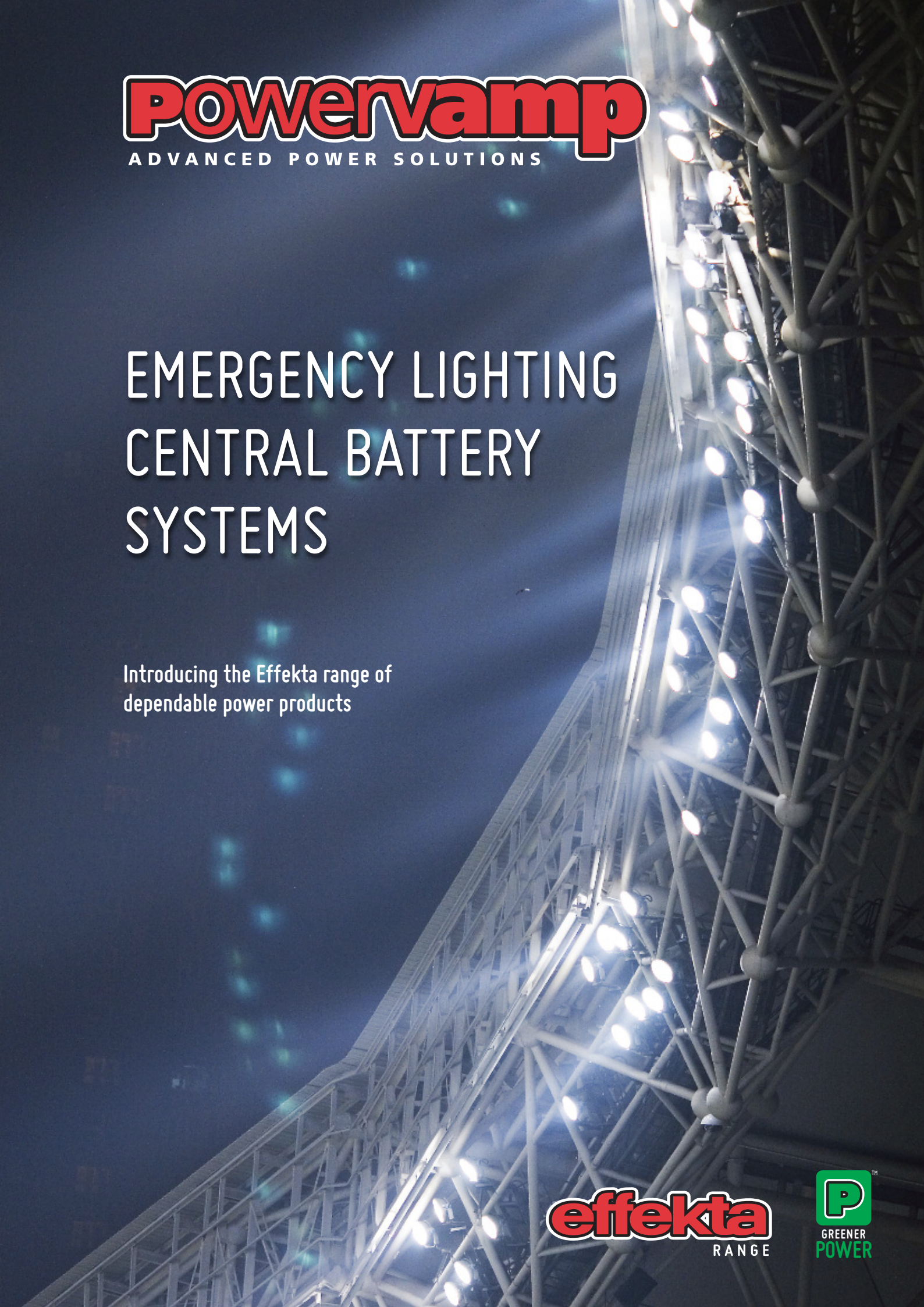


Powervamp

ADVANCED POWER SOLUTIONS

EMERGENCY LIGHTING CENTRAL BATTERY SYSTEMS

Introducing the Effekta range of dependable power products

effekta RANGE

GREENER POWER

EMERGENCY LIGHTING CENTRAL BATTERY SYSTEMS

Emergency lighting plays an essential role in all public buildings and workspaces.

