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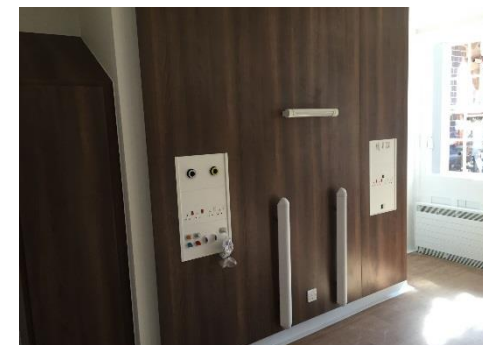
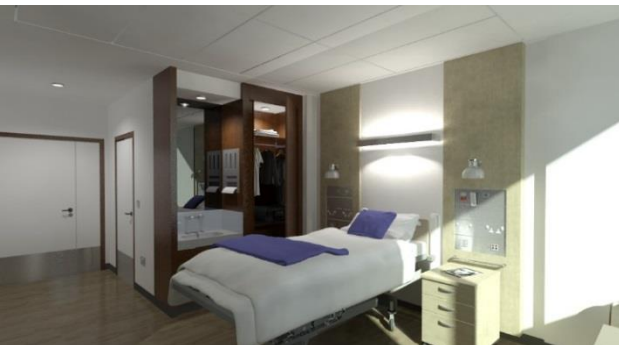
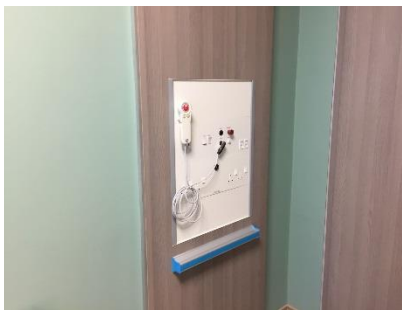
**WAVE**<sup>TM</sup> *in-patient healthcare luminaire*



**CABL**  **FLOW**<sup>TM</sup>  
H E A L T H C A R E

applications

CABLEFLOW™





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Innovation is at the heart of an evolutionary healthcare infrastructure. Challenging boundaries whilst being respectful of clinical skills are two valued philosophies which ensure knowledge led developments in bedroom architecture.

At CABLEFLOW we recognise the need to be different, to ensure product development offers practical and sustainable progression whilst always ensuring full compliance with Patient Safety Standards and improving the clinical environment.

We are proud of our British healthcare heritage which offers universal application around the world. Having been conferred a prestigious Queens Award for Innovation our client's take confidence in that unique recognition as a market leader.



As Britain's leading medical supply unit manufacturer our range of solutions meet a vast array of design concepts throughout all clinical environments whether primary or tertiary care areas, and every speciality in-between.

In 2005 our **integra** product range became the first and only bedhead trunking system to achieve Royal recognition with the conferment of a **Queens Award for Enterprise: Innovation** from Her Majesty Queen Elizabeth II.

Improving the clinical architecture, the patient experience and ensuring flexibility and adaptation in later use are hallmarks of our innovative integrated lighting solutions. At home in an acute hospital setting or more domestic environments such as Hospice's and the like our systems can be tailored to your requirements.





The success of our Award winning\* Integra healthcare lighting system demonstrates that in-patient room lighting in healthcare facilities requires specific attention to detail.

The **WAVE** has evolved from that experience and understanding of the unique and specific demands that healthcare environments place upon luminaires. Equally at home as an in-patient room luminaire or, as a corridor option, the **WAVE** epitomises distinguished luminaire design.

In-patient accommodation, where the relentless environment calls for luminaires to deliver patient safety alongside clinical function, also requires energy efficient solutions and the **WAVE** meets all of these objectives in a delicately flowing design envelope.

The **WAVE** is unique. No other luminaire on the market can achieve a light output to the same proportions whilst emitting the lowest level of viewed luminance (luminous intensity) to date from a compliant healthcare uplighter. The **WAVE** can light an entire patient bedroom without the need for additional room luminaires\*\* and thus reduces the number of fittings required, resulting in reduced power consumption, initial capital expenditure and ongoing maintenance costs.

Mounted at an optimum height of 1.8m The **WAVE** achieves a multitude of illumination criteria in the simplest of forms whilst ensuring CIBSE LG2:2008 performance compliance.

