



POWERING BUSINESS. EMPOWERING PEOPLE.

# U20PE-60S

Powered by Perkins

**Diesel Generating Set**  
**240/120V, 60HZ, Single Phase, 1 p.f.**

|          |     |    |
|----------|-----|----|
| Standby: | kW  | 20 |
|          | kVA | 20 |
| Prime:   | kW  | 18 |
|          | kVA | 18 |

USP&E generators are available in a variety of power ratings and installation styles to meet the energy needs of the smallest businesses to the largest manufacturing facilities. All generator sets are designed to ensure fast startup and dependable long-term operation. USP&E generators provide clean, quiet, and environmentally friendly electrical power when you need it most. Emergency backup, standby, prime power, peak shaving, or for any of your day or night electrical power needs, you can count on a dependable USP&E generator for the peace of mind and security you desire.

## Standby and Prime Power Features

- High quality, reliable, and complete power unit
- Easy startup and low maintenance
- Backed by a worldwide network of parts and service centers
- Subject to a comprehensive test program that includes full load testing, control system functions, and shut down testing
- Manufactured in a dedicated and secure ISO-9001 certified facility
- Optional sound attenuated environmental enclosures available
- Full range of genset accessories and factory installed options available

**Standby:** Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings, in accordance with ISO 3046

**Prime:** Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period, in accordance with ISO 3046



## Engine

- Heavy duty Perkins diesel engine
- Four stroke water-cooled natural aspiration
- Direct injection fuel system
- Mechanical governor system
- Replaceable fuel filter, oil filter, and dry element air filter
- Cooling radiator and fan
- Starter battery (with lead acid) including rack and cables
- Flexible fuel connection hoses and manual oil sump drain valve
- Industrial capacity exhaust silencer and steel bellows
- Jacket water heater (on automatic models)
- Operation manuals and circuit diagram documents

## Alternator

- Brushless, single bearing system, flexible disc, 4 poles
- Insulation Class H
- Standard degree of protection IP21 (IP22/IP23 avail.)
- Self-exciting and self-regulating
- Impregnation with tropicalized epoxy varnish
- Solid state automatic voltage regulator
- Stator winding with 2/3 pitch for improved harmonics



Manufacturer reserves the right to make changes in model, technical specifications, color, equipment, and accessories without prior notice

## Alternator Ratings

|                                       |   |
|---------------------------------------|---|
| Make                                  | Marathon  |
| Model                                 | MPS 20-4  |
| Size                                  | 640 mm x 464 mm x 710 mm                                    |
| Design                                | Brushless single bearing, revolving field                   |
| Stator                                | 2/3 pitch   |
| Rotor                                 | Single bearing, flexible disc                               |
| Insulation System                     | Class H   |
| Standard Temperature Rise             | 125°C Prime – 150°C Stand by                                |
| Exciter Type                          | Self-excited (PMG excitation is optional)                   |
| Phase Rotation                        | A (U), B(V), C(W)   |
| Alternator Cooling                    | Direct drive centrifugal blower fan                         |
| AC Waveform Total Harmonic Distortion | No load < 1.5%.<br>Non-distorting balanced linear load < 5% |
| Telephone Influence Factor (TIF)      | <50 per NEMA MG1-22.43                                      |
| Telephone Harmonic Factor (THF)       | <2%   |

## Engine Specifications

|  |                             |
|--|-----------------------------|
| Manufacturer                               | Perkins                     |
| Model                                      | 404D-22G                    |
| EPA Certification                          | Interim Tier 4              |
| Engine Power Output at Rated RPM           | 32.04 BHP                   |
|  | 23.9 kWm                    |
|  | 32.5 HP                     |
| Aspiration and Cooling                     | Natural                     |
| Total Displacement                         | 135.228 cubic inches        |
|  | 2.216 liter                 |
| No of Cylinders and Build                  | 4, inline                   |
| Engine Speed                               | 1800 RPM                    |
| Bore and Stroke                            | 3.307 inches x 3.937 inches |
|  | 84 mm x 100 mm              |
| Compression Ratio                          | 23.3:1                      |
| Governor                                   | Mechanical                  |
| Starter Motor Voltage                      | 12V                         |
| Fuel Consumption @ 100% Load               | 1.637 gallons per hour      |
| Fuel Consumption @ 75% Load                | 1.267 gallons per hour      |
| Fuel Consumption @ 50% Load                | 0.924 gallons per hour      |
| Fuel Consumption @ 25% Load                | 0.409 gallons per hour      |
| Fuel Tank Capacity                         | N/A                         |
| Oil Capacity                               | 2.797 gallons               |
|  | 10.6 liters                 |
| Coolant Capacity                           | 1.847 gallons               |
|  | 7 liters                    |
| Radiator Cooling Air                       | 1419 cfm                    |
|  | 40.2 m <sup>3</sup> /min    |
| Air Intake - Engine                        | 61.44 cfm                   |
|  | 1.74 m <sup>3</sup> /min    |
| Exhaust Gas Flow                           | 153.26 cfm                  |
|  | 4.34 m <sup>3</sup> /min    |
| Standard Operating Temp Degree of Radiator | 40°C                        |

## Control System

Control supervision and protection panel is mounted on the genset base frame.



