

TECHNOTRUNK™ **MEDISYS integra™**



The flagship product of our Bedhead Services Trunking System range, the cost-saving features and outstanding flexibility of the **MEDISYS integra** system has been broadly recognised as the leading system of its type available to the UK market. The conferment of a Queens Award for Innovation for this product is testament to the global recognition now gained by this innovation.

TECHNOTRUNK MEDISYS integra offers a composite solution to bedhead services provision in the clinical environment with integral up and down lights. The system ensures that the patient's bedded area remains lit in accordance with CIBSE LG2:2008, and the soon to be issued update, specifically when the curtains are drawn. **integra** offers the full range of bedhead services and is custom designed and built to an uncompromising standard to cater for the individual needs of each bed in each hospital.

Using TL5 lamps and gear, the lighting system will provide flicker-free, inaudible operation at all times. A full range of ballasts at 28W, 54W or 80W, fixed output, dimmable or DALI controlled, is available.

The product can be specified in a variety of colours and configurations with more than 360 shades or hues available from our standard range, so it will not look out of place in any environment.

fully integrated
**BEDHEAD SERVICES
TRUNKING SYSTEM**



THE QUEEN'S AWARDS
FOR ENTERPRISE:
INNOVATION
2005

Made in Great Britain



Design

The **CABLEFLOW** concept is that all cabled services should be kept separate from medical gases in accordance with the latest UK & European standards. Until recently, dated and ill-conceived product design has never permitted this to happen without major compromise to the patient care services layout at the bedhead, or a major disruption to all services when maintenance is required.

CABLEFLOW's range of medical trunking offers the solution in a neat, compact, versatile and cost-effective manner.

Designed as interlocked extrusions which can be assembled in a variety of configurations, specifying **MEDISYS integra** provides you with the ability to resolve almost any design or site constraint likely to be encountered.

The trunking system can be subdivided into up to five compartments for services such as SELV, ELV, Mains and gas services as required by the latest EN standards. The unique design of our products means that a separate chamber is created for piped medical gas services as required by ISO 11197. A variety of system sizes are available within the range to accommodate the varying quantities of pipework and cabling required in both High and Low Dependency areas.

Flush fitting lids offer a clean appearance to the fascia, enhanced by a screw free approach to all external surfaces, a requirement of HTM 08-03. The uncluttered appearance of the fascia ensures that both staff and patients can quickly identify the service they require, resulting in efficient patient care. This, added to our belief that trunking should be



not only functional but attractive too, means that specifying a **CABLEFLOW** medical trunking system throughout your hospital will provide an easy to use and aesthetically pleasing solution while maintaining a uniform look.

Services Outlets

Accessories are mounted directly onto lids to allow simple maintenance. By utilising standard BS 4662: 1998 knockout boxes within our horizontal trunking, we can ensure a degree of flexibility and, if necessary, adaptability on site. These boxes are factory-mounted directly onto an extruded aluminium box carrier to ensure total screening between services at outlet positions and aid simple location, alignment and earthing of the box assembly.

Nurse call box assemblies are similar in construction but allow for the location and mounting of the nurse call system circuit boards and any associated components. As we have the ability to accommodate a variety of Nurse Call systems, this unique box assembly for accommodating the various PCB mountings has been developed in conjunction with the various nurse call manufacturers to ensure uniformity and compatibility.

Mains Power

Electrical sockets from the UK, continental Europe, the US and other geographical regions can be accommodated, including switched or unswitched socket outlets for standard or non-standard configurations. These can be colour co-ordinated subject to the respective manufacturer's product range. The design of **MEDISYS integra** ensures that no screw fixings are visible on the trunking lid and this applies to all flush mounted outlets, thus complying fully with the requirements of HTM 08-03.



TV/Data Services

TV, data, fibre optic and voice services can all be accommodated within the **MEDISYS integra** system. Provision for Mod-Snap or Wandsworth Data or Voice sockets, co-axial TV jacks and fibre-optic services can all be catered for. These can be colour co-ordinated subject to the respective manufacturer's product range. As, with our mains sockets, no screw fixings are visible on the trunking lid.



Nurse Call Systems

Each hospital will vary in its individual requirement from the next, none more so than the nurse call system.

MEDISYS integra has been designed specifically to accommodate all commercially available nurse call products. As an independent trunking manufacturer with no allegiance to any specific nurse call supplier, we leave the choice of nurse call manufacturer up to you, the user and specifier. The trunking plates are supplied free issue from us to the nurse call manufacturer, pre-punched, coated and engraved for them to assemble their components onto and test in-house. This in itself ensures compatibility between the two manufacturers, whilst ensuring that the product quality and performance is maintained.

Often when a client states a particular preference for bedhead services, this invariably refers to the nurse call system to ensure compatibility with existing arrangements. Our systems are universally used with all major nurse call systems and do not affect the choice of nurse call equipment which can still remain as the hospital norm.

Medical Gas Terminal Units

As with the nurse call provision, **MEDISYS integra** is capable of accommodating all types of medical gas

terminal units, each hospital or installer having a preference for a particular type. Terminal units are located onto a terminal (type) specific mounting grid, which allows vertical and horizontal adjustment for precise alignment. This grid is in turn mounted onto a base plate, which is fixed directly into position within the base structure.

Gas pipelines are fully segregated from cabled services meaning gas terminal units can be positioned anywhere in the module. The number of gas specific terminal units which can be fitted varies depending on the exact product selected, but any variation of up to nine terminal units from the full range of medicinal gases as defined within HTM 02-01 can be accommodated in our larger profiles.

Pipe Clips

From our experience and the comments of the gas installers, the need to install and maintain a pipework system with simplicity, we view as being of paramount importance.

