage Dip (480V-600V) 2300 kVA
Bearing.....1, Pre-lubed and sealed
Coupling ..... Direct flexible disc.
Total Harmonic Distortion.....Max 3 % (MIL-STD705B)
Telephone Interference Factor.....Max 50 (NEMA MG1-22)
Deviation Factor .....Max 5% (MIL-STD 405B)
Alternator..... Self ventilating and drip-proof
Ltd. Warranty Period .....24 Months from start-up date or
..... 1000 hours use, first to occur.

GENERATOR FEATURES

- World Renown Stamford Electric Generator having UL-1446 certification.
- Full generator protection with **Basler DGC-2020** controller, having UL-508 certification.
- Automatic voltage regulator with over-excitation, under-frequency compensation, under-speed protection, and EMI filtering. Entire solid-state board is encapsulated for moisture protection.
- Generator power ratings are based on temperature rise, measured by resistance method, as defined in MIL-STD 705C and IEEE STD 115, Method 6.4.4.
- Power ratings will not exceed temperature rise limitation for class H insulation as per NEMA MG1-22.40.
- Insulation resistance to ground, exceeds 1.5 meg-ohm.
- Stator receives 2000 V. hi-potential test on main windings, and rotor windings receive a 1500 V. hi-potential test, as per MIL-STD 705B.
- Full amortisseur windings with UL-1446 certification.
- Complete engine-generator torsional acceptance, confirmed during initial prototype testing.
- Full load testing on all engine-generator sets, before shipping.

ENGINE SPECIFICATIONS AND APPLICATIONS DATA

ENGINE

Manufacturer.....VOLVO-PENTA
Model and Type..... TWD1683GE, 4 cycle, liquid Cooled
Aspiration .....Turbo After Cooler, H2O to Air
Charged Air Cooled System.....H2O to Air
Cylinder Arrangement .....6 Cylinders, In-Line
Displacement Cu. In. (Liters) 984 (16.1)
Bore & Stroke in (Cm) ..... 5.67 x 6.50 (14.4 x 16.5)
Compression Ratio.....16.8:1
Main Bearings.....Tin Overlay with Babbit Backing
Cylinder Head.....Cast Iron with overhead Cam
Pistons.....Aluminum Alloy with Graphite Coating
Crankshaft..... Induction Hardened, Heat Treated Forged
Valves .....Heat Treated and Hardened Exhaust Valve
Governor ..... Electronic, EMS 2.2
Frequency Regulation.....± 1/4%
Air Cleaner..... Dry, Replaceable Cartridge
Engine Speed .....1800 rpm
Max Power, bhp (kwm) Standby 932 (695)
Max Power, bhp (kwm) Prime..... 850 (625)
BMEP: psi (MPa) Standby 411 (2.8)
Ltd. Warranty Period .....2 Year or 1000 hrs, first to occur

FUEL SYSTEM

Type .....Diesel Fuel Oil (ASTM No. 2-D)
Combustion System.....Direct Injection
Fuel Injection Pump..... Electronic, Delphi E3
24 VDC Coolant heaters.....Optional Equipment
Fuel Filter .....……..Yes with Water Separator

FUEL CONSUMPTION

GAL/HR (LITER/HR)	STANDBY	PRIME
100% LOAD	37.2 (140.7)	37.2 (140.7)
75% LOAD	27.9 (105.5)	27.9 (105.5)
50% LOAD	19.4 (73.3)	19.4 (73.3)
DEF Consumption is 6.20% of fuel consumption		

OIL SYSTEM

Type .....Full Pressure
Oil Pan Capacity qt. (L)..... 50.7 (48)
Oil Pan Cap. W/ filter qt. (L) 44.3 (42)
Oil Filter..... 3, Replaceable Cartridge type

ELECTRICAL SYSTEM

Ignition System .....Electronic
Eng. Alternator/Starter: 24 VDC, negative ground, 110 amp/hr.

Recommended battery to -18°C (0° F): ...(2) 12 VDC, BCI# 31, Max. Dimensions: 14"lg x 6 3/4" wi x 10" hi, with standard round posts. Min output 1000 CCA. Battery tray (max. dim. at 15"lg x 7"wi). This model has (2) battery trays, (2) hold down straps, (2) sets of battery cables, and (1) battery charger. Installation of (2) 12VDC starting batteries connected in series for 24VDC output is required, with possible higher AMP/HR rating, as described above, if the normal environment temperature averages -13° F (-25°C) or cooler.

CERTIFICATIONS

All engines are EPA emissions certified. All non-emergency stationary diesel engines are T4F/Stage 5 Dual Certified.

