

Medipower™

Isolated Power Supply & Uninterruptible Power Supply



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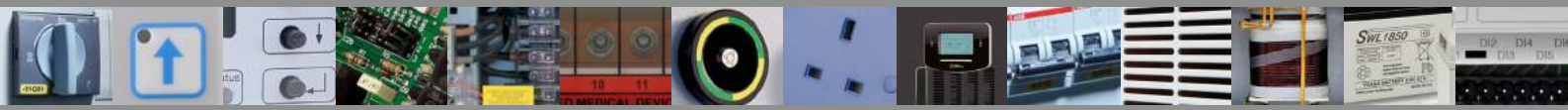
"Brandon Medical is a UK manufacturer and designer of world-leading technology for operating theatres, critical care areas and primary care institutions. For over 70 years, Brandon Medical has provided healthcare professionals with reliable, high quality and affordable medical equipment. Continuous investment in our products allows us to meet the ever-changing needs of our customers, the healthcare industry and the patients it serves."



Providing clinical solutions for your every need

Brandon Medical provide a comprehensive range of products covering four main specialities; Medical Lighting, Control & Power, Medical Architectural and Medical AV Systems. The Company works exclusively with the most reputable and reliable suppliers in the Control & Power sector, namely ESA Grimma for IPS and Riello for UPS to provide integrated solutions for medical locations.





Isolated Power Supply System – IPS

Also known as a medical IT system, an IPS system provides safe delivery of electrical power in accordance with HD60364-7-710 for group 2 locations or HTM06-01 for clinical risk category 5 areas.

The IPS system provides continuity of supply in the instance of the first insulation fault. IPS also offers additional protection from electrical leakage currents.

Uninterruptible Power Supply – UPS

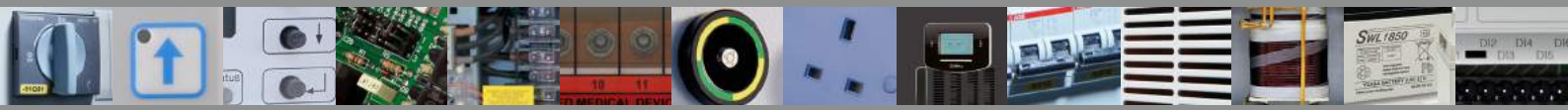
In accordance with regulations all UPS units provided are double online conversion with an autonomy of 60 minutes. Systems with larger autonomy are available.

The UPS also provides load protection from mains borne spikes, surges and electrical noise.

In order to provide maintainability in accordance with CDM guidance, UPS are typically supplied with an external maintenance bypass panel (EMBP).

Using energy stored in batteries, a UPS provides instantaneous emergency power to a critical load when the input power source or mains power fails.

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High Quality

ESA Grimma develop and produce system solutions that ensure safe energy distribution. These products are used and trusted worldwide.

Modular Construction

Ability to hot-swap and maintain individual components.

Powerful Messaging

Programmable content with up to 1000 alarm messages.

Smaller Footprint Space Requirements

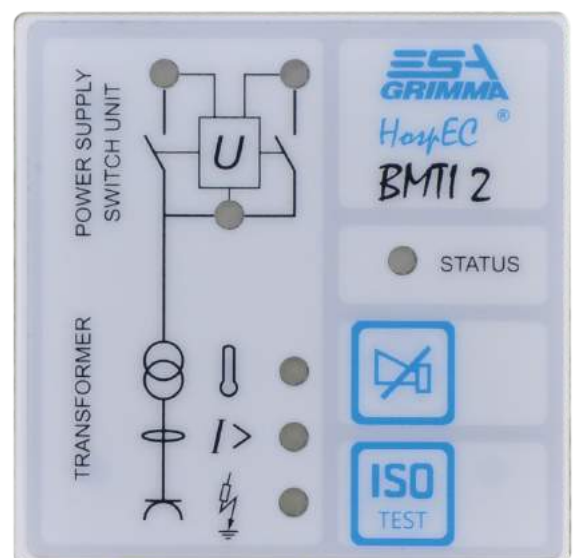
The compact system design allows for better use of valuable space.