The unique detail in the gas chamber allows the simple snap fitting of bespoke **MEDICLIP** pipe clips, eliminating the need to drill the trunking body. The **MEDICLIPs** are available in two sizes to accommodate pipes of 15mm and up to 22mm diameter. Once installed the clips can be easily removed and relocated anywhere along the trunking length without the use of a key or tool. Clips are supplied to suit support distances defined in HTM 02-01.

Concealed Lid Fixings

In keeping with the screw free fascia, **MEDISYS integra** uses a bespoke lid retention slug that neatly slides into a channel created by the base-lid assembly and prevents it from being opened inadvertently. A specific lid removal tool accesses the channel and allows the lateral movement of the slug, thus



ensuring that no damage is caused to the powder coated finish. The transparent slug has no visual impact on the appearance of the trunking, contributing towards the superb aesthetics of **CABLEFLOW** medical trunking.

Corners and End Caps

All of our trunking configurations have purpose made end caps. These are manufactured from steel in most cases and powder coated to complement the remainder of the system whilst ensuring that the overall aesthetics of the product are maintained.

The end caps allow each end of the trunking run to be neatly capped off, and a special entry end cap is available to facilitate the ease of access into the trunking for all services via conduit entry (for cabled services), where required.

MEDISYS integra is also available with purpose made corners. These are also manufactured from aluminium and powder coated to match the rest of the trunking run. They enable it to fit into any shape of room while maintaining the overall aesthetics of the system.

By using metal end caps and corners, EMC protection is maintained, which cannot be achieved where plastic or polymer end caps are used.

Integrated Lighting System

MEDISYS integra has been designed to provide bedhead reading/observation or inspection lighting via the integrally mounted downlights fitted into the underside of the trunking system. The luminaire can be controlled via the patient handset with the addition of the respective relays and diodes where necessary. These are supplied by the relevant nurse call manufacturer to

ensure compatibility with their system, although we can integrate them into our factory build program.

All lighting units are designed and tested to comply with the requirements of CIBSE LG2:2008 "Hospitals and Healthcare Buildings". This is a recommendation produced by the Chartered Institute of Building Services Engineers (CIBSE) in the UK. The recent publication of BS EN 12464-1: 2002 is not considered a fully sufficient healthcare document as it seeks to apply the same lighting principles to healthcare as all other areas and this is far from appropriate.

Conscious of the need to ensure that adequate and efficient up/down lighting is available, our **MEDISYS integra** range offers a solution where no compromises have been made.

A corresponding asymmetric uplight is also included within the top upper section, which can act as the sole source of room illumination from this system.

The cleverly designed diffusers are used in both uplight and downlight arrangements, thus ensuring the compatibility of spares held.

The flush-fitting lighting is fitted into a bespoke upper base section, with the option of either, or both uplights and downlights within the same length module.

The diffuser is flush fitting and is easily removable with the aid of a tool when tubes or ballasts need to be replaced without dismantling any of the installed trunking or major disturbance to the patient.

The light unit is totally encapsulated thus eliminating any conflict with the gas services, and offers a flush fitted reading light for the patient, providing over 300 lux at the bedhead using a TL5 fluorescent fitting.

Trunking mounted bedlight controls allow the lighting to be switched locally at the bed position, or remotely from



the ward access or nurses station. The reading light can also be controlled by the patient handset with the addition of the respective relays where necessary.

The introduction of DALI components further ensures, where required, that a total lighting management system can be utilised with this system. DALI ballasts can be fitted at each bedhead to achieve bespoke lighting control per bed, even in multi-bedded wards.



The sloping top and bottom of the system facilitates the light distribution to ensure an appropriate spread of light, thus ensuring that the lighting conforms with the data set out in the CIBSE Guide. As standard the light modules use high frequency, quick start ballasts which can be dimmed locally for use as the night light.

Adjustable Arm Lighting

MEDISYS integra also has the ability to provide bedhead reading/observation or examination lighting via one or more 'anglepoise'-type lamps, which are attached to the front of the trunking by a bespoke bedlight bracket. We can supply these lamps from a variety of manufacturers or alternatively they can easily be site-fitted by the installing contractor.

All assembly fixings are hidden from view, ensuring an easy to clean and aesthetically pleasing finish.

EMC Certification

Protecting electronic components from Electromagnetic Interference and Radio Frequency Interference is of paramount importance, especially within a healthcare environment. **MEDISYS integra** has been designed specifically to ensure that each chamber, and in turn each individual compartment, controls both the emission

and reception of Electromagnetic and Radio Frequency Interference.

By specifying **MEDISYS integra** you can be satisfied that the EMC elements of the Medical Devices Directive have been complied with, and have been tested for by BSI with all of the nurse call system in operation.

All metallic sections have an extruded earthing provision, therefore the system components can simply be earthed in accordance with

the latest IEE Wiring Regulations (BS 767:2008). This has been designed and tested to ensure that all discharged static is dissipated away without causing any effect to sensitive nurse call or other ancillary components within the trunking and its environment. This has specific importance when considering the build-up of static within a patient or member of the nursing staff, which could easily be discharged through the trunking when they come into direct contact.

Equipotential earth bonding sockets are also available for compliance with current legislation.

Engraved Text and Legends

Due to the specific nature of individual accessory lids in hospital applications, it is essential that legends and usage instructions are clearly evident to the user. We adopt a policy of engraving and screen printing all text and legends on our systems thus ensuring a greater life span for the component and making it easy for the user to identify the relevant service.

Module Construction

MEDISYS integra is factory assembled with all outlets pre-configured. The module can then be fitted on site as a second or third fix item and, if required, we can pre-wire and pre-pipe prior to despatch, all with test



certification. The integral lighting systems are always pre-wired.

This method of production reduces costs by benefiting from lower labour rates for off-site assembly, and speeds up the general site installation time whilst helping to eliminate the risk of on-site damage to trunking and abuse by other trades during the construction phases.