If the mains electricity fails the emergency lighting central battery system cuts in automatically. Under UK law, there is an obligation for public buildings to be equipped with this facility.

Essential, instant, reliable power

Not only must the lighting be restored seamlessly at the first sign of a problem; the emergency system must also be able to maintain an acceptable lux level (brightness) for long enough to allow people to leave the premises safely. In most cases this is likely to be either one hour or three hours.

Powervamp's Effekta Range of emergency lighting power systems are designed to fulfil these legal obligations reliably and efficiently.

POWERVAMP — UK MANUFACTURE, FULL SERVICE BACKUP

The systems running emergency lighting are highly specialised, requiring banks of reliable maintenance-free batteries, along with electrical inverters and switching systems that deliver current cleanly and consistently, and an intelligent control centre to run the system efficiently.

Powervamp is a leading UK manufacturer of power systems and offers a wide range of products and services, from small single phase products to large industrial three phase products. We also have a dedicated factory trained service team to provide full after sales support

effekta RANGE

Effekta systems in high-risk task areas

For areas which are considered high risk, the required light levels are significantly higher than for general emergency lighting. This is difficult to achieve using self-contained light fittings as the light output is reduced when in battery mode (mains failure).

An Effekta static inverter system will maintain light levels at maximum brightness during a mains failure, dramatically reducing the risk of injury.

Effekta systems and ATEX

Emergency lighting is a requirement in areas where there is a high risk of explosion. ATEX-approved self-contained fittings are expensive and, if used in areas with high ceilings and where high-levels of emergency light are required by law, often can't produce the output levels required.

In this scenario, standard ATEX fittings can be used with a remote Effekta static inverter, where the static inverter is removed from the ATEX area to a safe remote plant / switch room.

Effekta systems and LED lighting

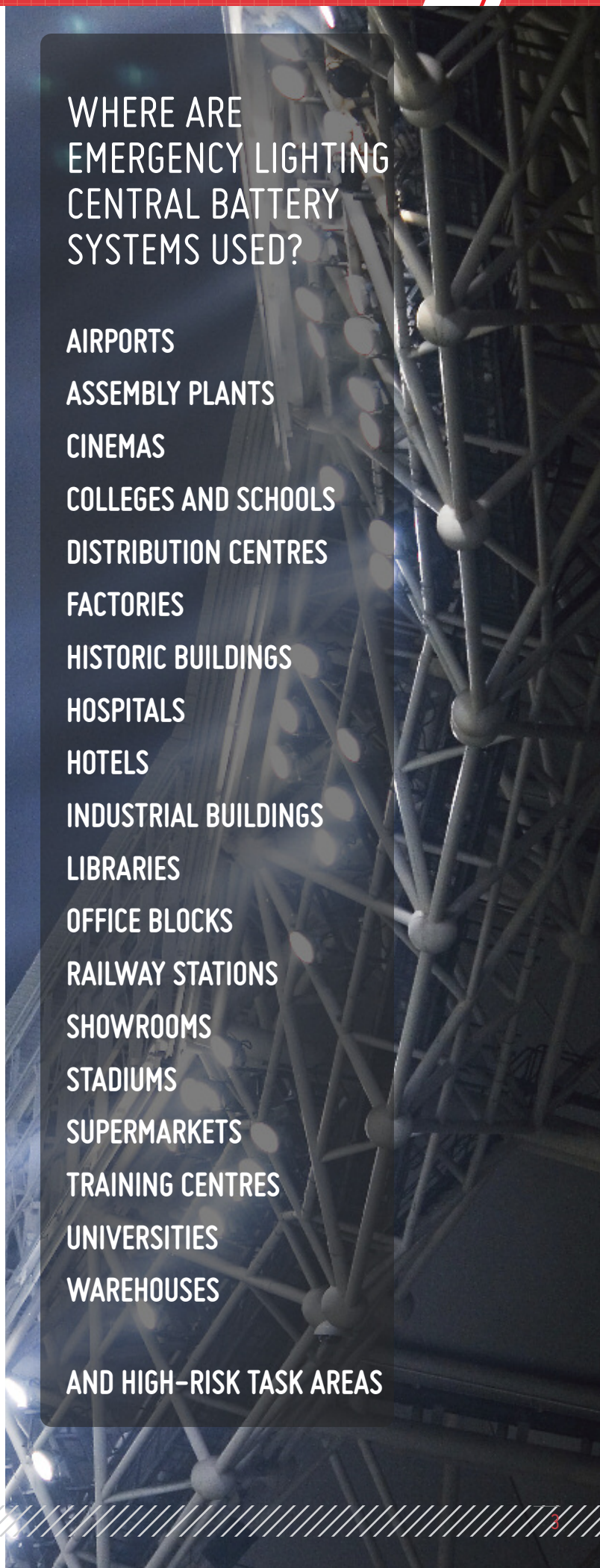
LED light fittings are increasingly being used in new-build as well as refurbish projects. Effekta static inverters are well suited to LED installations as there is often no space for local battery packs, which are typically pushed through the ceiling cavity. This makes maintenance of these types of fittings awkward as lamps need to be removed to gain access to the battery pack.