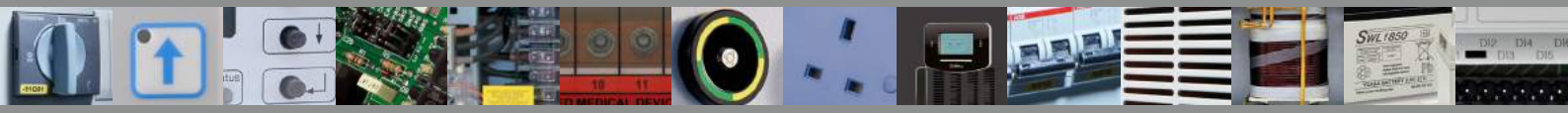
Flexible Number of Outgoing Ways

IPS system MCBs are available in functional blocks of 6, up to a maximum of 96.

Enhanced Warranty

IPS systems are provided with a warranty of up to 5 years, subject to there being planned preventative maintenance measures in place, offering additional peace of mind.





CANbus Network Connectivity

A CANbus (Controller Area Network bus) allows devices to communicate with each other without a host computer.

IPS alarm signals communicate seamlessly via CANbus, offering many benefits:

■ Significant Reduction in Field Wiring

CANbus can offer over 50% reduction in field cabling costs.

■ Multiple Master Alarm Functionality

The BMTi 5 Series remote alarm communicates with all other connected devices on the CANbus network. In the unlikely event of a failure any remote alarm can take precedence.

■ Speed of Response

CANbus is capable of identifying and reporting load insulation faults in 5-30 seconds.

■ Future-proof

Each CANbus network can be up to 2500m in length for linking multiple networks or future expansion.

■ High Resilience

CANbus continually monitors two-way communications between all CANbus connected devices, identifies any faults and provides parallel redundancy.

■ Advanced Event Logging

The IPS system timestamps and documents any fault reported for future reference or data extraction.

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Clinical Areas Applicable

Medical IPS systems should serve the following areas:

- Operating Theatre Suites and Recovery Areas
- Emergency Departments - Resuscitation
- Critical Care Areas – CCU, ITU, SCBU, NICU, HDU etc.
- Imaging Rooms – MRI, CT, PET, X-Ray, Cath Lab etc.



System Configurations

IPS transformers are available in 4,5,6,3,8 and 10KVA frame sizes:

- Panel configurations are Single (SIPS), Double (DIPS) and Triple (TIPS) solutions
- Floor and wall-mounted options

System Options

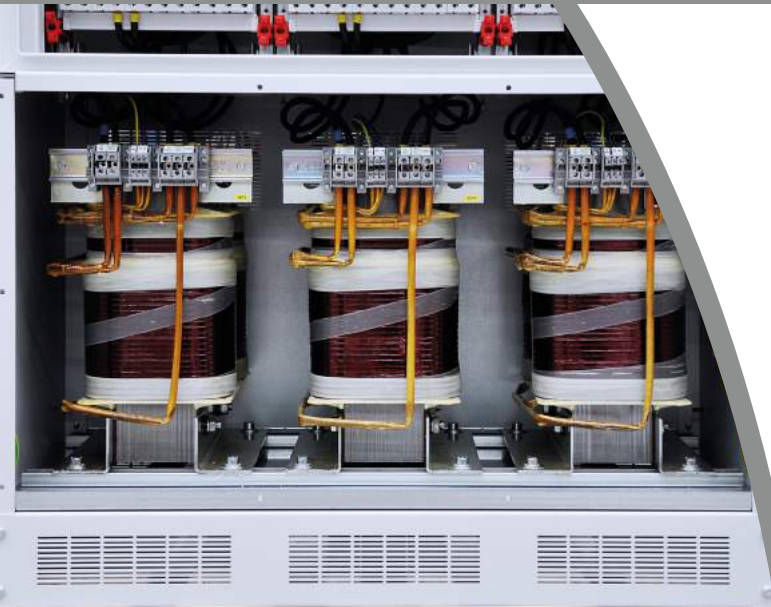
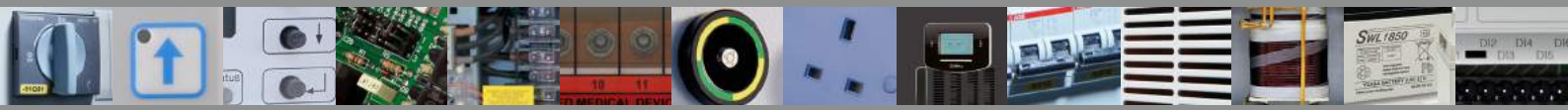
- Individual line insulation fault monitoring (IFS)
- Brandon Automatic Transfer System (BATS)
- BATS bypass switch
- Surge protection
- MCB tripped monitoring
- Network gateway



Annunciator Alarm Panels

A remote annunciator alarm panel is always installed either in the medical room and/or at the nurse station, providing both audio and visual indication.





