

# GENERATING SET GE 455 FSX

The images are for reference



## FEATURES

- Available version with STAGE 3A engine
- Bundled base suitable to contain any liquids leakage from engine avoiding environmental pollution
- Oil drain pump
- Fuel pre-filter with water separator
- Large doors for better and easy maintenance (air, oil, fuel filters replacement)
- 2 central lifting eyes
- Control panel with digital control unit available with automatic or manual version
- Suitable for a wide range of uses in general construction
- Supersilenced
- Meets EC directives for noise and safety



water cooled



diesel



three-phase power



electric

## POWER RATINGS

|                                    |                                     |                                     |
|------------------------------------|-------------------------------------|-------------------------------------|
| * Stand-By three-phase power (LTP) | 450 kVA (360 kW)<br>400 V / 649.5 A | 440 kVA (352 kW)<br>400 V / 635.1 A |
| * PRP three-phase power            | 410 kVA (328 kW)<br>400 V / 591.8 A | 400 kVA (320 kW)<br>400 V / 577.4 A |
| * PRP single-phase power           | 315 kVA (252 kW) / 400V / 455.2 A   |                                     |
| Frequency                          | 50 Hz                               |                                     |
| Cos φ                              | 0.8                                 |                                     |

\* Output powers according to ISO 8528-1

## DEFINITION

Valid declared powers up to the followings environmental conditions: temperature 25°C, altitude 100 meters above sea level)

**LTP power: stand-by power:** Maximum available power for use with variable loads for a yearly number of hours limited at 500 h. No overload is admitted.

**PRP power:** continue power with variable loads. Maximum power for use with variable loads for a yearly illimited nubers of hours.

**COP power:** continuous power with constant load. Maximum power for use with constant loads for a yearly unlimited numbers of hours.

## ENGINE 1500 RPM

### 4 STROKE, DIRECT INJECTION, TURBOCHARGED

| Model                                            | FPT (IVECO) C13 TE3A                  | FPT (IVECO) C13 TE2F<br>(Stage 3A) |
|--------------------------------------------------|---------------------------------------|------------------------------------|
| * Stand-By net power                             | 387 kW (526 hp)                       | 377 kW (513 hp)                    |
| * PRP net power                                  | 352 kW (478.7 hp)                     | 342 kW (465 hp)                    |
| * COP net power                                  | /                                     | 269 kW (366 hp)                    |
| Cylinders / Displacement                         | 6/ 12880 cm <sup>3</sup> (12.88 lit.) |                                    |
| Bore / Stroke                                    | 135 / 150 (mm)                        |                                    |
| Compression ratio                                | 16.5 : 1                              |                                    |
| BMEP (Brake Mean Effective Pressure : LTP - PRP) | 2484.5 kPa - 2258.6 kPa               | 2485 kPa – 2259 kPa                |
| Speed governor type                              | Electronic                            |                                    |
| <b>FUEL CONSUMPTION</b>                          |                                       |                                    |
| 110 % (Stand-by power)                           | 208.1 g/kWh - 98.5 lit./h             | 204.5 g/kWh - 97,4 lit./h          |
| 100 % to PRP                                     | 208 g/kWh - 87.5 lit./h               | 213 g/kWh - 92.9 lit./h            |
| 75 % to PRP                                      | 203.6 g/kWh - 72.5 lit./h             | 234.5 g/kWh - 81 lit./h            |
| 50 % to PRP                                      | 205 g/kWh - 48.6 lit./h               | 243.2 g/kWh - 53 lit./h            |
| <b>COOLING SYSTEM</b>                            |                                       |                                    |
| Total system cap. - only engine                  | 47.5 lit. - 19.5 lit                  | 67 lit. – 19.5 lit.                |
| Fan air flow                                     | 408 m³/min.                           | 546 m³/min.                        |
| <b>LUBRIFICATION SYSTEM</b>                      |                                       |                                    |
| Total oil system capacity                        | 35 lit.                               |                                    |
| Oil capacity in sump                             | 14 lit. (min) – 27 lit. (max)         |                                    |
| Oil consumption at full load                     | < 0.17 lit./h                         | < 0.18 lit./h                      |