Medical Equipment Rail

While some systems have an integral Medical Equipment Rail, our review of this concept has concluded it is an ill-conceived failure. Its inclusion invariably obstructs other trunking-mounted outlets and the forces exerted on the rail can cause the extrusions to buckle.

Instead we manufacture a separate Medical-Rail to BS ISO 19054:2006 which is independently wall mounted (separate datasheet available)

Vertical Risers

We recognise the need to keep the visual effect of the trunking to a minimum and have developed a slim trunking section to tee into the system for the supply of all services from high level.

The overall size of this riser is 180 x 45mm but can be doubled up if a larger volume of services are to be accommodated.

Installation

Each module is secured directly to the wall surface using suitable fixings (refer to installation instructions). The use of proprietary mounting plates is not recommended with such a system. All wall deviations should be filled using a suitable caulk or mastic.

We have recognised the need of some clients to procure a total package from a specialist manufacturer.

Our experienced Contracts Department specialises in the installation of our trunking systems, a major factor in satisfying this requirement.

Our in-house installation technicians are trained to the highest standards, to achieve the best possible result when our products and their services are co-ordinated. By equipping them with the latest machinery and tools, they are able to complete installations quickly and efficiently and our expert product knowledge assists in ensuring a successful conclusion to any contract.

Further information about this service can be obtained by contacting our Sales Team who will be pleased to provide you with a costing on your specific application for installation or machine hire.

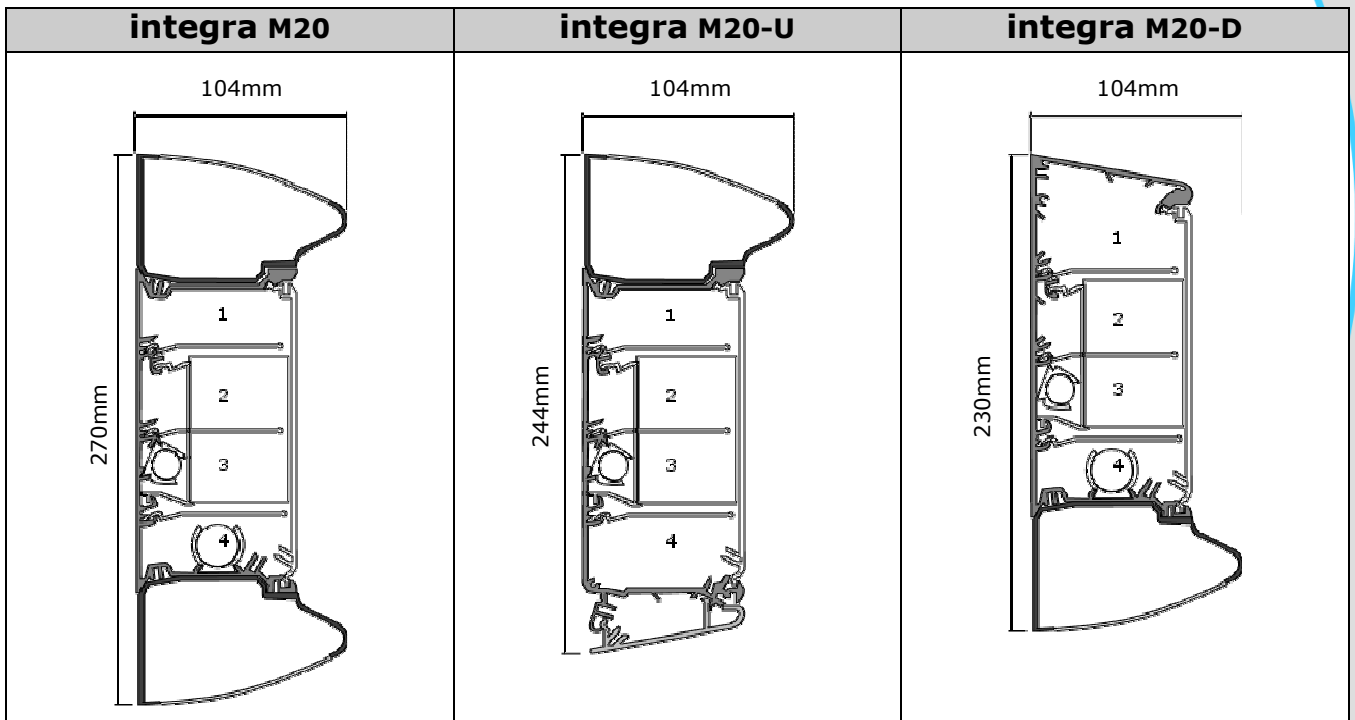


Technical Specification	
International Standards:	See back pages
Material:	Extruded Aluminium (A MgS:0.5)
Surface Finish:	Powder coated* / Anodised
Service Entry:	Can be either back-fed or fed via a purpose designed riser section with corresponding features.
Installation:	Supplied as a factory pre-built module. TECHNOTRUNK MEDISYS integra is generally secured directly to the wall above the head of a bed in accordance with HTM 2015.
End Caps:	Supplied in steel, either open or closed depending on requirements

