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PATLON
AIRCRAFT & INDUSTRIES
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ITW GSE

4400 DIESEL GPU

60-90 kVA GPU
Cummins diesel engine
ITW GSE generator
Tier 3 or Tier 4



It's all about connections





POWER WHEN YOU NEED IT

The ITW GSE 4400 provides a quiet, fuel efficient apron power system. The ITW GSE 4400 is a mobile, diesel powered GPU that's ideal for supplying power to all aircraft at places wherever you need an independent external power source. ITW GSE 4400 units are easy to move, remarkably tough and supremely reliable.

EASY TO MANEUVER

The new low profile design, mounted on a towable trailer with fifth wheel steering, makes this ultra reliable engine driven GPU easy to maneuver around the congested apron areas of modern airports. Due to the low weight of the GPU, you can

tow it around even with small towing equipment thus reducing the total cost of ownership.

LESS FUEL, FEWER EMISSIONS

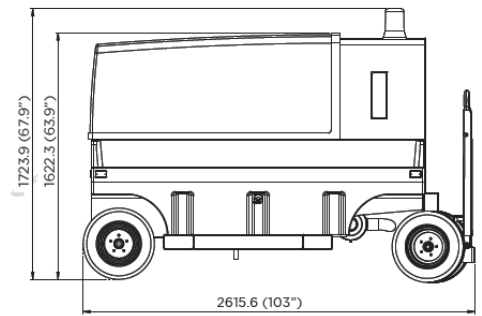
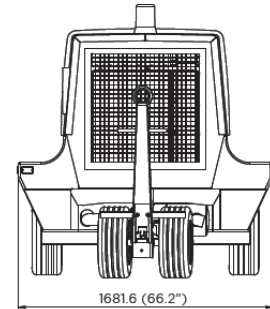
The low fuel consumption of the ITW GSE 4400 family results in big savings on your fuel costs as well as reducing harmful engine emissions.

RUGGED AND DURABLE

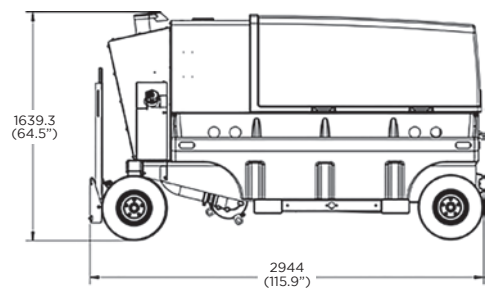
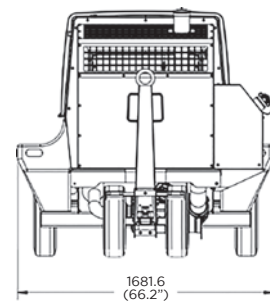
The weatherproof canopy is made of medium density polyethylene that can withstand just about any impact, and is fully recyclable. This tough canopy can withstand collision damage and chemical spills at operating temperature.



**Tier 3
60-90 kVA**



**Tier 4
90 kVA**



It is also resistant to UV light and will maintain its smart appearance throughout its service life. The cable storage trays are made of the same material, and also act as protective bumpers, with the benefit that they will never corrode if scratched. In the event of major damage, it is very easy to replace the canopy or cable trays. The canopy is designed with rounded edges that are safer for operators as well as reducing the risk of damaging aircraft, vehicles or other apron equipment in the event of collision. Last but not least, the double skin canopy serves as noise dampening insulation, keeping operations quiet and helping ensure a better working environment.