We have installed many static inverters with LED lighting connected, and have successfully dealt with a wide variety of existing set-ups (including poor power factors, high harmonics, and high inrush currents).

We are happy to assist and offer advice on LED selection and associated static inverter sizing.

Effekta systems and interior design

When using an Effekta static inverter, architects and designers have the freedom to choose any type of light fitting to suit any modern or period type lighting requirement.



WHERE ARE EMERGENCY LIGHTING CENTRAL BATTERY SYSTEMS USED?

AIRPORTS
ASSEMBLY PLANTS
CINEMAS
COLLEGES AND SCHOOLS
DISTRIBUTION CENTRES
FACTORIES
HISTORIC BUILDINGS
HOSPITALS
HOTELS
INDUSTRIAL BUILDINGS
LIBRARIES
OFFICE BLOCKS
RAILWAY STATIONS
SHOWROOMS
STADIUMS
SUPERMARKETS
TRAINING CENTRES
UNIVERSITIES
WAREHOUSES

AND HIGH-RISK TASK AREAS

The Effekta range

Powervamp's Effekta Range of emergency lighting power systems are used across the UK and overseas, in high risk task areas where loss of light endangers people's lives, providing emergency lighting in sports venues, hospitals and warehouses and other public spaces.

THE RANGE INCLUDES

- **EF 5 ELI range** Single Phase 150 – 1500 VA
- **EF 20 ELI** Single Phase 1.5 – 30.0 kVA
- **EF 33 ELI range** Three Phase 5.0 – 100.0 kVA
- **EF 20 CBS range AC/DC** 1.5 – 10 kVA central battery system

COMPLEMENTARY PRODUCTS

- **Changeover relays**
- **Hold off relays**
- **Sub-circuit monitoring**
- **Battery monitoring**

EF 5 ELI range

Single Phase 150 – 1500 VA

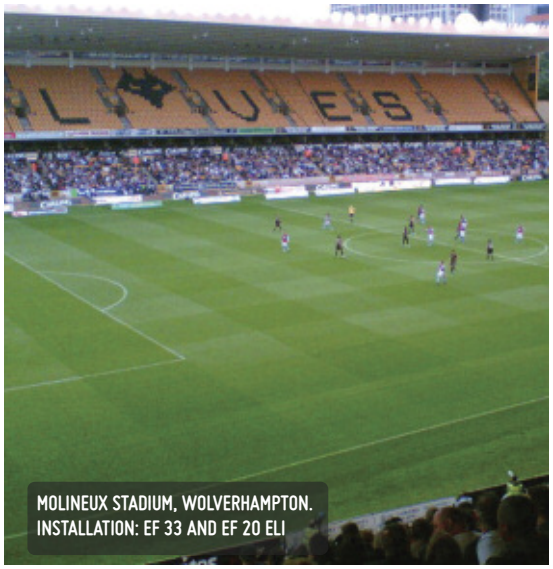
The **Effekta EF 5 ELI** performs automatic load tests of the luminaires by monitoring the current they draw. There is no requirement for additional control wiring making the EF5 system a very cost-effective alternative to a fully addressable installation.