integra M10	integra M10-U	integra M10-D

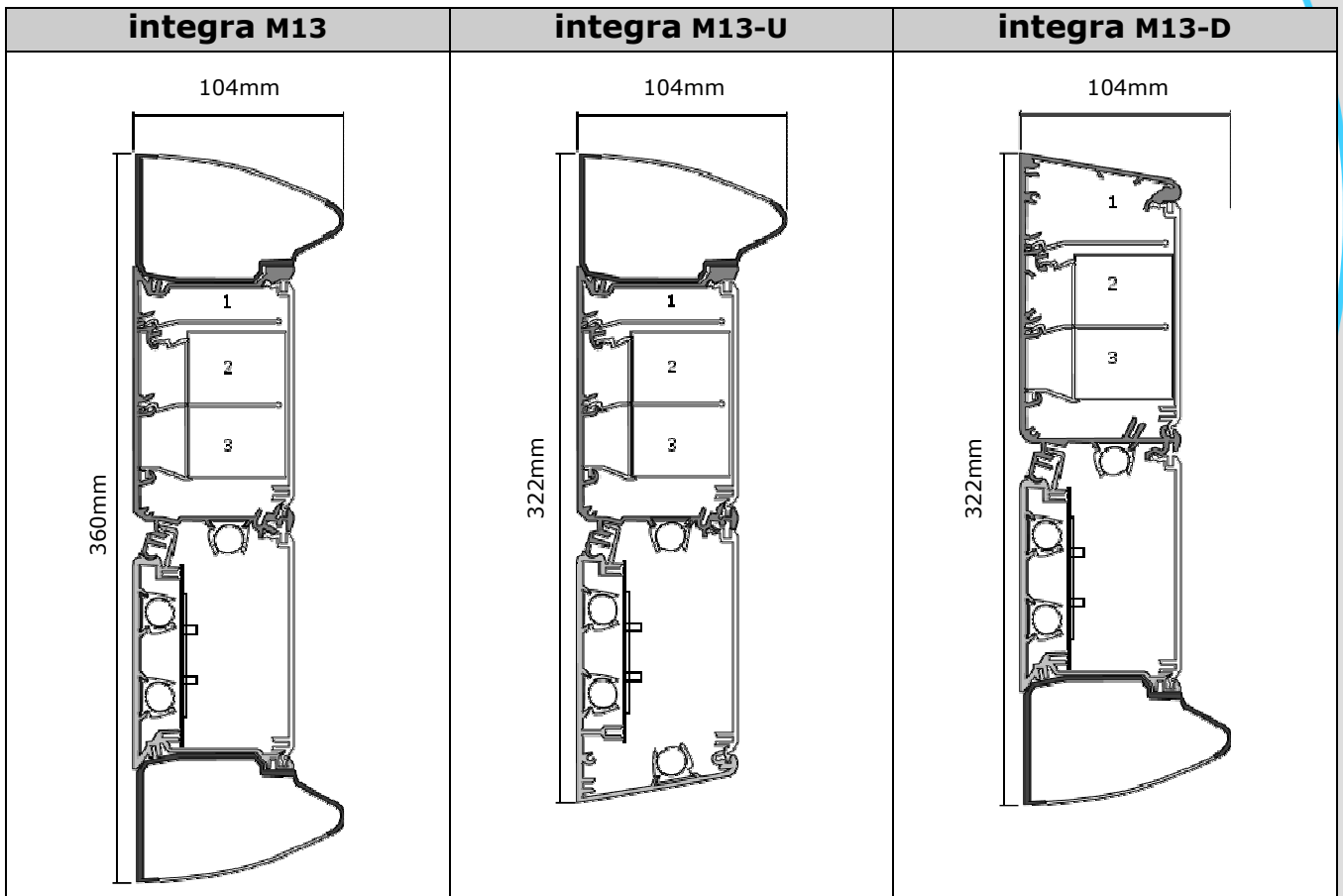
Capacities		
Max. No. of electrical compartments:	3	
Max. No. of pipes:	2	
Compartment capacity (gross) mm ² :	1	1034 (2151 with downlight only)
	2	617
	3	1588





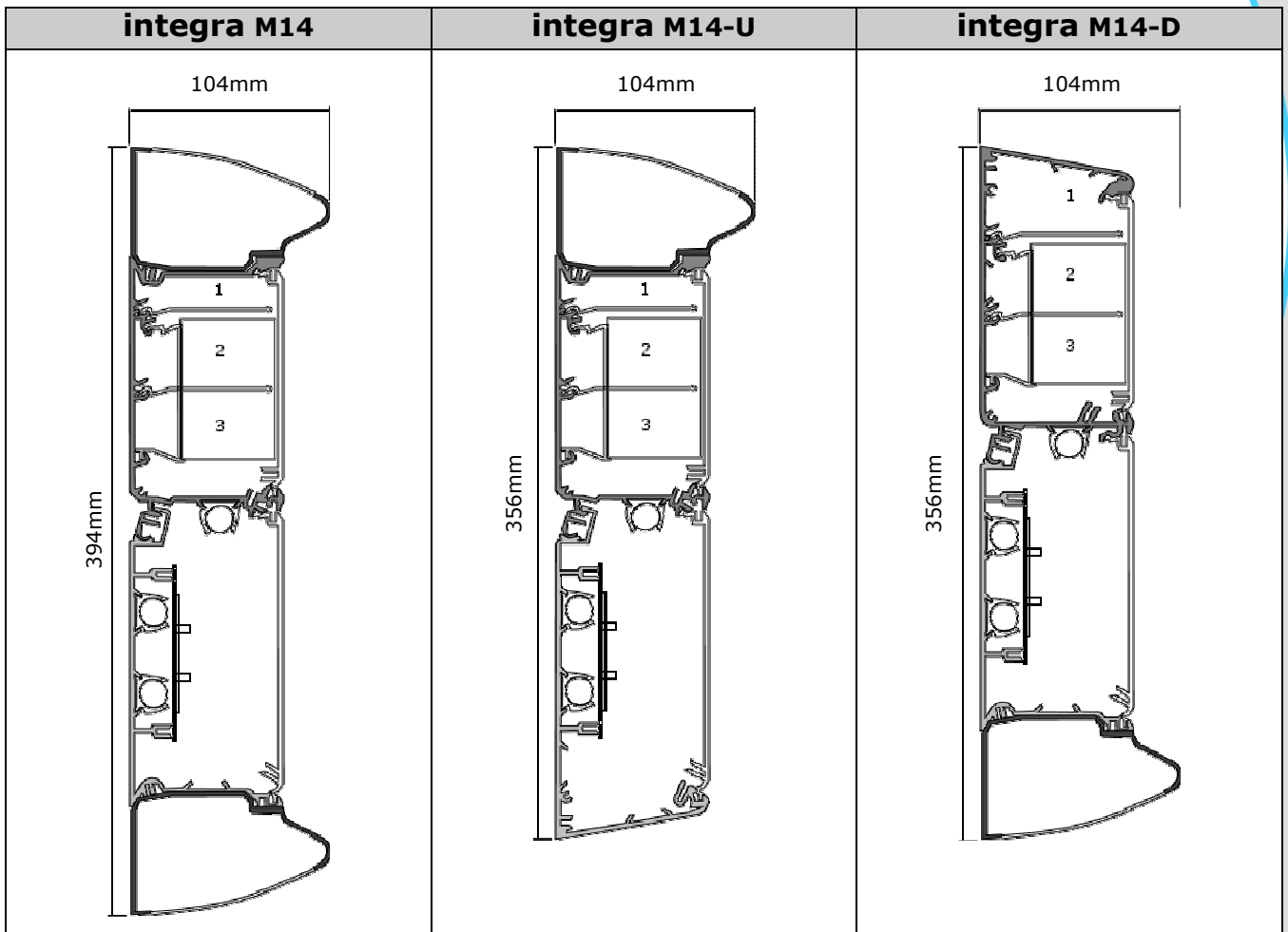
Capacities		
Max. No. of electrical compartments:		4
Max. No. of pipes:		4
Compartment capacity (gross) mm ² :	1	1675 (3014 with downlight only)
	2	617
	3	652
	4	2289