### **INCREASED LIFECYCLE**

With increasingly stringent cleaning regimes adopted in every healthcare facility, largely to reduce the impact of HAI's, products which are easy to clean are paramount in product selection. A design philosophy that ensures 'form' is as important and 'function' has created soft raised edges. The luminaire is easy to clean with its smooth sealed surfaces and fixing free housing with no crevices or grooves to harbour dust or bacteria, with ease of maintenance high on its agenda of key design features. Careful attention to prismatic diffuser design and materials ensures that **WAVE** offers continued performance output over time which increases life-expectancy and reduces maintenance life-cycle costs of the installation.

*\* In 2005 CABLEFLOW were recognised as healthcare innovators with the conferment of a Queens Award for enterprise: Innovation.*

*\*\* subject to an HBN size bedroom and compliance with the design criteria set out in LG2:2008.*

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### **ENHANCED PERFORMANCE**

Whilst other healthcare luminaires offer a lighting solution, they are heavily reliant upon a system of additional luminaires to achieve the overall illumination effect by LG2.

**WAVE** is designed to be different and its performance sets it aside from other in-patient luminaires by having a lesser reliance upon the need for additional ceiling mounted luminaires and consequently a cheaper installation.

### **T5 LAMPS AND CONTROL GEAR**

LED'S are yet to break the 200 lumens / circuit watt in production terms and become commercially viable, and until such time as they do a well designed T5 luminaire is every bit as efficient and economical as an LED based luminaire. This is specifically relevant for an uplighter luminaire which relies upon its upper flux fraction for effect and where the design of the reflector portion is critical.

WAVE is deliberately intended to perform in such a way that replaces the need for numerous luminaires in the ceiling, but to achieve this requires the output of a TL5 lamp. Consequently the indirect uplight portion is a T5 High Output lamp whilst the downlight portion is a T5 High Efficiency T5 lamp.

### **LED TECHNOLOGY**

Recognising that LEDs have a place in luminaire design, not just now but moving forwards, we offer a LED downlight portion to the WAVE.

These are standard 3000k LEDs at contrast to the 4000k T5 lamps.

## SIMPLE INSTALLATION

The **WAVE** is geared towards simple installation and comprises just two significant parts, a Base and the **WAVE** itself. Developed in this way to allow the first fix Base to be installed at an early stage so that all incoming connections can be tested, the **WAVE** Body is a self-contained second fix assembly which is fully pre-wired to a 20A multi-pin connector.

Healthcare accommodation must be illuminated in accordance with CIBSE LG2:2008 and BS EN 12464-1. Careful consideration of the clinical requirements, room size, ceiling heights and reflectance values of surfaces are key and should be carefully co-ordinated, specifically when a luminaire relying upon its upper flux fraction for effect, such as an uplight, are adopted.

