

# GPU-409-iBS

## 400Hz Battery Ground Power Unit

The Smart Airport Systems GPU-409-iBS is a zero emission, efficient and almost silent battery powered 400Hz GPU.

It is the ideal solution for hangar and remote aircraft positions where there is no access to fixed 400Hz infrastructure.

The unit is offered with 3 different battery capacity options to allow for different autonomies and turnaround times. It can be recharged from almost any 3-phase 50/60Hz supply and it can provide power to the aircraft while it is being recharged.

During ramp operations, whether wearing heavy gloves or operating in bright sunshine, the large 5.7" LCD display and oversized panel controls make power selection and system monitoring easy.



## Lifecycle iBS Batteries



Each iBS Lithium Ion battery pack has a capacity of 22kWh making it an ideal solution for multiple GSE applications.

Currently, there are over 1300 iBS battery packs operating worldwide in multiple types of GSE equipment.

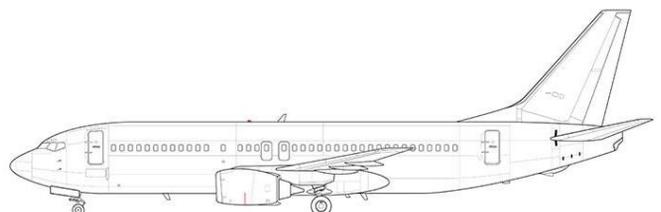
The iBS battery packs can be used as second life alternatives for different mobile units. After its first life in a GPU, they can be transferred to tractors, push backs or loaders.



## Features

- ✔ Unity output power factor
- ✔ Capacity: 132kWh, 154kWh and 176kWh options
- ✔ 95% efficiency (inverter and charger)
- ✔ Large 5.7" LCD display
- ✔ Link™ compatible for remote monitoring
- ✔ Operates with any 400Hz aircraft
- ✔ Automatic line drop compensation
- ✔ Performance exceeds ISO 6858
- ✔ Pluggable Power Module for easy first line maintenance

**Typical aircraft:** A220, A319, A320, B737, A350, A340, A380, B787, B777, B747, B737, B767. Any 400Hz aircraft known (some aircraft will require more than one GPU).



Mobile unit for major airlines, airports, MROs and air shows

\* At 100% load, 0.8PF

# Specifications

## INPUT (Charger)

Number of Phases	3Ø + Earth
Voltage	360 – 525 VAC
Frequency	50/60Hz (±10%)

## OUTPUT

Number of Phases	3Ø + Neutral & Earth
Power Factor	0.7 lag – 0.95 lead
Voltage	200 / 115 VAC
Frequency	400 Hz (±0.001%)
Crest Factor	1.414% ±0.04
Voltage Adjustment	112-119.5 VAC (L – N) Up to 10% automatic voltage line drop compensation
Static Voltage Regulation	< 0.5 for balanced load (up to 30% unbalanced load)
Dynamic Voltage Regulation	to MIL-STD-704F
Voltage THD	< 1.5% with linear load (1% typ.)
Phase Angle Symmetry	120° ±1% for balanced load. 120° ±2% for 30% unbalanced load

## Charge Time (from 80% DoD)

Input Supply	6 Batteries [132 kWh]	7 Batteries [154 kWh]	8 Batteries [176 kWh]
32 Amps	5h 19min	6h 12min	7h 5min
63 Amps	2h 39min	3h 6min	3h 32min
125 Amps	1h 19min	1h 33min	1h 46min

## Turnaround Capability\*

Aircraft	6 Batteries [132 kWh]	7 Batteries [154 kWh]	8 Batteries [176 kWh]
A320	4	4.7	5.4
A321	4	4.7	5.4
B737	5	5.9	6.7

### \* Assumptions:

- 60 minutes turnaround time
- 25% derate over 3000 cycles
- Based on measured typical aircraft loads
- Up to 80% DoD

## EFFICIENCY (frequency converter and charger)

>95%	50 – 100% load at 0.8PF
>93%	25 – 50% load at 0.8PF
>90%	< 25% load at 0.8-1PF
Standby losses < 150W	

## GENERAL

Operating Temperature	-15°C to +55°C (5°F to +131°F)
Relative Humidity	10 – 100%
Altitude	2000 metre (6560 ft) before derating
Protection Level	IP 55
Colour	RAL 7000 / 7011
Noise Level	< 65dBA @1m
MTBF	100,000 hrs
MTTR	15 min
Filtration	Polyurethane foam media

## DIMENSIONS AND WEIGHT

### 6 Batteries [132 kWh]

Dimensions: L 2915mm (114.7in) x W 1712mm (67.4in) x H 1750mm (68.9in)

Weight: 2300kg (5071lbs)

### 7 Batteries [154 kWh]

Dimensions: L 2915mm (114.7in) x W 1712mm (67.4in) x H 1750mm (68.9in)

Weight: 2500kg (5512lbs)

### 8 Batteries [176 kWh]

Dimensions: L 2915mm (114.7in) x W 1712mm (67.4in) x H 1750mm (68.9in)

Weight: 2700kg (5952lbs)

## STANDARDS

EN 62040-1	Safety (CE)
EN 61000-6-4	Emissions (CE)
EN 61000-6-2	Immunity (CE)
EN 61558-2-6	Safety (CE)
EN 61619:2017	Li-Ion Battery safety requirements
DFS 400	Specification for 400Hz aircraft power
ISO 6858:2017	Aircraft ground support electric supplies
BS 2G 219	General requirements for ground support equipment
MIL-STD-704	Aircraft electric power characteristics
SAE ARP 5015	Ground equipment 400Hz ground power performance requirement
EN 12312-20	Aircraft ground support equipment requirements

## OPTIONS

- 🔗 Link™ remote monitoring system
- 🔗 Custom length input and output cables
- 🔗 Second 400Hz output
- 🔗 28V DC output
- 🔗 Military interlock