\* Output powers according to ISO 3046-1

|                                  |                  |               |
|----------------------------------|------------------|---------------|
| EXHAUST SYSTEM                   |                  |               |
| Maximum exhaust gas flow         | 36.8 kg/mim.     | 31.12 kg/mim. |
| Max. exhaust gas temp.           | 445 °C           | 520 °C        |
| Maximum back pressure            | 5 kPa (0,05 bar) |               |
| External diameter exhaust pipe   | /                |               |
| ELECTRICAL SYSTEM                |                  |               |
| Starter motor power              | 24 Vdc           |               |
| Battery charging alternator cap. | 5.5 kW           |               |
| Cold start                       | 90 A             |               |
| With cold start aid              | - 10 °C          |               |
| AIR FILTER                       | - 25 °C          |               |
| Combustion air flow              | Dry              |               |
| HEAT REJECTED AT FULL LOAD       | 29.5 m³/min.     |               |
| To exhaust system                | 703 kcal/kWh     | 591 kcal/kWh  |
| To water and oil                 | 370 kcal/kWh     | 321 kcal/kWh  |
| Radiated to room                 | 32 kcal/kWh      | 100 kcal/kWh  |
| To charge cooler                 | 179 kcal/kWh     | 213 kcal/kWh  |

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## ALTERNATOR

| SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS |                                   |
|-------------------------------------------------------------------|-----------------------------------|
| Continuous power                                                  | 410 kVA                           |
| Stand-by power                                                    | 450 kVA                           |
| Three phase voltage                                               | 380-415 Vac                       |
| Frequency                                                         | 50 Hz                             |
| Cos $\varphi$                                                     | 0.8                               |
| Model A.V.R.                                                      | Digitale MEC-20                   |
| Voltage regulation acc.                                           | $\pm 0,5 \%$                      |
| Sustained short circuit current                                   | 3 In A                            |
| Transient dip (100% load)                                         | < 20 %                            |
| Recovery time                                                     | < 0,3 sec                         |
| Efficiency at 100% load                                           | 93.7 % (400V - Cos $\varphi$ 0,8) |
| Insulation                                                        | Class H                           |
| Connection - Terminals                                            | Star - N°12                       |
| Electromagnetic compatibility ( R.F.I. suppr.)                    | EN 55011                          |
| Waveform distorsion - THD                                         | < 2 %                             |
| Telephone interference - THF                                      | < 2 %                             |

| REACTANCES (410 kVA - 400V)      |                        |
|----------------------------------|------------------------|
| Direct axis synchronuos - Xd     | 330 %                  |
| Direct axis transient - X'd      | 29.5 %                 |
| Subdirect axis transient - X''d  | 13.2 %                 |
| Quadrature axis synchronuos - Xq | 175 %                  |
| Quadr. axis subtransient - X''q  | 15.6 %                 |
| Negative sequence - X2           | 14.4 %                 |
| Zero sequence - X0               | 3.3 %                  |
| TIME CONSTANTS                   |                        |
| Transient - T'd                  | 0.14 sec               |
| Subtransient - T''d              | 0.014 sec              |
| Open circuit - T'do              | 1.6 sec                |
| Armature - Ta                    | 0.018 sec              |
| Short-circuit ratio Kcc          | 0.38                   |
| Grado di Protezione IP           | IP 23                  |
| Cooling air flow                 | 0.83 m³/sec.           |
| Coupling I Bearing               | Direct SAE 1 -14 - N°1 |

## GENERAL SPECIFICATIONS

|                           |                          |
|---------------------------|--------------------------|
| Fuel tank capacity        | 580 lt.                  |
| Running time (75% to PRP) | 8.5 h                    |
| Starter battery           | 24 Vdc (2x12 Vdc -180Ah) |
| IP protection degree      | IP 44                    |

|                                                |                          |
|------------------------------------------------|--------------------------|
| * Measured acoustic power LwA (pressure LpA)   | 97 dB(A) (72 dB(A) @ 7m) |
| * Guaranteed acoustic power LwA (pressure LpA) | 98 dB(A) (73 dB(A) @ 7m) |
| Performance class (ISO 8528)                   | G3                       |