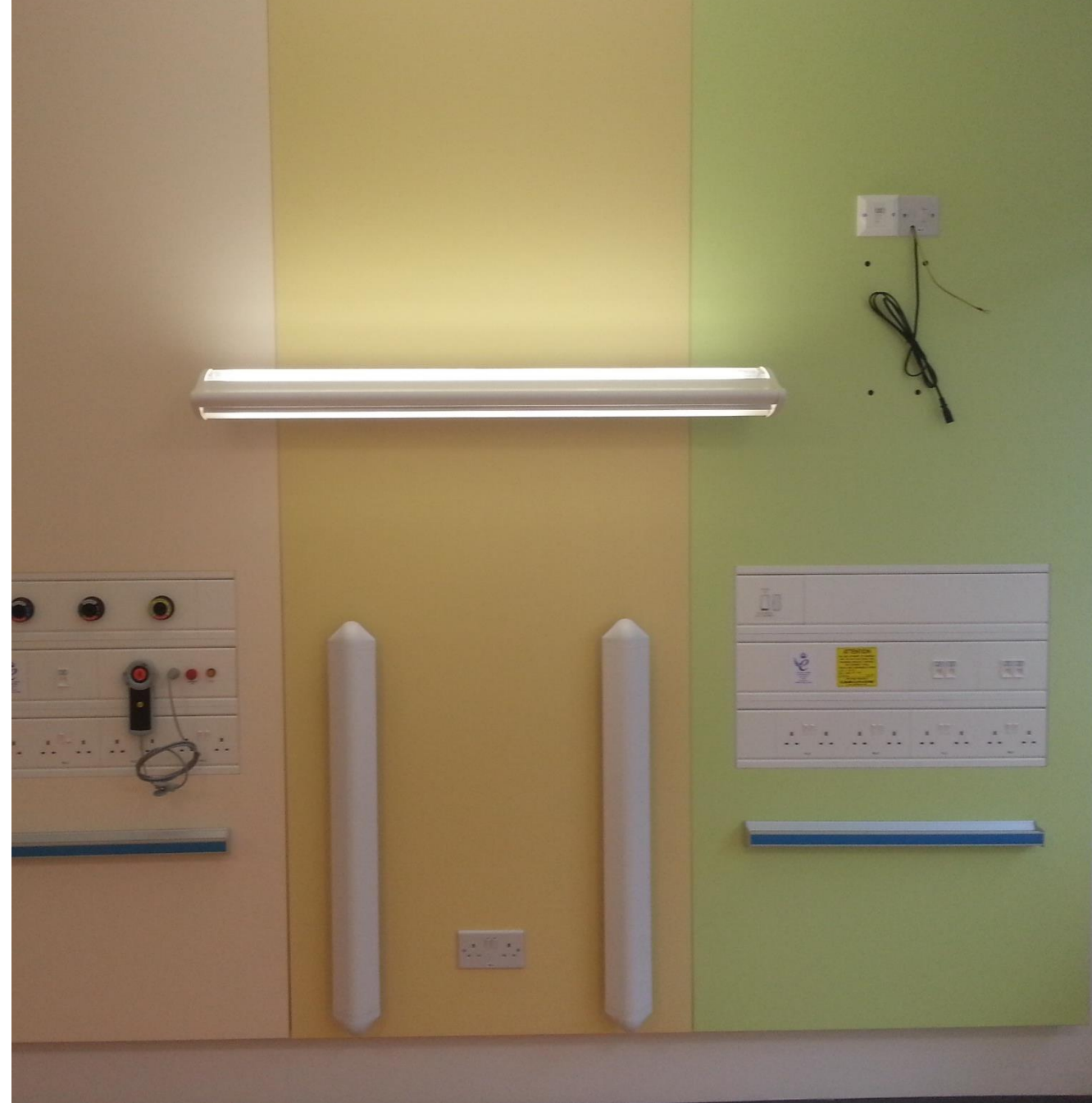
## LIGHTING OPTIONS

The performance characteristics of both the uplight and downlight portions of the **WAVE** ensure a safe, relaxing yet workable clinical environment.

Each luminaire portion is independently controlled by remote push-to-make momentary switching. Control between the patient nurse call system and the patient reading light is pre-wired, simply requiring connection of the incoming low voltage relay control cable to the multi-way connector. Relays are provided as a component part of the nurse call system.

Using high frequency quick start TL5 lamps and ballasts this can reduce conventional energy consumption by up to 80% and provide flicker-free operation. Colour rendered lamps to 4000°k (colour 840) means that the clinical environment has never been more co-ordinated.

TL5 options of 28w, 39w 54w and 80w fixed or dimmable output luminaires for the uplight are available as standard, with DSI or DALI interfacing optional. An LED downlight version is also available.







Prismatic diffusers optimise the length of the luminaire to maximise light output which is carefully controlled by our own Award\* winning\* design. The accuracy of the diffuser design, utilising carefully placed prisms, ensures correct and maximised directional luminance is achieved whilst eliminating shadowing which contributes to a viewed luminance of less than 700 cd/m<sup>2</sup>. The same principles apply to the 21w or 28w downlight, always supplied with a dimmable output.

#### **HEALTHCARE SPECIFIC DESIGN**

A healthcare specific wall light which has been uniquely designed to meet the stringent requirements of CIBSE LG2:2008 is a rare product. The **WAVE** can be used in a combination of configurations, as a combined up/downlight, a standalone uplight or simply a downlight.

Whichever configuration is chosen its curvaceous lines soften the ambience of the healing environment, with no flat surfaces upon which items can be rested or placed, further reducing risks within the patient environment.

The ability to illuminate an entire room to levels determined within CIBSE LG2:2008\*\* from a single luminaire sets this fitting aside from its competition. Patient comfort is also key and with viewed luminance kept within 700cd/m<sup>2</sup> the worries of discomfort glare for ambulatory or supine patients alike is eliminated.

