

Intensium 1

1U rack-mount lithium-ion battery systems for telecom High Power - High Energy

Intensium 1 has been designed to suit the various power and energy requirements to back-up telecom equipment.

Its unsurpassed compactness leaves ample room for the value-generating equipment in the cabinet. With its reduced volume, top reliability and ease of operation, Intensium 1 represents a breakthrough in the way batteries are designed, installed and operated in various applications (micro-BTS, macro-BTS, ONU, HFC, RT, CPE,...)



48 V, 1U battery system

Integrated System

Intensium 1 integrates power, safety, management and communication into a stand-alone rackable battery system, which offers the benefits of Saft Li-ion technology in a qualified industrial design: Intensium 1 provides maintenance-free energy storage in a reduced volume, combining high operational reliability with outstanding life time under the most difficult environmental conditions.

Features

- Hot-pluggable, rack-mount ETSI format
- Integrated 48 V system ensuring Power and Energy in 1U
- Parallel operation
- Built-in battery control for efficient operation
- 5-level redundant safety
- Comprehensive communication
- Compatible with standard telecom rectifiers

Benefits

- More cabinet space for value-generating equipment
- Less weight for rooftop or pole-mounted sites
- Easier site planning and installation
- Simplified power systems (no BFU required)
- High operational reliability
- Long working life
- Preventive but not premature battery replacement at end of life
- Optimized supervision strategy

Intensium 1 Power

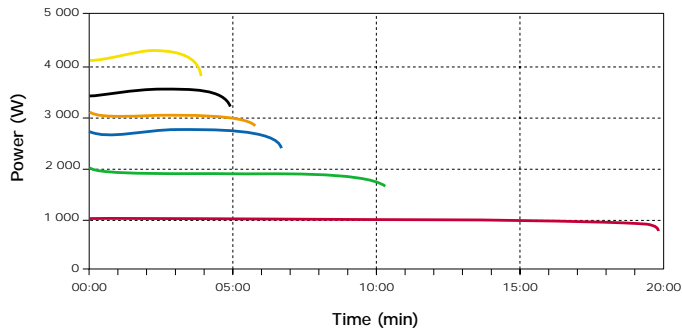
	Intensium 1 Power 1500	Intensium 1 Power 3000
Nominal characteristics		
Nominal voltage (V)	48	48
Capacity* (C/8) (Ah)	3.5	7.0
Energy* (C/8) (Wh)	185	370
Power* (5 min) (kW)	1.5	3.0
Mechanical characteristics		
Width (mm)	213 (half-width 19")	426 (19"compatible)
Height (mm)	44 (1U)	44 (1U)
Depth (mm)	350	350
Weight (kg)	4.5	8.0
Electrical characteristics		
Voltage window (V)	40 to 59	40 to 59
Charge voltage range (V)	54.6 to 57.0**	54.6 to 57.0**
Max. permanent discharge current (A)	35	70
Recharge time (h)	≤12	≤12
Loads at various backup times		
5 min* (W)	1500	3000
8 min* (W)	1000	2000
20 min* (W)	450	900
30 min* (W)	300	600
Operating conditions		
Lifetime at +20°C perm. (+68°F)	10 years	
Lifetime at +40°C perm. (+104°F)	5 years	
Maintenance requirement	Zero maintenance throughout lifetime	
Storage duration	12 months +25°C/+77°F (no electric maintenance)	
Operating temperature	-30°C*** to +60°C/-22°F*** to +140°F	
Storage temperature	-40°C to +65°C/-40°F to +149°F	
Seismic requirement compliance	GR-1089-CORE Zone 4	
Transport regulation compliance	EN 62 281 - Equivalent to applicable UN regulation	
Protection class	IP 30	

* Ufloat 57.0 V, Ucutoff 42 V, +20°C/+68°F

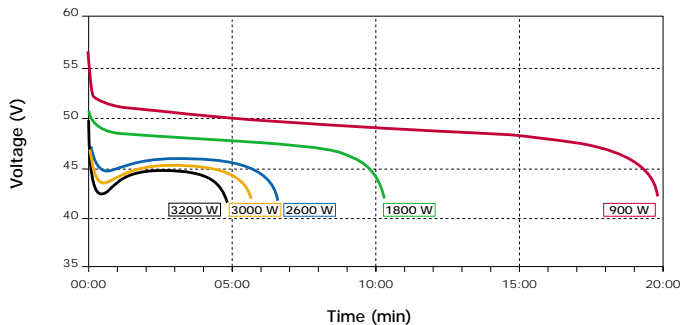
** Available capacity is reduced at charge voltages below 57.0 V

*** Special cell version for low-temperature operation

Intensium 1 Power 3000 - Available backup time at various loads*



Intensium 1 Power 3000 - Discharge performance at various loads*



* (Ufloat 57.0 V, Ucutoff 42 V, +20°C/+68°F)