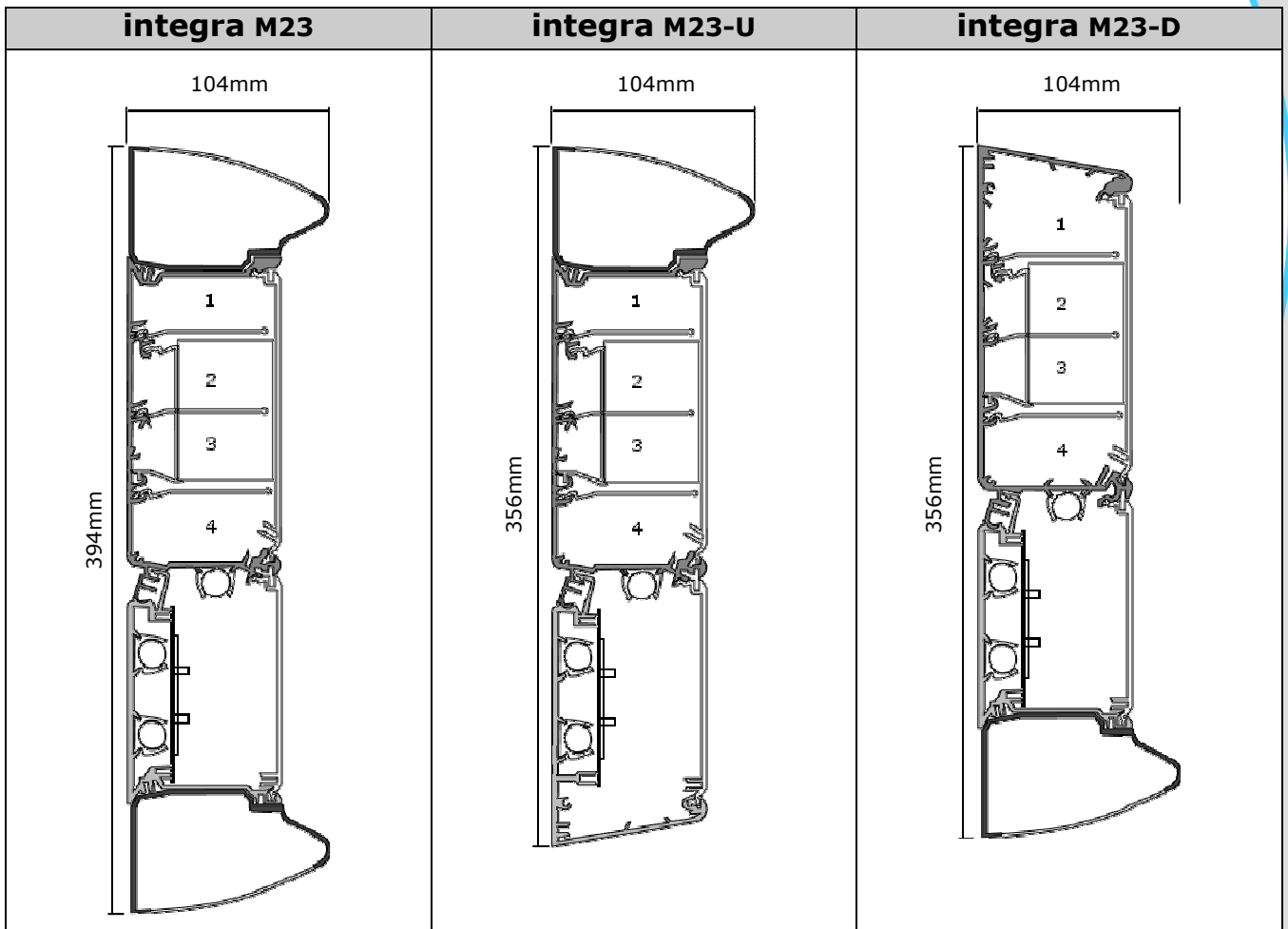
Capacities		
Max. No. of electrical compartments:	3	
Max. No. of pipes:	4	
Compartment capacity (gross) mm ² :	1	1034 (2151 with downlight only)
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	3	1588