Varying lamp sizes allow almost any configuration of in-patient accommodation to be suitably illuminated whether it's a basic treatment room, multi or single bed rooms or higher dependency areas.

#### **HIGH GRADE POWDER COAT FINISH**

Finished in a high-grade polyester powder coat we provide an Applicators Guarantee for 25 years to support our 25 year product warranty. The complete unit is coated as standard RAL 9010 On larger contracts where certain quantity limits are exceeded then these colour options may be varied.

## PERFORMANCE AND PATIENT SAFETY

Reading, observation and minor examination lighting levels as defined in CIBSE LG2 are achieved by the downlight portion of the **WAVE**, with a carefully designed glare limiting cut off. With the downlight available in either 28w or 35w outputs the general nursing care and reading illumination levels are comfortably achieved. Luminaire performance is one of the many key features of the **WAVE** that doesn't go unnoticed.

## SPECIFYING PEACE OF MIND

Specifying a CABLEFLOW medical trunking system throughout your hospital will provide an easy to use and aesthetically pleasing solution while maintaining a uniform look across all departments.

As an Award winning manufacturer, innovation is at the core of our philosophy and product solutions, based upon a proven track record over 25+ years in the UK healthcare industry.

## EMC CERTIFICATION AND COMPLIANCE

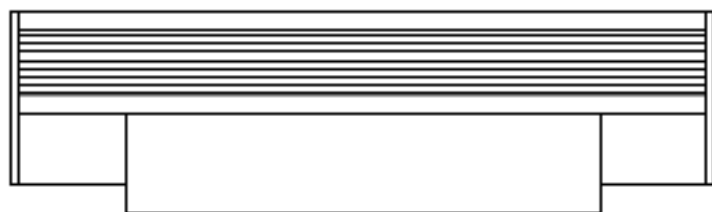
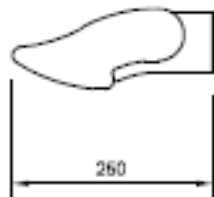
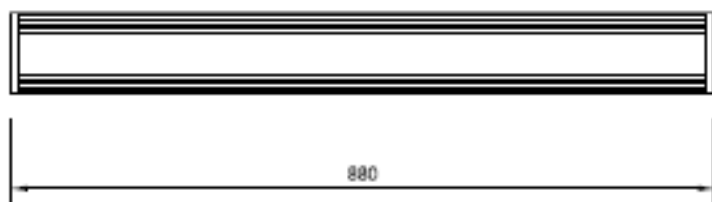
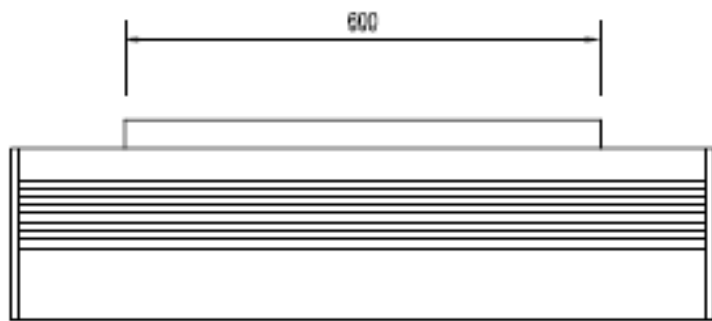
Protecting electronic components in the patient environment from Electro-Magnetic Interference (EMI) and Radio Frequency Interference (RFI) is of paramount importance. **WAVE** has been designed specifically to ensure that it controls both the emission and reception of any such Interference.

The **WAVE** is manufactured to meet the requirements of IEC 60598-2-25 for healthcare facilities. The product is extensively electrically and EMC tested for use within the medical environment and certified to EN 60601-1, and meets the essential requirements of the Medical Devices Directive 93/42/EEC.