Intensium 1 Energy

	Intensium 1 Energy 350	Intensium 1 Energy 700
Nominal characteristics		
Nominal voltage (V)	48	48
Capacity* (C/8) (Ah)	5.7	11.4
Energy* (C/8) (Wh)	300	600
Mechanical characteristics		
Width (mm)	213 (half-width 19")	426 (19"compatible)
Height (mm)	44 (1U)	44 (1U)
Depth (mm)	350	350
Weight (kg)	4.8	8.6
Electrical characteristics		
Voltage window (V)	40 to 59	40 to 59
Charge voltage range (V)	54.6 to 57.0**	54.6 to 57.0**
Max. permanent discharge current (A)	12	24
Recharge time (h)	≤12	≤12
Loads at various backup times		
30 min* (W)	500	1000
1 hour* (W)	270	540
2 hours* (W)	140	280
4 hours* (W)	72	144
8 hours* (W)	37	75
Operating conditions		
Lifetime at +20°C perm. (+68°F)	10 years	
Lifetime at +40°C perm. (+104°F)	5 years	
Maintenance requirement	Zero maintenance throughout lifetime	
Storage duration	12 months +25°C/+77°F (no electric maintenance)	
Operating temperature	-30°C*** to +60°C/-22°F*** to +140°F	
Storage temperature	-40°C to +65°C/-40°F to +149°F	
Seismic requirement compliance	GR-1089-CORE Zone 4	
Transport regulation compliance	EN 62 281 - Equivalent to applicable UN regulation	
Protection class	IP 30	

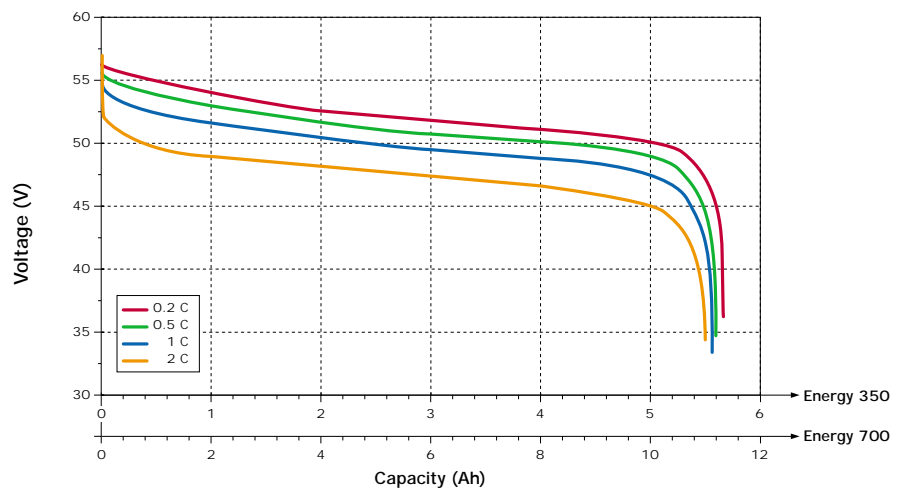
* Ufloat 57.0 V, Ucutoff 42 V, +20°C/+68°F

** Available capacity is reduced at charge voltages below 57.0 V

*** Special cell version for low-temperature operation

Intensium 1 Energy 350 and 700

Typical discharge at +20°C/+68°F after charge at 57.0 V



Functional characteristics

Saft Li-ion technology

MP 176065 HD (high drain) and HE (high energy) cells using proven cobalt-based lithium-ion technology.

- Outstanding working life at high temperature
- Stable internal resistance over entire life
- Industrial production for both defense and civil high-tech applications
- UL 1642 certified
- 28-cell assembly: minimal connections for increased reliability

Control for efficient operation

- Active vs. sleep (storage, prolonged outage) modes
- Charge/Floating/Discharge management
- Cell balancing

Mechanical interface

- ETSI 19 inches, 1U rack-mount design
- Installation on standard telecom equipment racks

Communication

The battery system informs the user or the application, either via communication interface (CANbus, RS232, dry-contact ...) or visually (LEDs on front panel):

- State of charge, state of health
- Alarm level (minor, major), alarm reason (abusive conditions, failure, low SOC)
- Operating conditions (voltage, temperature, identification number)

Safety

5-level redundant safety design to cope with component failure or abusive conditions:

- Electronic board at battery system level
- Electronic board at 7-cell pack level
- 3 levels on **each** cell (current breaker, shutdown-effect separator, mechanical vent)

Industrial vision

Intensium 1 has been developed and qualified to suit the demanding requirements of performance and operational reliability of our customers, who are manufacturing or operating high-value, industrial equipment.

Intensium 1 is made of proven components (cells, electronics) which are also employed in demanding space, automotive and other civil applications. Cell manufacturing is carried out on established industrial production lines. Manufacturing plants comply with the legislation in force in each country and with international quality standards (ISO 9001, QS 9000).

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