STANDBY UL GENERATOR SET  

FUEL: DIESEL  

ENGINE: PERKINS

### SPECIFICATION SHEET

<table>
<thead>
<tr>
<th>Power Ratings</th>
<th>kW</th>
<th>kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>20.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Prime</td>
<td>18.00</td>
<td>22.5</td>
</tr>
<tr>
<td>Amps 0.8 Power Factor 3-phase 208V</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>12-wire voltages: 1P = 120/240; 3P = 120/208, 120/240, 480/277</td>
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</tbody>
</table>

Rating Definitions: Rated for 1800 rpm. 
Standby ratings are applicable for the duration of any power outage. No overload is available at these ratings. Prime ratings are continuous per BS 5514, DIN 6271, ISO3046 & IEC 34-1. Overload capacity on prime-power ratings is 10% for one hour in each twelve hours of operation. All single phase ratings are based on a 1.0 power factor, three (3) phase ratings based on a 0.8 power factor. Rates are established based on 85°F (29°C) and an elevation of 1,000 feet (305 meters).

### STANDARD FEATURES:

Tradewinds Power Corp (TPC) PERKINS diesel powered generator sets are UL2200 approved self contained standby generator packages complete with mounted auto control panel, fuel connector, air cleaners, exhaust silencers, and other accessories mounted on a rigid base frame. All TPC systems and components are prototyped, assembled and tested within a purpose built packaging, manufacturing, and test facility.

**Engine:**
- PERKINs model 404D-22 4-cylinder diesel engines designed to provide economic and durable operation at prime and standby duties, hitting the key power nodes required by the power generation industry.
- The Perkins® 400 Series engine family continues to set new standards in the compact engine market.
- Design features on the 400D range of ElectropaKs ensures clean rapid starting in all conditions whilst delivering impressive performance with low operating costs in a small, efficient package size
- Oil and filter changes are 500 hours, dependent on load factor
- Wet steel sump with filler and dipstick
- Spin-on full-flow lub oil filter
- Thermostatically-controlled system with belt driven coolant pump and pusher fan

**Alternator:**
- Marathon 4-pole, 12-wire brushless generator, single bearing
- Superior voltage waveform achieved by a 2/3 pitch and skewed rotor.
- Vacuum-impregnated windings with fungus-resistant epoxy for dependability and long-life
- Sustained short-circuit capability enabling down-line circuit breakers to trip without collapsing the generator field

**Starting System:**
- 12-VDC Starter
- Engine mounted Battery Charging Alternator
- Battery Cables and Rack along with Grounding Strap

**Enclosure and Arrangement of Complete Assembly:**
- Engine and generator close coupled on rigid frame with vibration isolators
- Vertical radiator and exhaust discharge
- Oil & Coolant Drain Lines with Brass Ball Check Valves

**Generator Options:**
- Weather Protective Enclosure constructed of Marine Grade Aluminum 0.125 thickness, SS Hardware, white powder coat paint finish on both sides, sound Insulation resistant to high temperatures, fuel and oil, hinged / removable / keyed alike doors
- UL double wall base mounted fuel tank
- Residential rated interior mounted exhaust silencer kit

### AUTOMATIC ENGINE CONTROLLER DGC2020:

- Automatic engine controller with analog display of all functions
- Microprocessor Based, Navigation key with large LCD display
- SAE J1939 CANBUS Communication
- Event Recording
- Transfer Switch Control (main failures)
- Alternator Protection: under/over voltage, under/over frequency
- Engine Protection: Low oil pressure, High coolant temperature, Over speed & over crank, Sender Unit failure, Fuel Failure sensor, Battery Charger Failure
- All protections are programmable as Alarms or Pre-alarms
- Metering (ample range): Volts, Current, Hz, Watts, VA, Pf
- Pressure, Coolant Temperature, RPM, DC Volts, Fuel Level, Engine running time
- Engine Control with Timers
- External remote start input (on or off load)
- 16 programmable contact inputs - 7 Contact outputs

**SCADA interface points:**
- No fuel
- Low battery charging voltage
- Engine running
- Common engine alarm
- Switch in Emergency Position