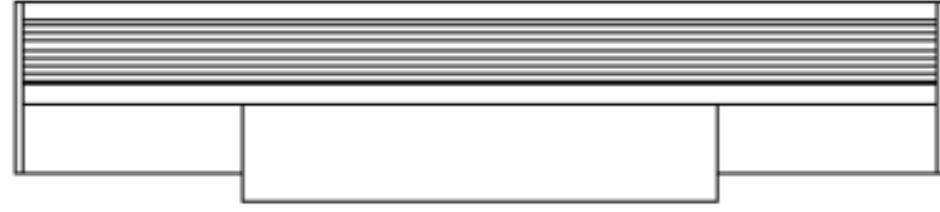
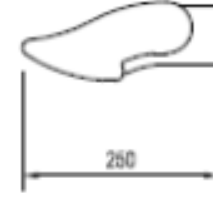
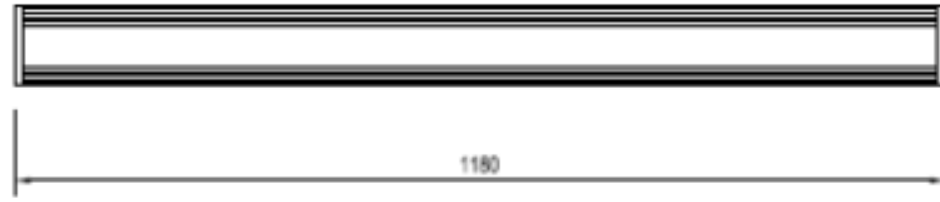
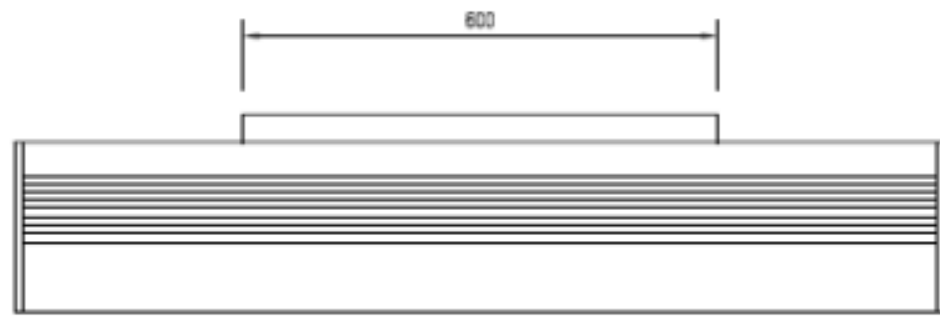
By specifying **WAVE** you can be satisfied that the EMC elements of ISO 11197 have been complied with. All of our system solutions have been independently tested by BSI with all of the commercially available nurse call systems in operation.