\* Acoustic power according to European Directive 2000/14/CE

## CONTROL PANEL

- Controller AMF 25
- Controller supply switch
- Siren
- Emergency stop button
- TCM 35 remote control plug
- Four pole circuit breaker
- PAC (ATS) plug - Automatic control panel only
- Battery charger - Automatic control panel only
- Earth terminal (PE)

### EP6 CONTROLLER CHARACTERISTICS

|                       |                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating mode        | <ul style="list-style-type: none"> <li>• OFF - MAN. - AUTO - TEST</li> </ul>                                                                                                                                                                                                                                                                                                             |
| Display               | <ul style="list-style-type: none"> <li>• Graphic back-light LCD display 128x64 pixels</li> </ul>                                                                                                                                                                                                                                                                                         |
| LEDs                  | <ul style="list-style-type: none"> <li>• Gen-set voltage OK</li> <li>• Gen-set failure</li> <li>• GCB ON (only for Automatic transfer unit)</li> <li>• Mains voltage OK (only for Automatic transfer unit)</li> <li>• Mains failure (only for Automatic transfer unit)</li> <li>• MCB ON (only for Automatic transfer unit)</li> </ul>                                                   |
| Buttons               | <ul style="list-style-type: none"> <li>• START button</li> <li>• STOP button</li> <li>• FAULT RESET button</li> <li>• RESET HORN button</li> <li>• MODE selection button</li> <li>• Pulsante chiusura/apertura GCB button</li> <li>• Pulsante chiusura/apertura MCB button</li> <li>• N° 4 buttons for controller programming</li> </ul>                                                 |
| Generator Measures    | <ul style="list-style-type: none"> <li>• Voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3</li> <li>• Current : I1 - I2 - I3</li> <li>• Powers : kVA - kW - kVAR (totali e per fase)</li> <li>• Energy : kVAh - kWh - kVARh</li> <li>• Cos φ (medium and per phase)</li> <li>• Frequency</li> </ul>                                                                                       |
| Engine Measures       | <ul style="list-style-type: none"> <li>• Water temperature</li> <li>• Oil pressure</li> <li>• Fuel level</li> <li>• Rpm meter</li> <li>• Battery voltage</li> <li>• Maintenance</li> <li>• Hours meter</li> <li>• Starts number</li> </ul>                                                                                                                                               |
| Generator Protections | <ul style="list-style-type: none"> <li>• Overload</li> <li>• Overcurrent</li> <li>• Short circuit</li> <li>• Over-Undervoltage</li> <li>• Over-Underfrequency</li> <li>• Voltage asymmetry</li> <li>• Unbalanced current</li> <li>• Phase sequence</li> </ul>                                                                                                                            |
| Engine Protections    | <ul style="list-style-type: none"> <li>• Overspeed</li> <li>• High water temperature warning</li> <li>• Low oil pressure warning</li> <li>• Low fuel level warning</li> <li>• Over-Under battery voltage</li> <li>• Battery charge alternator failure</li> <li>• Start failure</li> <li>• Stop failure</li> <li>• Emergency stop</li> <li>• Low water level shutdown (option)</li> </ul> |

### AMF functions (Automatic control panel only)

- Measure mains voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3
- Measure mains frequency
- Three phase detection
- Over-Under mains voltage
- Over-Under mains frequency
- Voltage asymmetry
- Phase sequence
- Dual mutual stand-by application

### Features

- Event log and alarms
- 2 tests run scheduler (Automatic test or scheduled starts)
- Engine idle management (Idle)
- Remote Start and Stop
- Pre-heating
- 2 selectable languages (other languages available)
- Setpoints adjustable via controller buttons or PC
- Direct connection to engines with ECU via Can bus J1939
- Configurable inputs and outputs (only via PC)
- IP65 protection
- Operation temperature: -20°C / +70°C

### Communication

- RTU Modbus (optional board with RS232 & RS485 outputs is needed)
- TCP/IP Modbus (optional Ethernet board with RJ45 output is needed)
- SNMP Modbus (optional Ethernet board with RJ45 output is needed)
- Internet (optional Ethernet board optional is needed)
- GSM/GPRS (integrated Modem board optional is needed) for Gen-set remote control via SMS or internet

### CONTROL PANEL VERSION WITH OUTPUT SOCKETS

#### SOCKETS

Each socket is protect by own automatic switch.  
Circuit breaker for 125A and 63A sockets.  
GFI and circuit breaker 30mA for 32A and 16A socket.