### Auto Mains Failure Control Panel

- Control with AMF module
- Static battery charger
- Emergency stop push button

### Generating Set Control Module DSE 7320 Features

- Monitors main supply
- Starts and stops standby generating set
- Micro-processor based design
- Automatic control of main and generator contactors
- Monitors engine performance and AC power output
- LED alarm indication
- Front panel configuration of timers and alarm trip points
- Easy push button control with STOP/RESET – MANUAL - TEST – AUTO – MUTE ALARM – START

### LED Configurable Indicators

- Mains available
- Generator available
- Mains on load
- Generator on load

### Power Outlet Terminal Board Mounted on the Genset Base Frame

### Metering via LED display

- Generator Voltage (L-L / L-N)
- Engine Oil Pressure (PSI-Bar)
- Generator Ampere (L1, L2, L3)
- Engine Temperature (°C & °F)
- Generator Frequency (Hz)
- Plant Battery Volts
- Engine Hours Run
- Mains Volts (Ph-Ph / Ph-N)
- Generator kVA, kWh
- Generator kW as % of rated kW setting
- Generator Cos ( $\sigma$ )

### Alarms

- Over and Under Speed
- Low and High Battery Volt
- Start and Stop Failure
- Charge Fail
- Over Current
- Under / Over Generator Voltage
- Low Oil Pressure
- Emergency Stop
- High Engine Temperature
- kW Overload
- Unbalanced Load
- Independent Earth Fault Trip

## Optional Equipment

### Diesel Engine

- Oil heater

### Alternator

- ¾ Pole output circuit breaker
- Anti-condensation heater

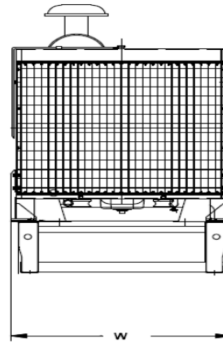
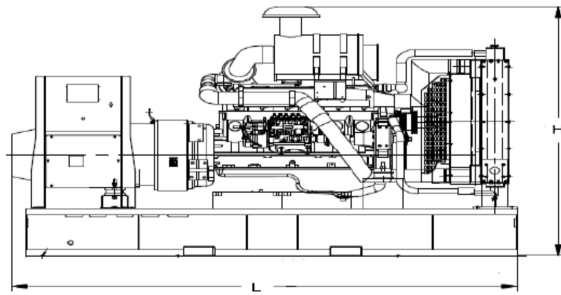
### Panel

- Charge amp meter
- Transfer switch 3 pole
- Transfer switch 4 pole
- Earth fault, single set

### Accessories

- Automatic filling system
- Low fuel level alarm
- Residential silencer
- Enclosure or sound-proof enclosure
- Trailer
- Manual oil drain pump
- Tool kit for maintenance
- Fuel-water separator

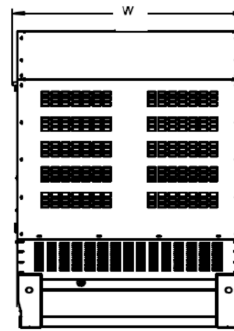
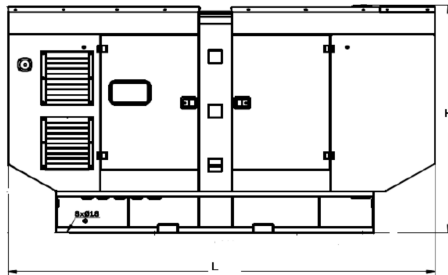
## Open-Skid



- The complete genset is mounted on a heavy duty fabricated, steel base frame
- Anti-vibration pads are fixed between the engine / alternator feet and the base frame
- Base frame design incorporates an integral fuel tank (with sizes up to 750kVA) NON-UL

- The generating set can be lifted or carefully pushed / pulled by the base frame
- Dial type fuel gauge and drain plug on the fuel tank
- Forklift pockets within base frame (with sizes up to 500kVA)

## Sound Attenuated



- All enclosure parts are designed with modular principles without welding assembly
- Doors on each side
- All metal enclosure parts are electrostatically powder-coated

- Exhaust silencer is protected against environmental influences
- Thermally insulated engine exhaust system
- Emergency stop push is installed outside of the enclosure
- Ease of lifting and moving
- Easy maintenance and operation

## Dimensions

| Open Skid              |  |
|------------------------|--|
| Dimensions (L x W x H) | 59.1 inches x 35.4 inches x 46.2 inches<br>1500 mm x 900 mm x 1172 mm  |
| Dry Weight             | 1444 lbs<br>655 Kg   |
| Sound-Attenuated       |  |
| Dimensions (L x W x H) | 76.3 inches x 37.91 inches x 47.8 inches<br>1938 mm x 963 mm x 1215 mm |
| Dry Weight             | 1951 lbs<br>885 Kg   |



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