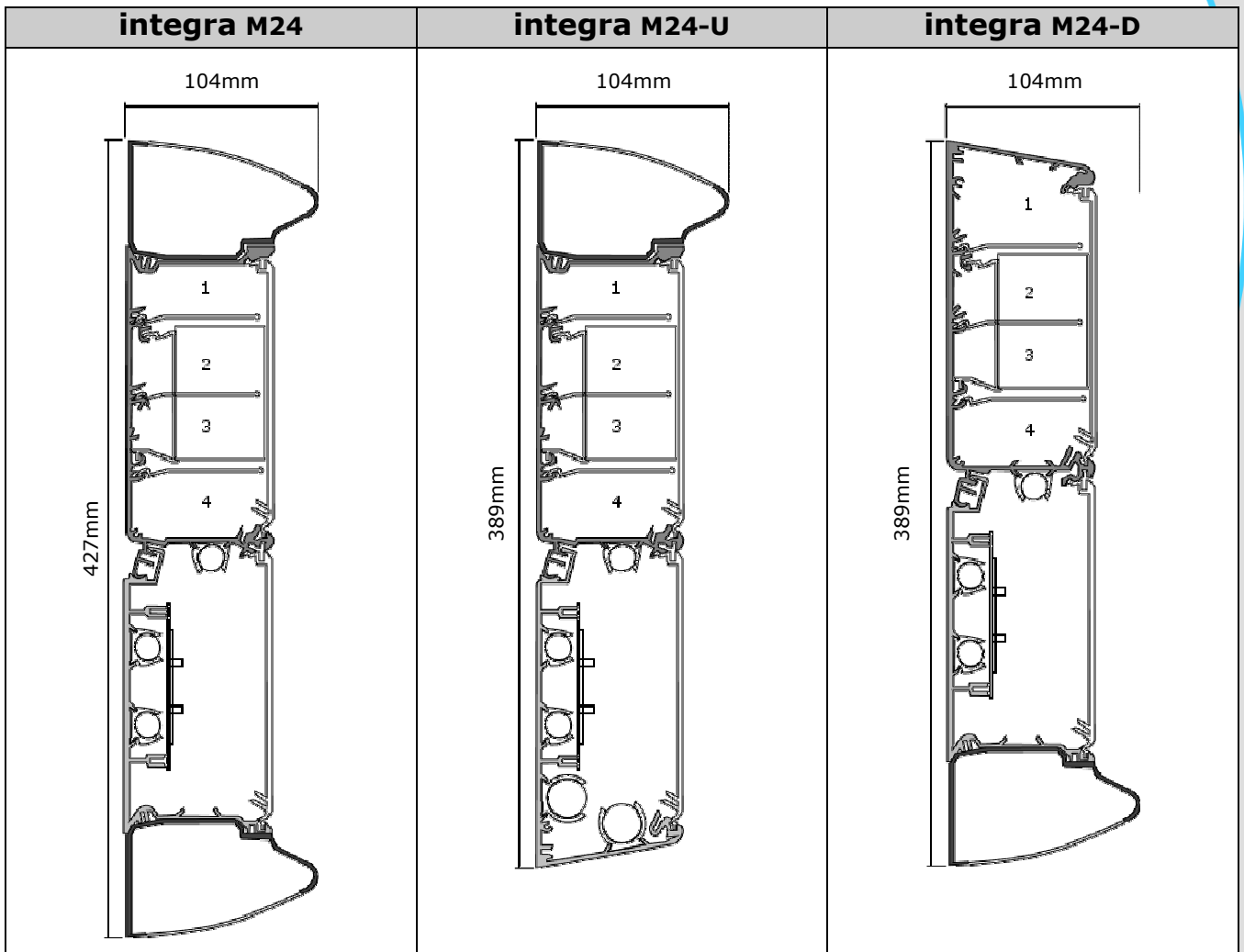
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Max. No. of electrical compartments:		3
Max. No. of pipes:		5
Compartment capacity (gross) mm ² :	1	1034 (2151 with downlight only)
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	3	1588