- 1x 400V 125A 3P+T CEE
- 1x 400V 63A 3P+T CEE
- 1x 400V 32A 3P+T CEE
- 1x 400V 16A 3P+T CEE
- 1x 230V 16A 2P+T CEE
- 1x 230V 16A 2P+T SCHUKO

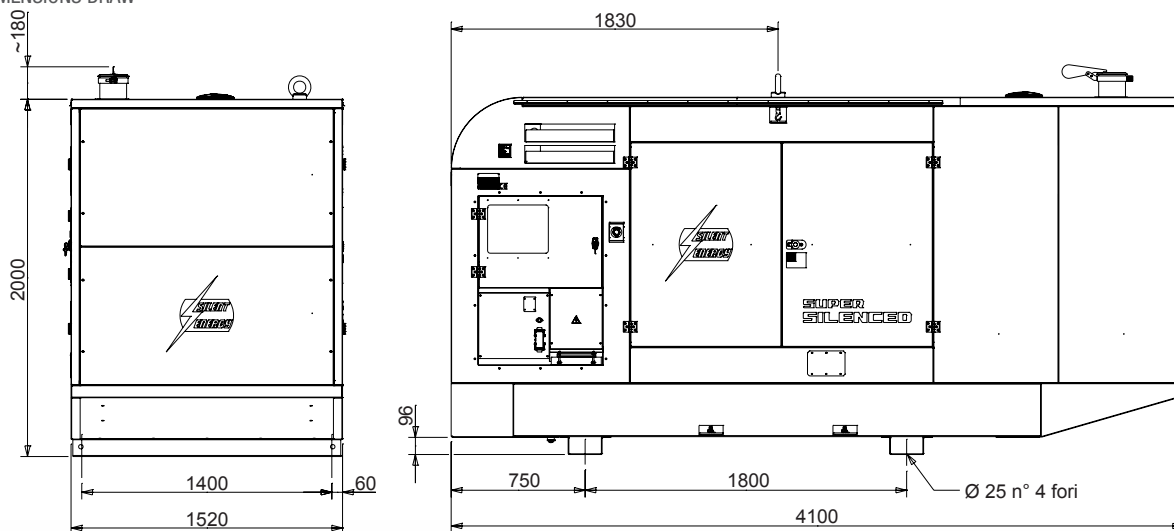
# WEIGHT - DIMENSIONS AND ACCESSORIES

GE 455 FSX

**DRY WEIGHT MACHINE:**  
• 4240 kg

Generating set pictured may include optional accessories.

## DIMENSIONS DRAW



### OPTIONS ON REQUEST

- Automatic transfer switch unit (ATS) PAC 550-M (800A)
- Remote control TCM35
- Earthing kit
- Container feet kit

### VERSIONS ON REQUEST

- Version with manual control panel 6 output sockets EC and SCHUKO (see Control board with output sockets section)
- Manual digital control panel (without sockets)
- Parallel switch board

### FACTORY INSTALLATION OPTIONS

- Engine water heater WH
- Low level water sensor
- 3-way valve fuel system with quick connection for external fuel tank supply
- Main battery switch
- Automatic fuel transfer pump
- PMG - permanent magnet alternator excitation
- Electronic leakage relay
- Isometer
- Volt adjustable from control panel
- Deadening kit
- Plug-in board with RS232 & RS485 output for RTU Modbus protocol
- Ethernet plug-in board with RJ45 output for TCP/IP Modbus protocol - SNMP Modbus - Internet
- Plug-in board with integrated GSM/GPRS Modem for Gen-set remote control via SMS or Internet