Dimensions are shown in mm and (inches)

SPECIFICATIONS

ITW GSE 4400 Tier 3 / Tier 4 diesel GPU

Engine

- Cummins QSB 4.5 diesel
- engine operating at 2000 RPM.
- **Tier 3:** EU Stage 3A certified
- **Tier 4:** EU stage 4 certified
- Turbocharged 4-stroke, inline 4 cylinder common rail fuel system
- Full application approval by Cummins
- 24 VDC battery system
- Electronic governor system (via the engine's ECM)
- Intake manifold pre-heater for cold weather starting
- **Tier 3:** 171HP (90 kVA); 130HP (60 kVA)
- **Tier 4:** 155HP (90 kVA)

Engine Protection

- Low oil pressure shutdown
- High coolant temperature shutdown
- Low coolant level warning
- Intake air restriction indication
- Low fuel warning

Environmental

- Operating temperature: -25°F to +125°F (-32°C to +52°C)
- Relative humidity: 10-95% non-condensing
- No altitude derating required up to **Tier 3:** 10,000 ft (3,000 meters) **Tier 4:** 12,000 ft (3,658 meters) when in normal operating range

Performance

- **Tier 3:** Continuous rating. 60 kVA (48 kW), 90 kVA (72 kW)
- **Tier 4:** Continuous rating. 90 kVA (72 kW)
- **Tier 3 & Tier 4:** 3 phase, 4 wire, 115/200 V
- Meets or exceeds MIL-STD-704F, SAE ARP 5015A and ISO 6858 power quality requirements
- Line drop compensation assures proper voltage at aircraft load

Tier 3 Dimensions & Weight

- Length: 103" (2,615 mm)
- Width: 66.2" (1,682 mm)
- Height: 63.9" (1,622 mm)
- Without ARU: 4000 lbs. (1,814 kg), dry weight, no cables
- With ARU: 4300 lbs. (1,950 kg), dry weight, no cables

Tier 4 Dimensions & Weight

- Length: 115.9" (2,944 mm)
- Width: 66.2" (1,682 mm)
- Height: 64.5" (1,639 mm)
- Without ARU: 4200 lbs. (1,905 kg), dry weight, no cables
- With ARU: 4500 lbs. (2,041 kg), dry weight, no cables

Color

- White canopy, black cable trays, galvanized chassis. Other colors available on request

Instrumentation

- Icon based ITW GSE user interface
- 5-Button directional menu arrow keypad
- Multiple language capability
- Simple operation/status/prompts
- Setup functions
- Engine data
- Output power data
- Fault data
- Memory recall

Protection

- Per MIL-STD-704F, SAE ARP5015, and ISO 6858
- Over / under voltage
- Over / under frequency
- Overload

Overload

- 80% load at PF > 0,8-1,0 - continuous
- 100% load at PF > 0,7-0,8 - continuous
- 100% load at PF > 0,8-1,0 - 5 minutes

- 100%-120% load at PF > 0,7-0,8 - 10 seconds
- 120%-150% load at PF > 0,7-0,8 - 2 seconds
- Individual outputs: 217/325 amps.
- 5 minutes (60/90 kVA)

Standard Features

- ITW GSE designed and manufactured generator
- ITW GSE user interface
- Fifth wheel steering
- No load shut down
- 53 gallon fuel tank (200 L) with at least 8 hrs. run time at max full load
- Fork lift pockets
- Tow bar with parking brake
- Sliding canopy for ease of access

Standards

- **Tier 3:** EPA Tier 3/CARB Tier 3 EU Stage III A
- **Tier 4:** EPA Tier 4(f)/CARB Tier 4 EU Stage IV
- MIL-STD-704F, SAE ARP5015 and ISO 6858
- BS2G219
- ISO 9001-Certified manufacturer

Options

- 28.5 VDC Active rectifier (simultaneous operation with 400 Hz), 600 amps continuous, 2000 amps peak
- Unit operating beacon
- Low fuel beacon
- Clearance lights
- Block heater
- Battery blanket
- Second 400 Hz output
- DIN40 towing eye
- Military Interlock
- Towbar Interlock
- Tie down rings

EASY ACCESS

The engine, generator, controls, batteries and cables are all easily accessible but completely protected under a tough, corrosion free canopy made of resilient medium density polyethylene. All maintenance points that need to be checked regularly (fuel, oil, water, etc.) are easy to access. The entire canopy can be removed by hand in less than two minutes, no hoists or cranes needed.