**39wUplight & 21wDown**



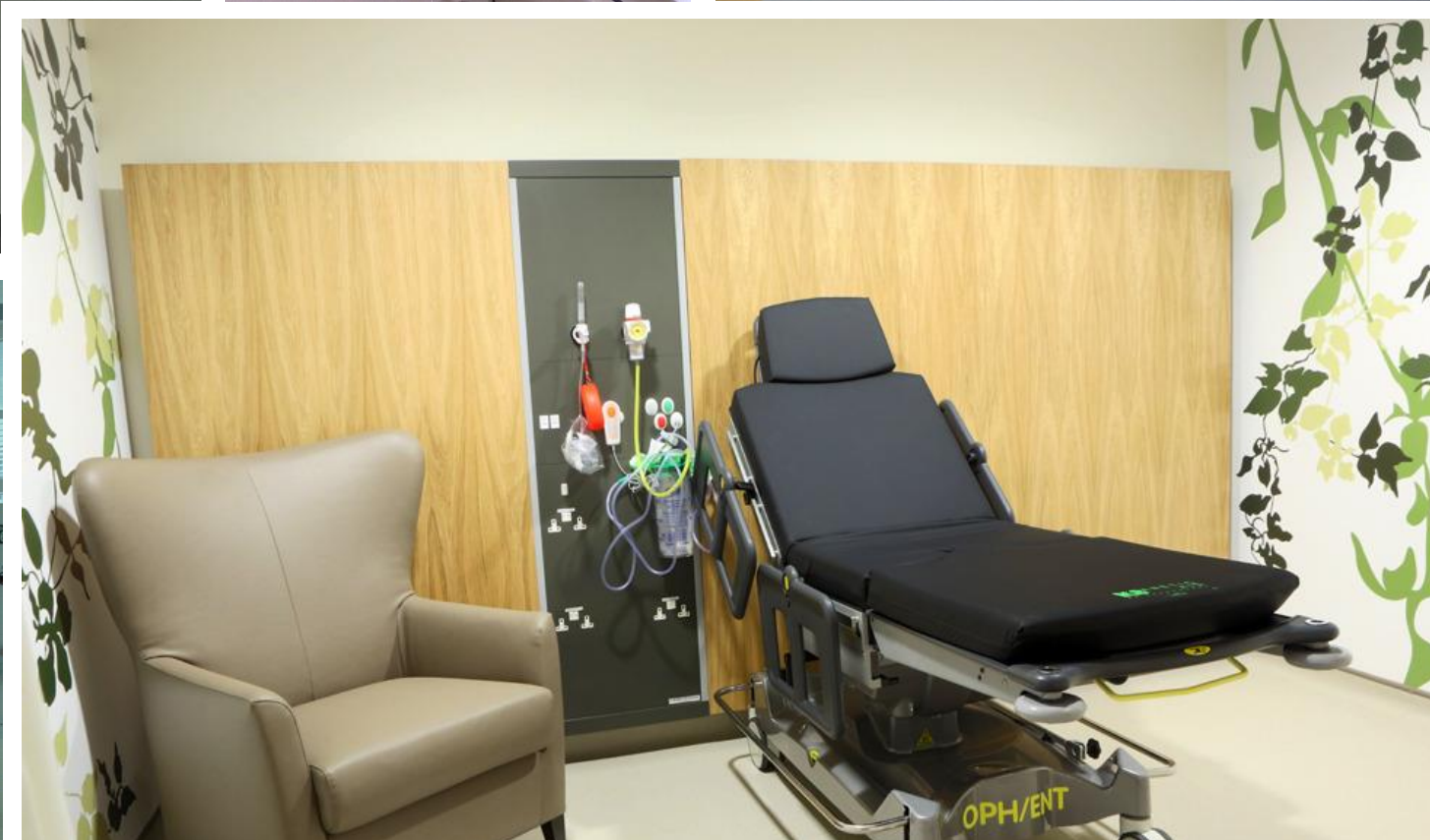
**54wUplight & 28wDown**

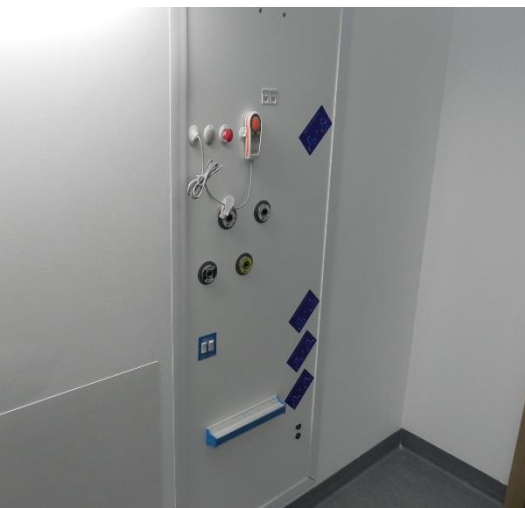
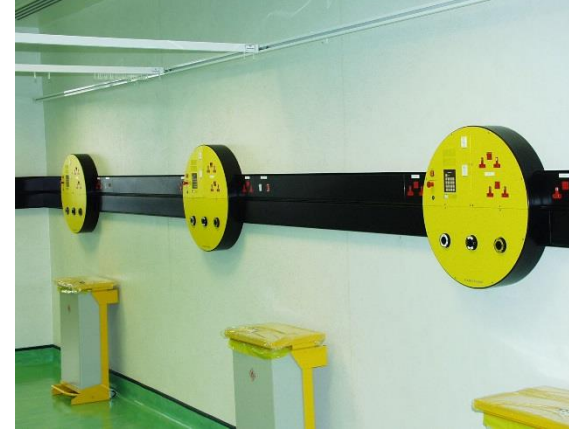