Ratings start at 150VA increasing to 1500VA and can be used with standard mains light fittings. Four fused load paths with earth leakage detection can be monitored giving the user defined areas in which to easily locate faulty luminaires. Load flexibility allows any one load line to be maintained, non-maintained or switched.

FEATURES

- Automatic load monitoring
- Integral 4-way fused distribution
- Output earth leakage detection
- Comprehensive digital display
- Compact design with wall or floor mount enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 3 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use

GIBSON HOTEL, POINT1, DUBLIN
INSTALLATION: EF 20 ELI



MOLINEUX STADIUM, WOLVERHAMPTON.
INSTALLATION: EF 33 AND EF 20 ELI

DUBLIN AIRPORT INSTALLATIONS: TERMINAL 2:
EF 33 AND EF 20 ELI; TERMINAL 1: EF 20 ELI

EF 20 ELI range

Single Phase 1.5 – 30.0 kVA

EF 33 ELI range

Three Phase 5.0 – 100.0 kVA

The **Effekta EF 20 ELI** offers single or optional three-phase input with single-phase output.

The **Effekta EF 33 ELI** offers three-phase input with true three-phase output.

Systems can be configured as either passive or active standby and with contactor or static switch changeover (suitable for discharge lamps). In addition, high fault clearance can be achieved by configuring the output stage to suit the required fault current. With smaller systems, the batteries are housed within the system enclosure with separate battery enclosures or cladded battery stands for larger systems.

FEATURES

- Comprehensive digital display with data logger storing up to 200 events
- Compact floor standing enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 4 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional internal distribution
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use
- Optional three-phase input

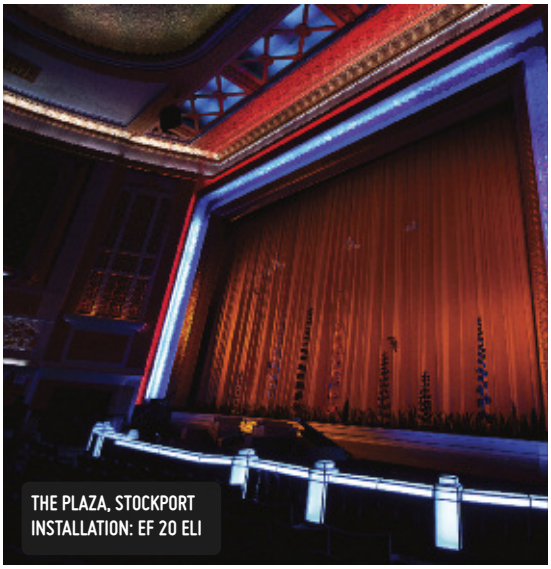
EF 20 CBS range

Single Phase 1.5 – 10 kVA (AC/DC)

The **Effekta EF 20 CBS** is a product designed to replace legacy central battery systems which typically require output voltages of 50, 110 or 220 volts. This type of system provides AC during mains operation, reverting to DC during mains failure. With smaller systems, the batteries are housed within the system enclosure with separate battery enclosures for larger systems.

FEATURES

- Comprehensive digital display with data logger storing up to 200 events
- Compact floor standing enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 4 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional internal double pole fused distribution
- Optional phase failure relay
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use



THE PLAZA, STOCKPORT
INSTALLATION: EF 20 ELI

10 DOWNING STREET, LONDON
INSTALLATION: EF 5

Consultation, service and maintenance agreements

Powervamp offers advice on emergency lighting installation, and can provide essential ongoing maintenance support over the life of the system — whether it is our Effekta Range system or that of another manufacturer.