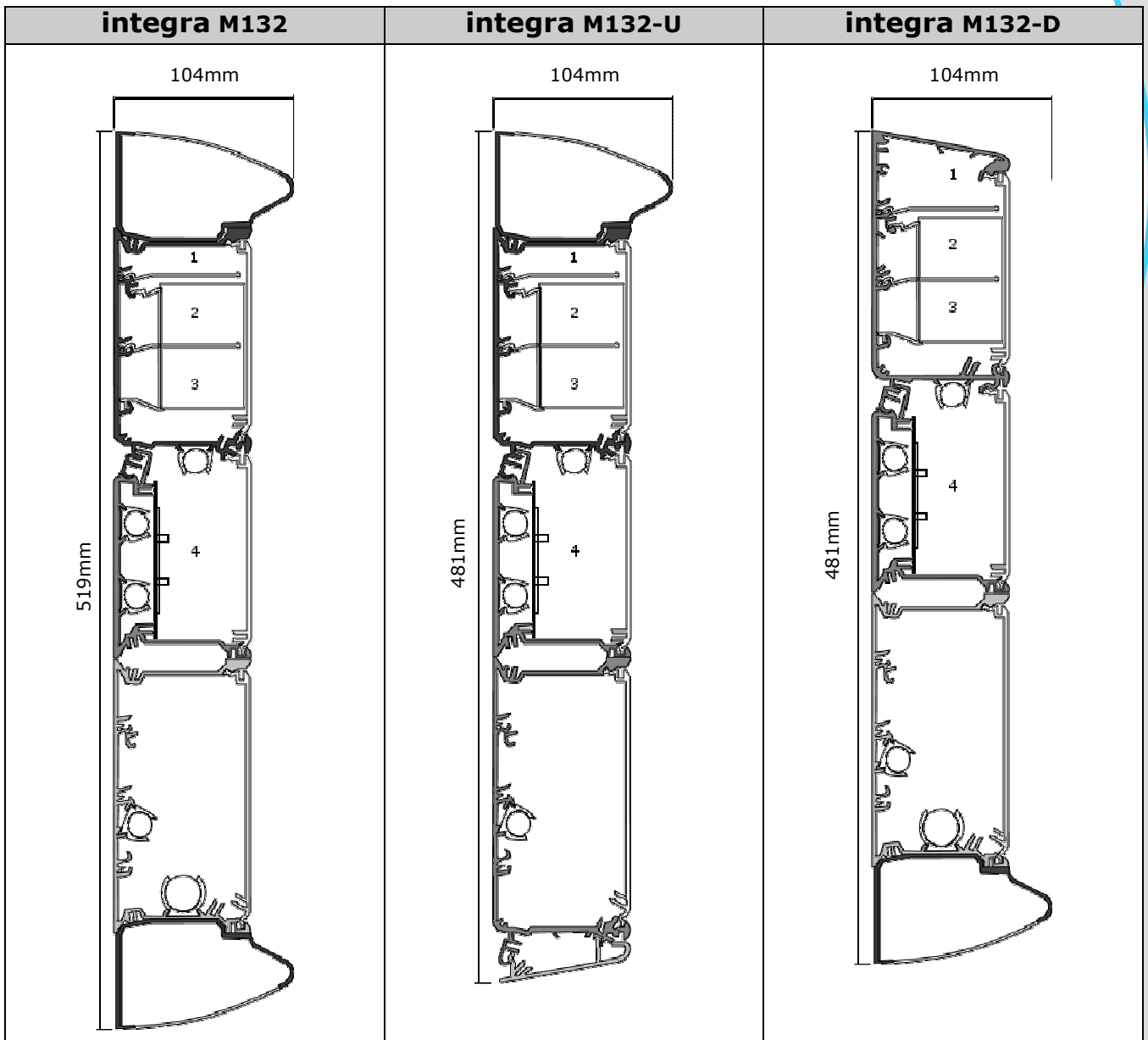
Capacities		
Max. No. of electrical compartments:		4
Max. No. of pipes:		4
Compartment capacity (gross) mm ² :	1	1675 (3014 with downlight only)
	2	617
	3	652
	4	2289





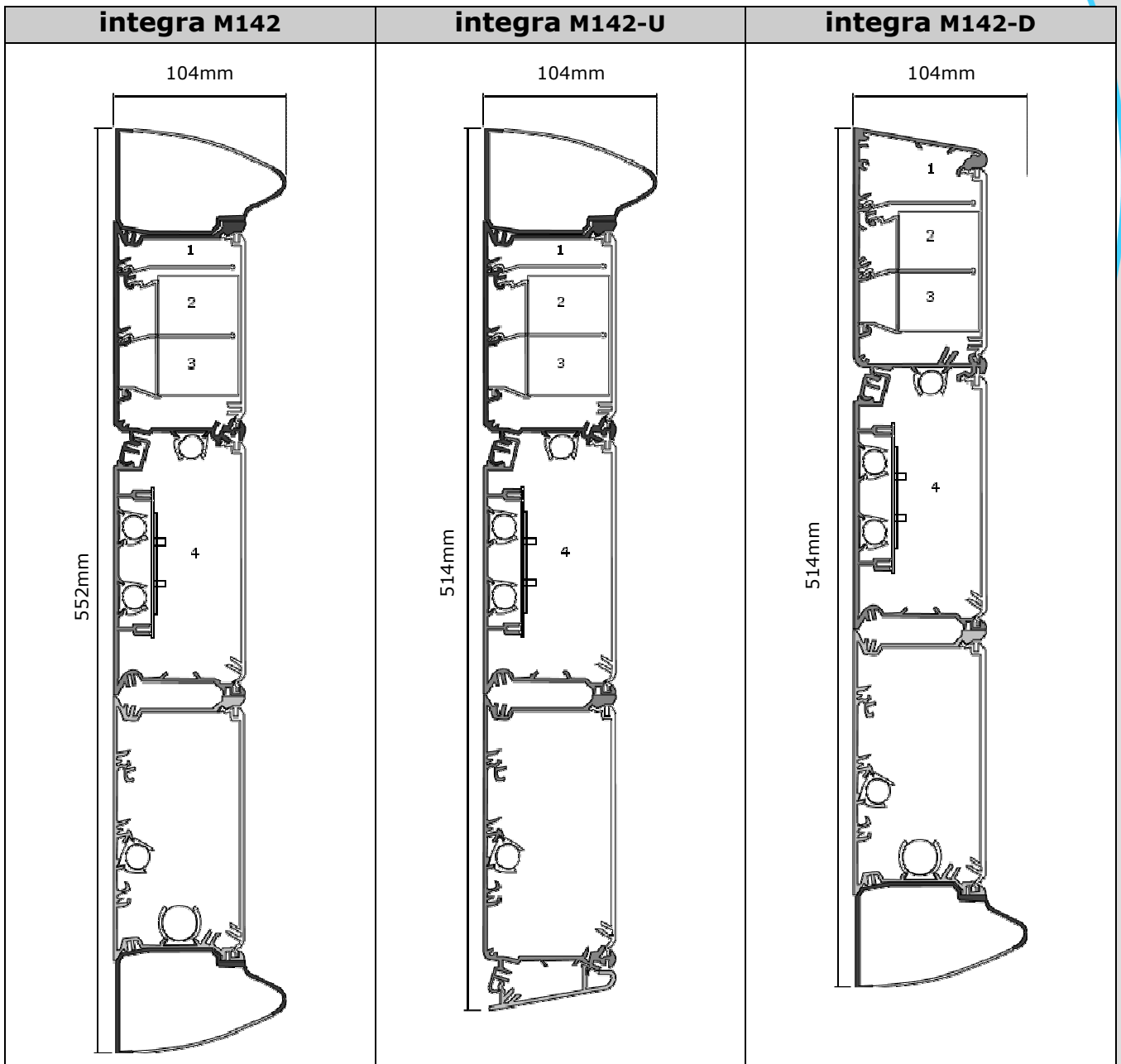
Capacities		
Max. No. of electrical compartments:		4
Max. No. of pipes:		6
Compartment capacity (gross) mm ² :	1	1675 (3014 with downlight only)
	2	617
	3	652
	4	2289