APPLICATION & ENGINEERING DATA FOR MODEL T4D-6000-60 HZ

COOLING SYSTEM

Type of System.....Air to Air, Charged Air Cooler
Coolant Pump ..... Pre-lubricated, self-sealing
Cooling Fan Type ..... Pusher
Fan Diameter inches (cm) 35.1 (89)
Fan drive ratio..... 1.04:1
Ambient Capacity of Radiator °F (°C).....131 (55)
Engine Jacket Coolant Capacity gal. (L).....8.70 (33)
Radiator Coolant Capacity gal. (L) 16.0 (60)
Water Pump Capacity gpm (L/min) 122 (462)
Heat Reject Coolant: Btu/min .... ….12170
Air to Air Heat Reject, BTU/min. .... ….24909
Heat Rejected to CAC, BTU/min..... .....….9099
Low Radiator Coolant Level Shutdown……..Standard
Note: Coolant temp. shut-down switch setting at 228°F (109°C) with 50/50 (water/antifreeze) mix.

COOLING AIR REQUIREMENTS

Combustion Air cfm (m^3/min)..... .....1695 (48)
Max Air Intake Restrictions:
Clean Air Cleaner, KPA (psi)..... .....3 (0.4)
Radiator Cooling Air, SCFM (m^3/min)…….....29,894 (846)

EXHAUST SYSTEM

Exhaust Outlet Size .....10"
Max. Back Pressure in KPA (in. H2O) 10 (40)
Exhaust Flow, at rated KW, CFM (m3/min).....3673 (104)
Exhaust Temp, (Stack) °F (ºC)..... .....810 (432)

SOUND LEVELS MEASURED IN dB(A)

	Open Set	Level 2 Encl.
Level 2, SCR/Residential Silencer	98	83

Note: Open sets (no enclosure) have installed selective catalytic reduction/residential silencer system. Level 2 enclosure has installed selective catalytic reduction/residential silencer. Sound tests are averaged from several test points and taken at 23 ft. (7 m) from source of noise at normal operation.

DERATE GENERATOR FOR ALTITUDE

3% per 1000 ft. (305m) above 3000 ft. (914m) from sea level

DERATE GENERATOR FOR TEMPERATURE

2% per 10°F (5.6°C) above 104°F (40°C)

DIMENSIONS AND WEIGHTS

	Open Set	Level 2 Enclosure
Length in (cm)	152 (368).....	..... 200 (508)
Width in (cm).....	72 (183).....	..... 72 (183)
Height in (cm).....	116 (295).....	..... 94 (239)
3 Ø Net Weight lbs (kg).....	9625 (4366)....	..... 14975 (6793)
3 Ø Ship Weight lbs (kg).....	10025 (4547)...	..... 15375 (6974)

BASLER DGC-2020 DIGITAL MICROPROCESSOR CONTROLLER

Basler DGC-2020

The "**2020**" controller is a highly advanced integrated gen-set control system for single gen-set applications. This controller includes a backlit LCD display which continuously displays the status of the engine and generator at all times.
Basler "**DGC-2020"** includes: Generator metering (including three phase) • Engine – Generator protections including IEEE- [27] under voltage, [32] power, [40] loss of excitation, [59] over voltage, [81] over and under frequency, Exercise timer • SAE J1939 engine ECU communications • Expansion capabilities for both inputs and outputs with expansion • Remote communications through RS-485 to Basler's RDP110 remote Display panel • (16) programmable contact inputs • (15) programmable contact outputs- (3) for up to 30AmpDC and (12) for up to 2 Amp DC • Illuminated Text Display • Front panel menu scroll buttons • Front panel operation mode buttons for STOP, RUN and AUTO • Alarm Silence and Lamp Test buttons

This controller includes expansion features including, RS485 (using MODBUS), direct USB connection with PC, expansion optioned using BESTCOMSPlus for remote annunciation and remote relay interfacing for a distance of up to 3300FT.

STANDARD FEATURES FOR MODEL T4D-6000-60 HZ

STANDARD FEATURES

CONTROL PANEL:

Basler DGC-2020 digital microprocessor with logic allows programming in the field. Controller has:

- STOP-MANUAL-AUTO modes and automatic engine shutdowns, signaled by full text LCD indicators:
- Low oil pressure
- High engine temp
- Low Radiator Level
- Three auxiliary alarms
- Battery fail alarm
- Engine fail to start
- Engine over speed
- Engine under speed
- Over & under voltage

Also included is tamper-proof engine hour meter

ENGINE:

Fuel filter • Full flow Oil filter • Air filter • Fuel pump • Oil pump • Solenoid type starter motor • Hi-temp radiator • Jacket water pump • Thermostat • Pusher fan and guard • Exhaust manifold • Electronic Governor • 24 VDC battery charging alternator • Flexible fuel and exhaust connectors • Vibration isolators • Open coolant recovery system with 50/50 water to anti-freeze mixture • flexible oil & radiator hose • Shut-down sensors for low oil pressure, high coolant temp., low coolant level, high ambient temp.