**WARRANTY:**
- Engine covered under the original equipment manufacturer's warranty
- Consult Tradewinds Power Corp for details
- Complete package supplied with 2-year limited warranty

The manufacture reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.
ENGINE SPECIFICATION

- Manufacturer: Perkins
- Model: 404D-22
- Emissions: EPA Tier 4
- Engine speed (rpm): 1800
- Nominal Engine hp: 45.6
- Cylinder arrangement: Vertical, in-line
- Combustion system: Indirect Injection
- Engine type: Diesel
- Diesel Fuel Grade: ASTM D975 D2
- Number of Cylinders: 4
- Displacement in³ (liters): 135.2 (2.21)
- Bore and Stroke inches (mm): 3.3 x 3.9 (84.0 x 100.0)
- Cooling: Water-cooled
- Governor: Mechanical
- Starting aids: Glow Plugs
- Compression ratio: 23.3:1
- Air cleaner type: Medium duty dry type
- Exhaust Silencer dBA: 80dBA
- Oil Filtration: Engine Mounted

COOLING SYSTEM FOR OPERATING AT 120º AMBIENT:

- Total coolant capacity gallons (liters): 2.8 (10.6)
- Cooling System: Water-cooled
- Radiator System: Engine Mounted
- Maximum Allowable Oil Temperature °F (°C): 250 (121)

LUBRICATING SYSTEM:

- Total lubricating capacity quarts (liters): 2.2 (8.4)
- Oil consumption at full load: < 0.1% of fuel consumption
- Recommended lubricating oil grade: SAE 15W40
- Oil Filter: Full flow spin on, cartridge type

ENGINE ELECTRICAL SYSTEM:

- Starting motor voltage: 12 volt
- Charger: 75 A Alternator with DC output
- Lead Acid Battery: 740 CCA Recommended

ALTERNATOR:

- Configuration: Brushless, 12-wire, 4-pole
- Frequency: 60 Hz
- Voltage regulation: +/- 1%, V/Hz, Electronic, EMI filtered
- No load to full load voltage regulation: +/- 2%
- Coupling: SAE Adapter, Flexible Disc, Direct
- Bearing: Single
- Manufacturer: Marathon
- Model: 282PSL1705
- Load acceptance: One Step, 100% per NFPA 110
- Compliance: NEMA, IEEE & ANSI for temp. rise
- Construction: Self ventilated drip-proof

FUEL CONSUMPTION: CU. FT./HOUR LPG (NG) STANDBY RATING

- Standby: 1.82 (6.9)
- Prime Power: 1.64 (6.2)
- 75%: 1.27 (4.8)
- 50%: 0.94 (3.5)

CONTROL PANEL SPECIFICATIONS:

- Manufacturer (Model): Basler (DGC-2020ES)
- MPC-10 Controller Inputs: 16
- MPC-10 Controller Outputs: 12
- Operating power/consumption: 6-32 VDC, Average load 14.2W
- Communications: UL 508 R & CSA C22.2 #14

GENERATOR OPTIONS:

- Aluminum Enclosure: Sound attenuated to 68 dBA
- Base arrangement: Rigid steel base frame with AVMs
- Spill containment: UL double wall base mounted

DIMENSIONS & ARRANGEMENT DRAWING UL2200 MODEL: TP20 T4i

KEY DIMENSIONS (inches), WEIGHT (pounds) FUEL TANK (US gals)

<table>
<thead>
<tr>
<th>Description &amp; Configuration</th>
<th>Height</th>
<th>Length</th>
<th>Width</th>
<th>Dry Weight lbs</th>
<th>Fuel Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open set</td>
<td>H1</td>
<td>L1</td>
<td>W1</td>
<td>725</td>
<td>50</td>
</tr>
<tr>
<td>Enclosed Set</td>
<td>H2</td>
<td>L2</td>
<td>W2</td>
<td>1088</td>
<td>TBA</td>
</tr>
</tbody>
</table>

Ordering #: GN71039N

www.tradewindspower.com