IPS Key Components

■ Energy Efficient Transformers - TRX

Highly efficient transformers reduce running costs and allow for a long product lifespan.

■ Insulation Load Temperature - ILT

Monitors the 3 primary functions, namely network insulation, transformer load and transformer temperature.

■ Insulation Fault Detection Systems - IFS

IFS provides a simple and effective method to identify which outgoing circuit has an insulation fault.

■ Automatic Transfer System - BATS

In the event of failure of the primary power supply, BATS ensures that the secondary supply can be switched into service within 0.5 seconds.

■ CANbus Interface Panel

All equipment which can provide a volt free alarm status can be connected to the CANbus network via the CANbus interface.

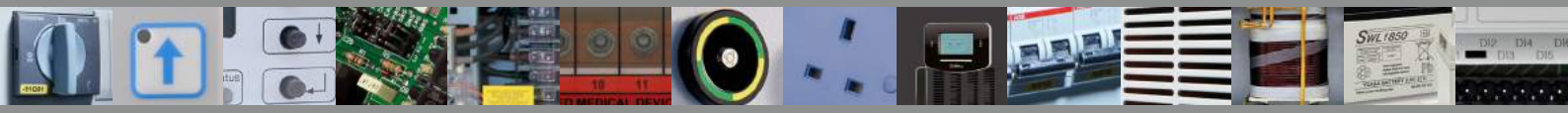
■ Surge Protection

Where IPS panels are considered a distribution board, double pole type II surge protection devices may wish to be considered.

■ Network Gateway

An optional feature, the web server provides an open protocol gateway to an external computer network and/or the internet.

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Comprehensive Product Range

UPS frame sizes from 6KVA to 500KVA to satisfy virtually all healthcare applications.

System Configurations

- Traditional
- Modular
- Various Topologies – N, N+1, 2N+1, N+N etc.
- Synchronous kit
- Parallel kit

Transformerless Design

All UPS supplied are based on transformerless technology.

High Efficiency

All Double Online Conversion UPS units offer up to 96.5% efficiency and a 0.9 power factor.

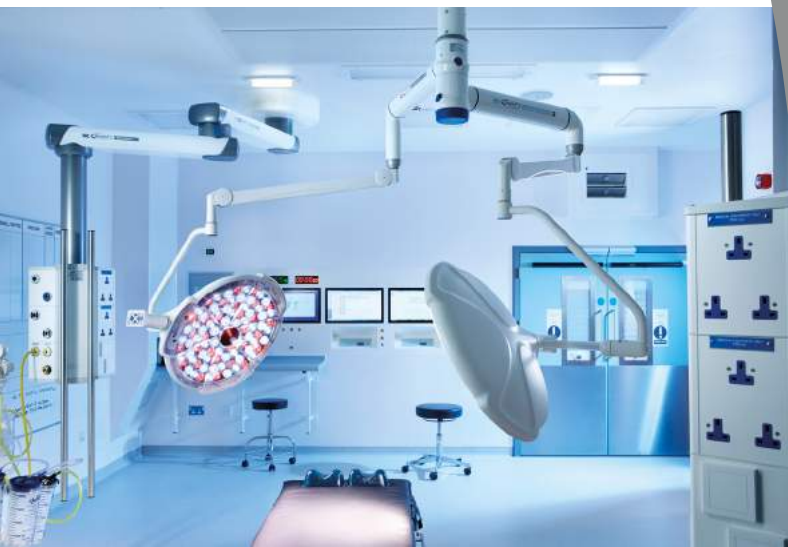
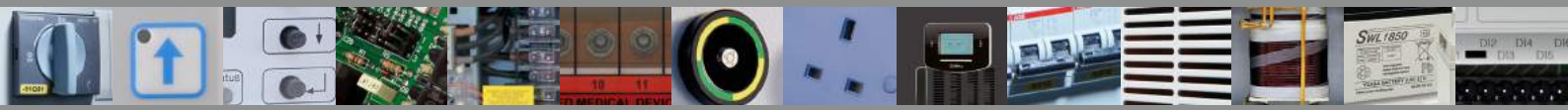
Market Proven

Riello have been active in the UK market for over 15 years, completing 1000s of healthcare installations.