Design & specifications subject to change without prior notice. Dimensions shown are approximate. Contact Gillette for certified drawings. DO NOT USE DIMENSIONS FOR INSTALLATION PURPOSES.

AC GENERATOR SYSTEM:

AC generator • Shunt excited • Brushless design • Circuit Breaker installed and wired to gen-set • Direct connection to engine with flex disc • Class H, 180°C insulation • Self ventilated • Drip proof construction • UL Certified

VOLTAGE REGULATOR:

1% Voltage regulation • EMI filter • Under-speed protection • Over-excitation protection • total encapsulation

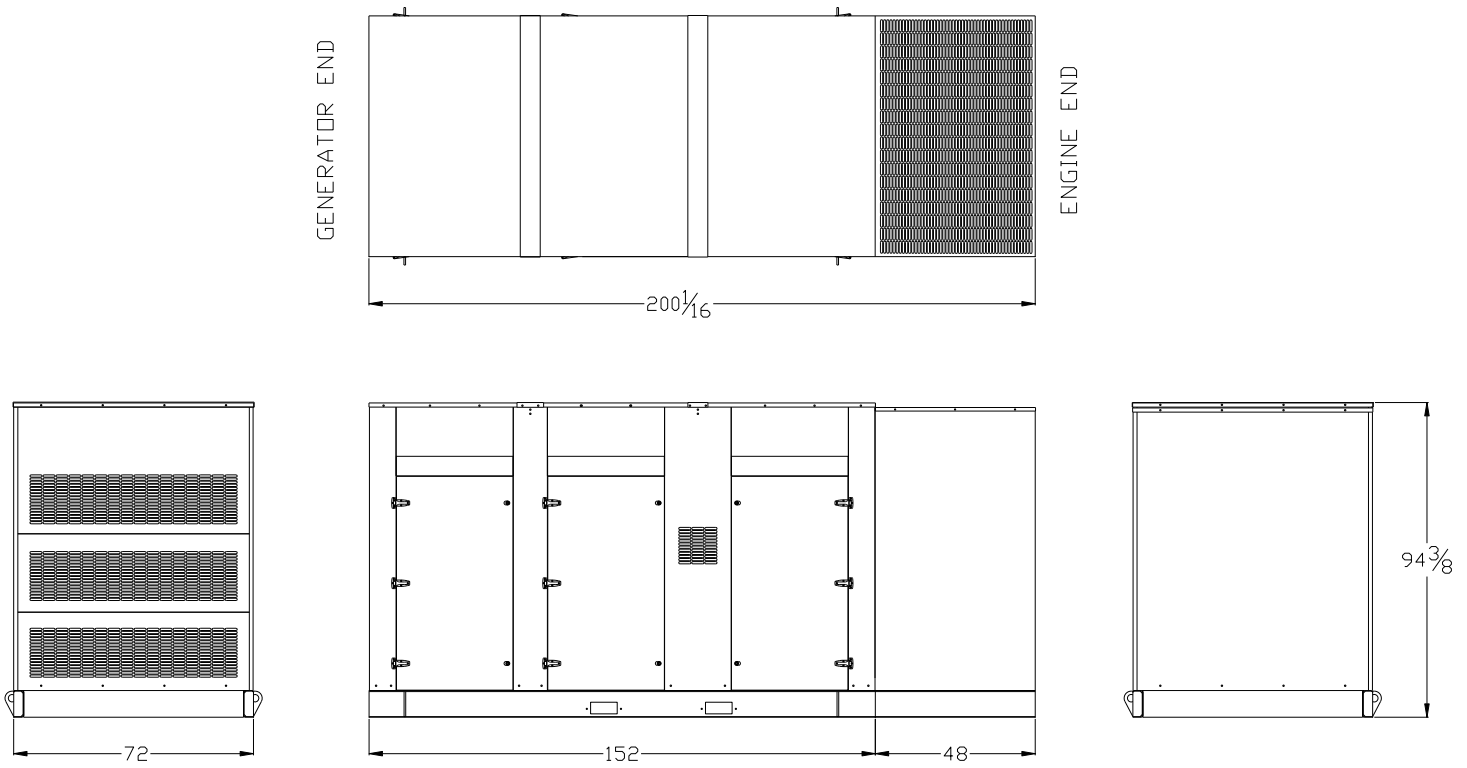
DC ELECTRICAL SYSTEM:

Battery trays • Battery cables • Battery hold down straps • 3-stage battery charger with float, absorption, & bulk automatic charge stages

WEATHER / SOUNDPROOF ALUMINUM HOUSING:

Corrosion Resistant Protection consisting of:

- (9) Heated and Agitated Wash Stages
- Zinc Phosphate Etching-Coating Stage
- Final Baked on Enamel Powder Coat
- 18/8 Stainless Steel Hardware



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