# Standards compliance

Document Reference	Document Description
BS 476-10: 2009	Fire tests on building materials and structures. Guide to the principles, selection, role and application of fire testing and their outputs
BS 1363-1: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for rewirable and non-rewirable 13 A fused plugs
BS 1363-2: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for 13 A switched and unswitched socket-outlets
BS 1363- 4: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for 13 A fused connection units switched and unswitched
BS EN 60669-1:1999+A2:2008	Switches for household and similar fixed-electrical installations. General requirements
BS EN 60598-1:2015	Luminaires. General requirements and tests
BS 5266-1:2011	Emergency lighting. Code of practice for the emergency escape lighting of premises
BS 5733:2010+A1:2014	General requirements for electrical accessories. Specification
BS EN 12206-1:2004	Paints and varnishes. Coating of aluminium and aluminium alloys for architectural purposes. Coatings prepared from coating powder
BS 6701: 2010	Telecommunications equipment and telecommunications cabling. Specification for installation, operation and maintenance
BS 6972: 1988	Specification for general requirements for luminaire supporting couplers for domestic, light industrial and commercial use
BS 7671:2008+A3:2015	Requirements for Electrical Installations. IET Wiring Regulations
BS 8300:2009+A1:2010	Design of buildings and their approaches to meet the needs of disabled people. Code of practice
BS EN ISO 9170-1:2008	Terminal units for medical gas pipeline systems. Terminal units for use with compressed medical gases and vacuum (formally BS EN ISO 9170-1)
BS EN ISO 9170-2:2008	Terminal units for medical gas pipeline systems. Terminal units for anaesthetic gas scavenging systems (formally BS EN 737 -4)
BS EN ISO 7599:2010	Anodizing of aluminium and its alloys. General specifications for anodic oxidation coatings on aluminium (formally BS EN 12373:2001)
BS EN 12464-1: 2002	Light and lighting. Lighting of work places. Indoor work places
BS EN 13032-2: 2004	Light and lighting. Measurement and presentation of photometric data of lamps and luminaires. Presentation of data for indoor and outdoor work places
BS EN 61000-6-3:2007+A1:2011	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments (formally BS EN 50081-1)
BS EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments (formally BS EN 50081-2)
BS EN 61000-6-1:2007	Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments (formally BS EN 50082-1)
BS EN 50083-2:2012	Cable networks for television signals, sound signals and interactive services. Electromagnetic compatibility for equipment
BS EN 50085-1:2005+A1:2013	Cable trunking systems and cable ducting systems for electrical installations. General requirements
BS EN 50085-2: 2006	Cable trunking systems and cable ducting systems for electrical installations. Cable trunking systems and cable ducting systems intended for mounting on walls and ceilings

Document Reference	Document Description
BS EN 60439-5: 2006	Low-voltage switchgear and controlgear assemblies. Particular requirements for assemblies for power distribution in public networks
BS EN 60529:1992+A2:2013	Degrees of protection provided by enclosures (IP code)
BS EN 60598-2-22:1998+A2:2008	Luminaires. Particular requirements. Luminaires for emergency lighting
BS EN 60601-1-6:2010+A1:2015	Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Usability
BS EN 60601-1-2: 2007	Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Electromagnetic compatibility. Requirements and tests
BS EN ISO 11197:2009	Medical supply units
BS EN ISO 7396-1:2007+A3:2013	Medical gas pipeline systems. Pipeline systems for compressed medical gases and vacuum
ISO 7396-2: 2007	Medical gas pipeline systems. Anaesthetic gas scavenging disposal systems
HBN 00-03	Designing generic clinical and clinical support spaces
HBN 00-04	Circulation and communication Spaces
HBN 00-09	Infection control in the built environment
HBN 04-01	Adult in-patient facilities: planning and design
HBN 04-02	Critical care units
HBN 4, Supplement 1	Isolation facilities for infectious patients in acute settings
HBN 6	Facilities for Diagnostic imaging and interventional radiology:
HBN 07-01	Satellite Dialysis Unit
HBN 07-02	Main Renal Unit
HBN 09-02	Maternity Care Facilities
HBN 09-03	Neonatal Units
HBN 57: 2003	Facilities for critical care
HTM 02-01	Medical gas pipeline systems
HTM 06-01	Electrical services: supply and distribution
HTM 06-02	Electrical safety guidance for low voltage systems
HTM 08-03	Management of bedhead services in the health sector
HTM 17	Health Building Engineering Installations
HTM 2014	Abatement of electrical interference
HTM 2020	Electrical safety code for low voltage systems
CIBSE LG 2: 2008	Lighting guide - Hospitals and health care buildings
CIBSE LG 3: 2001	Lighting guide - The visual environment for Display Screen Use
CIE	European Lighting Guide
IEC 60364-7-710: 2002	Electrical installations of buildings. Requirements for special installations or medical locations (UK BS7671 Section 7-710)
NHS SPEC C49: 1997	Nurse Call Systems. Revision 3
93/42/EEC	Medical Devices Directive







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For full product data sheets go to our website or contact us directly

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