Reliability

Mean Time Between Failure (MTBF) of over 250,000 hours within the UPS range.





High Quality

Riello UPS systems are internationally respected, supplying global solutions and guaranteeing energy for any critical application.

Smaller Footprint Space Requirements

The compact system design allows for better use of valuable space.

Advanced Communications

- Volt free contacts
- Simple network management protocol - SNMP
- MODbus
- RS232

Open Protocol

Allows end users to communicate without the requirement of a complex interface. End users are able to obtain competitive price year on year for planned preventative maintenance (PPM).

Enhanced Warranty

UPS systems are provided with a warranty of up to 3 years, subject to there being planned preventative maintenance measures in place, offering additional peace of mind.

Factory Tested

Our UPS systems are tested in our state-of-the-art factory to match all current regulations. Test certificates are available.

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Batteries

10 Year Valve Regulated Lead Acid Batteries

All medical UPS systems are supplied with batteries in accordance with BS60896 pt. 21 and 22. These 10 year VRLA batteries are constructed from a rigid, flame retardant casing with screw terminals.

Increased Battery Performance

UPS battery care system optimises battery management and obtains the best operating life possible.

Environmental Conditions

It is important that batteries are kept in a suitable environment to ensure battery design life is achieved.

Battery Monitoring Options

- Design life
- End of life
- Battery block monitoring
- Temperature labels
- Repeat duty within nominated timescale
- Battery autonomy countdown

On Site Load Bank Testing

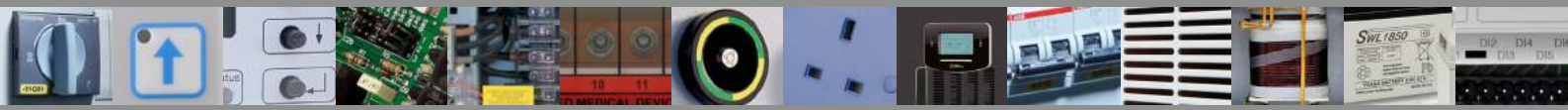
A service typically requested by end users and available on request.

Lithium Ion Battery Option

When compared against the traditional VRLA battery, the Lithium Ion Battery provides:

- Substantial reduction in footprint
- Increased operating temperature
- Provides a 20 year design life





Ancillary Equipment

External Maintenance Bypass Panels - EMBP

These panels provide total isolation for UPS maintenance with no disturbance to the load.

The EMBP allows the UPS to be switched out of service and connects utility supply directly to the load. This enables maintenance of the UPS to take place without interruption of supply.

EMBP are available with multiple configurations to satisfy any UPS design topology.

EMBP Available up to 160KVA

UPS frame sizes larger than 160KVA are typically supplied from separate input/output distribution boards.

Fast Response Negates Safety Key Requirement

EMBP panel allows the static bypass switch to operate within 6 milliseconds ensuring no backfeed to the UPS, thus negating the requirement and cost of Castell interlocking.

Safety Key Interlock Option

Where required by the specification, this option is available upon request.

Delta Zig Zag Transformers

Preferred solution for neutral generation close to UPS, also available upon request.



Medipower™ Earthing Ancillary Products



Equipotential Earth Bonding

Equipotential earth bonding is the practice of connecting equipment to a safe common earth to minimise the risk of significant touch voltages being generated in the vicinity of vulnerable patients.

HTM06-01 requires EBBs to be installed in all Group 1 and 2 / category 4 or 5 medical locations including critical care units, operating rooms, recovery areas and imaging suites.