DESIGNED TO BE RECYCLABLE

Major components such as the canopy and cable trays are manufactured from fully recyclable polyethylene, which is unique in the ground power industry. Unlike other commonly used materials, Polyethylene components can be easily recycled and reused, minimising both environmental impact and end of life disposal costs.



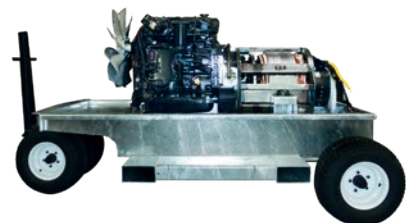
OPERATOR/TECHNICIAN FRIENDLY

The ITW GSE user interface is easy and intuitive. This is your guarantee for correct operation and on-time aircraft departures. The operator only has to press the combined start/stop button. Also, he can monitor various parameters such as voltage and current at the display screen. For easy setup and maintenance purposes, there is a deeper level dedicated for the technician. The operator interface is common from one ITW GSE product to another. Therefore, airport staff familiar with one ITW GSE product can easily switch to another as the icons and display are the same.



RELIABLE

The 400 Hz three phase synchronous generator is designed, manufactured and supported by ITW GSE. Everything about the ITW GSE 4400 GPU is built for toughness, reliability and a long service life. To maximise reliability and reduce your need for spare parts, ITW GSE has drastically reduced the number of components. This makes troubleshooting quick and easy, allowing the GPU to be back in service quickly.



DOWNLOADS AND UPDATES

The software based control system means your ITW GSE 4400 GPU can be updated and given additional capabilities in the future, simply by transferring new software from a USB stick/flash drive.





POWER TWO AIRCRAFT WITH JUST ONE GPU?

Yes with the ARU option for the ITW GSE 4400 GPU

Often, the same parking position accommodates a large mix of aircraft during a day. Typically, a parking position would require a 400 Hz source in the morning when the bigger aircraft are docking – but 28 V during other times of the day. If this is your requirement, the ITW GSE 4400 GPU is the answer.

The ITW GSE 4400 is capable of delivering 400 Hz and regulated 28 VDC power, simultaneously and independently! The 28 V Active Rectifier Unit (ARU) – available as a standard option – delivers superior voltage quality at the aircraft plug without jeopardizing the 400 Hz voltage. It goes without saying that the ITW GSE 4400 will power your aircraft, whether a narrow body or a turbo prop, whenever you need it!

Output Specifications, 28 VDC ARU

- Voltage : 28 VDC
Max. output power for complete unit is limited to the nominal rating of the 400 Hz part of the unit
- Current : 600 A continuously
- Voltage regulation : < 0.5%
- Voltage ripple : < 2%
- Voltage transient recovery complies with ISO 6858 / MIL-704F
- To protect the aircraft, the output voltage is decreased by 2 V per 600 A in the overload range 600-2400 A, complies with ISO 6858

Setup

- Output voltage: 19-33 V
- Voltage compensation: 0-3 V per 600 A
- Current limit : 300-2400 A in selectable steps of 50 A, 100 A, 200 A or 300 A

Protection:

- Rectifier temperature too high
- Short circuit at output
- Over and under voltage at output
U < 20 VDC for more than 4 seconds
U > 32 VDC for more than 4 seconds
U > 40 VDC for more than 150 ms

Weight:

- Additional weight to unit: 300 lbs / 137 kg

Norms and Standards

- DFS400 Specification for 400 Hz aircraft power
- ISO 6858 Aircraft ground support electric supplies
- BS 2G 219 General requirements for ground support equipment
- MIL-STD-704F Aircraft electric power characteristics
- SAE ARP 5015 Ground equipment 400 Hz ground power performance requirement
- EN2282 Aerospace series characteristics of aircraft electrical supplies
- EN62040-1-1 General & safety requirement
- EN61558-2-6 General & safety requirement
- EN61000-6-4 Electromagnetic compatibility Generic emission standard
- EN61000-6-2 Generic immunity standard
- EN1915-1&2 Machinery; general safety requirements
- EN12312-20 Machinery; specific safety requirements