POWERVAMP'S CENTRAL EMERGENCY LIGHTING SYSTEMS SERVICES INCLUDE:

- **Battery testing**
  Batteries are a critical part of any backup power system, experience shows that routine inspection and testing of batteries improves system reliability and can also save you money.
- **Commissioning**
  For total peace of mind and to ensure that your recent investment is correctly installed and optimised for site conditions, we encourage all clients to have their systems commissioned by one of our competent factory trained engineers.
- **Installation**
  Powervamp offers an installation service that caters for small scale installation, integrations and retro-fitting of all Effekta branded product.
- **Repair**
  Powervamp offers an onsite repair service for both contract and non-contract clients.
- **Routine maintenance**
  Experience shows that, with periodic inspections and routine maintenance, possible problems and faults can be detected before they develop into costly repairs or unscheduled breakdowns.
- **Site surveys**
  On occasion a site survey is required to ensure the correct system is selected and that the process from purchase to commissioning runs as smoothly as possible.
- **Bespoke solutions**
  Powervamp have full in-house design capabilities which allow us to adapt or modify our standard product to suit your requirements. This can be enclosure related, where perhaps there are space constraints or there is a requirement for stainless steel or an outdoor type enclosure. In addition, the electrical characteristics can be altered by firmware or hardware to suit a particular requirement
- **Technical support**
  We offer an Electrical Installation Condition Report and critique on existing installations and where required provide feedback particularly concerning emergency lighting design
- **Maintenance**
  We offer a wide range of maintenance contracts to suit individual client's requirements. As a contract customer, you are entitled to a range of benefits including:
  – Discounted labour rates
  – Discounted parts
  – Improved response times
  – Telephone support
  – Discounted new/replacement equipment

Powervamp's static frequency converters

Powervamp is a leading producer of electrical frequency converters, providing installations that ensure the mains voltage delivered to plant and equipment is appropriate.

Mains voltage and current frequency vary widely from one country to another. This poses a problem – not only for businesses wanting to buy electrical equipment and machinery from abroad, but also for manufacturers needing to do compliance testing on products destined for export.

The Powervamp range of frequency converters connect to the local power supply and feed current of the appropriate frequency and voltage for users' requirements.

Devices they serve can be anything from rare or specialised domestic equipment to medical equipment and factory plant and machinery.

Our equipment will switch between the UK's 50Hz output and the American 60Hz, and produce 400Hz output for demanding industrial applications. Some models allow users to vary both input and output frequency and voltage.

Powervamp is a global leader in the provision of systems to aircraft manufacturers and operators for avionics work, and to defence contractors.

POWERVAMP'S RANGE OF 28V AND 400HZ POWER UNITS

- Enviromentally-friendly power
  - No noise
  - No pollution
  - No maintenance
- Full technical support
- UK manufacturer
- Electric power is cheaper to run than diesel. This provides rapid return on investment

PV90-3 GPU

90kVA fixed electrical power unit

PV45 GPU

45kVA fixed or mobile electrical power unit

TRU 600/2000

28V/2000A transformer rectifier unit

PROGRAMMABLE AC POWER SUPPLIES

EF 1 PPS RANGE

Powervamp's AC programmable power supplies are designed for industrial product testing, avionics work and military applications. Adjustable voltage from 0-270V and frequency from 45-450Hz

*subject to terms and conditions

Powervamp and the Effekta Range

In 2011, Powervamp merged with Effekta UK Ltd, a company established in 1998 to manufacture its own central battery inverter systems, static frequency converters and bespoke uninterruptible power supplies.

Its initial highly successful EF20 single-phase frequency converter was soon augmented by the EF33, a three-phase product, and by a 90kVA 400Hz ground power unit (GPU).

Powervamp is internationally renowned for its frequency converters and aviation ground power systems, and is also a long-established UK-based specialist in portable engine starting systems for the automotive market.

The company continues to run its expanding frequency converter and emergency lighting system operations at the Barton-le-Clay facility.

GREENER POWER™

Powervamp's programme of Greener Power promotes the use of recyclable materials and products within the aviation industry.

Batteries used within Powervamp's pioneering DC carts and GPUs are made from 99% pure lead. Entire packs are constructed on average from 97% recycled material.

Replacing rotary type frequency converters and diesel ground power units with Powervamp solid state SFC & GPU technology makes a significant contribution to a greener business & airport environment. Reduced CO2, reduced noise, reduced costs – the compelling reasons to choose Greener Power from Powervamp.

For further information on our Greener Power programme, please visit www.powervamp.com

Powervamp group

effekta RANGE

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ISO 9001-9002 CERTIFIED ORGANISATION

GREENER POWER™