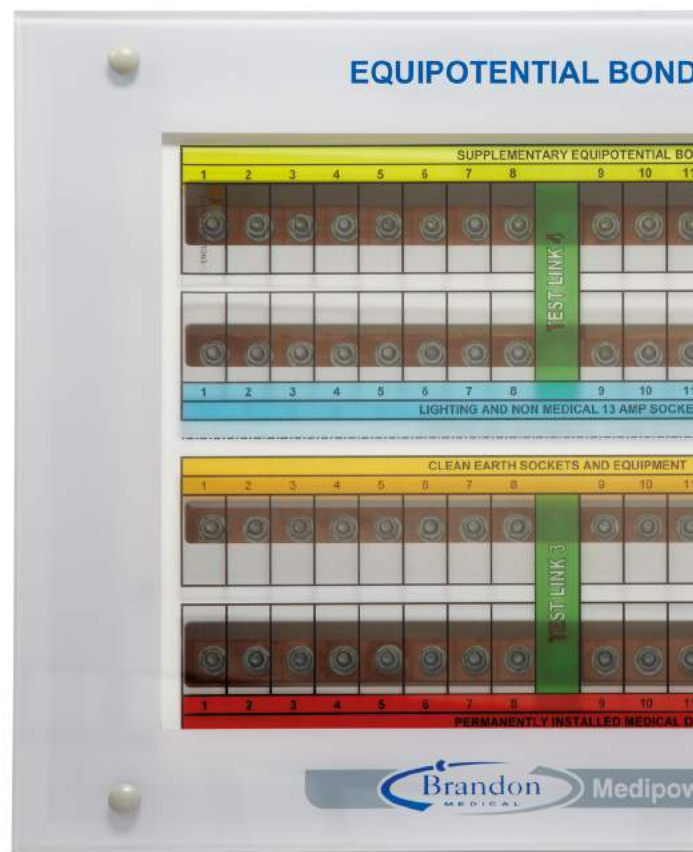
Earth Bonding Bar - EBB

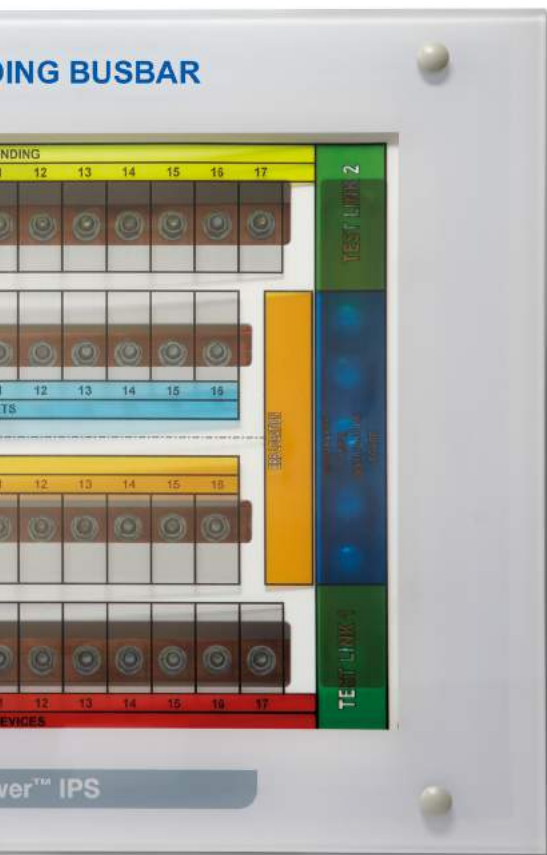
All exposed conductive surfaces within the medical location must be connected to the EBB by dedicated earth cables. In addition to all medical equipment, this will include items such as sinks, trunking, ceiling grids, cable trays, metal furniture etc.

The EBB is the key component in an equipotential bonding installation and helps protect patients from potential macro-shocks and micro-shocks.

Earth Bonding Bar Options

- 160A size
- 320A size
- 630A size
- Non-ferrous
- Flush or surface-mounted





Equipotential Earth Sockets - EES

Equipotential earth sockets provide additional earth bonding reference points for all extraneous medical equipment. All medical electrical equipment will have a built-in earth stud counterpart as standard.

These sockets are available for loose fitting into panels, trunking or pendants, or on a back plate in a single, double or quadruple configuration.

Equipotential Earth Leads

Equipotential earth leads are used to connect medical equipment to equipotential earth sockets which are subsequently connected to the earth bonding bar.

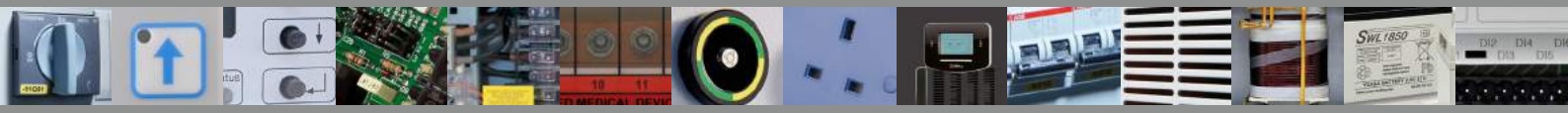
Clean Earth Unswitched Blue Sockets

All IPS power sockets are required to be blue in colour, unswitched with clean earth connection and labelled as 'Medical Equipment Only'.

These sockets are available as single or double gang configurations.



Medipower™ Further Information



Further Assistance

The equipment associated in medical IPS/UPS system design is complex, requiring specialist knowledge. This brochure is intended to provide only an overview of the equipment that we provide.

Contact Brandon Medical for more detailed information and assistance in designing and specifying medical IPS/UPS solutions.

- CPD – Continuous Professional Development
- Design Assistance
- Technical Seminars
- Site Survey
- Demonstrations

Compliances

Brandon Medical prides itself on supplying products of the highest quality. All products comply to the strictest regulatory and recommendatory documentation.

Our IPS/UPS systems comply to the following documentation:

IPS

- HD60364-7-710:2012
- BS EN 61558-2:2015
- BS EN 61557-1:2007
- BS EN 61557-8:2015
- BS EN 61557-9:2015
- BS EN 60601-1:2010
- BS7671 – 17th Edition Amendment 3:2015
- Guidance Note 7:2015
- HTM06_01

UPS

- BS EN 62040-1:2013
- BS EN 62040-2:2006
- BS EN 62040-3:2011
- BS EN 60896 Pt. 21 and 22:2004
- BS EN 50272-1:2010
- BS7671:2015
- Guidance Note 7:2015
- HTM06_01

Exceeding Standards

Brandon Medical is certified as an ISO 13485 and ISO 9000 manufacturer, the global standard for medical device manufacturers.

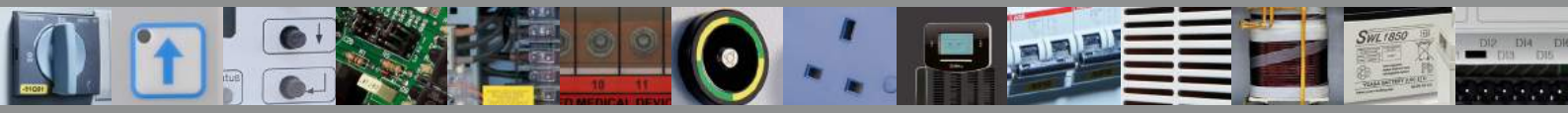


UK Customs
Approved Exporter
Status GB 16164/13



Intertek





Service and Support

Our Philosophy

Customers are at the heart of our business, we aim to provide our customers with the best service, support and advice.

National Coverage

Brandon provide the UK healthcare sector with second to none support, offering nationwide coverage.

Planned Preventative Maintenance - PPM

Brandon are proud to provide PPM for all our IPS and UPS installations.

Life Cycle Costs

Forward planning is the key to managing tight budgets and understanding the challenges ahead.

Versatility

Brandon are capable of providing PPM for all products offered within the Brandon Equipment Package (BEP). We are also able to support and maintain equipment irrespective of brand.

Flexibility

We offer bespoke service packages to suit our customers' needs:

- Service product bundle discounts
- Lower costs and disruptive downtime
- 24/7 support available

Knowledge

All of our engineers are highly trained and skilled individuals who can assist with topics from compliance to site surveys and asset registers.



Continuous improvement enables our business to meet the ever-changing needs of our customers, the healthcare industry and the patients it serves.



IPS/UPS can be associated with Brandon Medical's wide range of products.

Operating Theatre Lights and Battery Back Up

Minor Surgical Lights

Examination Lights

Theatre Control Panels

PACS Workstations

Medical Gas Pendants and Accessories

Ultra Clean Ventilation Canopies

Operating Table and Accessories

Digital Audio Video Solutions

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