Capacities		
Max. No. of electrical compartments:	4	
Max. No. of pipes:	5	
Compartment capacity (gross) mm ² :	1	1034 (2151 with downlight only)
	2	617
	3	1588
	4	3985





Capacities		
Max. No. of electrical compartments:	4	
Max. No. of pipes:	6	
Compartment capacity (gross) mm ² :	1	1034 (2151 with downlight only)
	2	617
	3	1588
	4	7719



Document Reference	Document Description
BS 196: 1961	Non-reversible plugs and socket outlet up to 250 Volts
BS 476-10: 2009	Fire tests on building materials and structures
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- 3: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for adaptors
BS 1363- 4: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for 13 A fused connection units switched and unswitched
BS 2754: 1976	Construction of electrical equipment for protection against electric shock
BS EN 60669: 1996 (replacing BS 3676-1: 1989)	Switches for fixed electrical installations
BS 4533, BS EN 60598: 1989	Specification for fixed general purpose luminaires
BS 5266-10: 2008	Emergency Lighting Systems
BS 5733: 1995	General requirements for electrical accessories
BS 6496: 1984	Powder organic coatings for application and stoving to aluminium alloy extrusions
BS 6701: 2010	Telecommunications equipment and telecommunications cabling
BS 6972: 1988	Specification for General requirements for luminaire supporting couplers for domestic, light industrial and commercial use
BS 7671: 2008	Requirements for electrical installations. IEE Wiring Regulations (17th Edition inc amendments)
BS 8300: 2009	Code of Practice: Design of buildings and their approaches to meet the needs of disabled people.
BS EN 737-1: 1998	Medical Gas Pipeline Systems. Terminal units for compressed medical gases and vacuum
BS EN 737-4: 1998	Medical Gas Pipeline Systems. Terminal units for anaesthetic gas scavenging systems
BS EN 12373:2001	Aluminium and aluminium alloys. Anodizing
BS EN 12464-1: 2002	Light and lighting. Lighting of indoor work places
BS EN 13032-2: 2004	Light and lighting. Photometric data of lamps and luminaires for indoor and outdoor work places
BS EN 50081-1: 1992	EMC. Generic emission standard. Residential, commercial and light industry
BS EN 50081-2: 1994	EMC. Generic emission standard. Industrial environment
BS EN 50082-1: 1998	EMC. Generic immunity standard. Residential, commercial and light industry
BS EN 50083-2: 2006	Cable networks for television signals, sound signals and interactive services. EMC compatibility
BS EN 50085-1: 2005	Cable trunking systems and cable ducting systems for electrical installations
BS EN 50085-2: 2006	Cable trunking systems and cable ducting systems for electrical installations intended for mounting on walls and ceilings
BS EN 55015: 2006	Radio interference characteristics of fluorescent lamps and luminaires
BS EN 60439-5: 2006	Low-voltage switchgear and control gear assemblies. Particular requirements for assemblies for power distribution in public networks



BS EN 60529: 1992	Specification for degrees of protection provided by enclosures lumineaires (IP code)
BS EN 60598-1: 2004	General requirements and tests for luminaries
BS EN 60598-2-22: 2008	Luminaires. Particular requirements. Luminaires for emergency lighting
BS EN 60601: 2007	Medical electrical equipment. General requirements for safety. Collateral standard. Usability
BS EN 60601-1-2: 2007	Medical electrical equipment. General requirements for basic safety
BS EN 60669-1: 2000	Switches for household and similar fixed electrical installations
BS EN 61008- 1: 2004	Residual current operated circuit-breakers without integral overcurrent protection for household and similar used (RCCBs)
ISO 11197: 2009	Essential safety Requirements of Medical Supply Units (supersedes EN 793)
ISO 7396-1:2007	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: 2010	Clinical and clinical support spaces (in preparation; to supersede Health Building Note 40 Common activity spaces: Volume 2 - Treatment areas and Volume 3 - Staff areas)
HBN 00-09	Infection control in the environment
HBN 04-01: 2010	Adult in-patient facilities
HBN 4, Supplement 1	Isolation facilities in acute settings
HBN 22: 2005	Accident and emergency facilities for adults and children
HBN 28: 2006	Facilities for cardiac services
HBN 40: 1995	The patient environment – common activity spaces
HBN 57: 2003	Facilities for critical care
HTM 00: 2006	Policies and principles: best practice guidance for healthcare engineering.
HTM 01	Anti-static precautions
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	Bedhead Services
HTM 17	Health Building Engineering Installations
HTM 21	Facilities for maternity care
HTM 2011	Emergency Electrical Interference
HTM 2014	Abatement of electrical interference
HTM 2020	Electrical safety code for low voltage systems
HFN 30: 2003	Infection control in the built environment
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
72/23/EEC	Low Voltage Directive
89/336/EEC	EMC Directive
93/42/EEC	Medical Devices Directive

This product is designed and where applicable tested and certified in accordance with the aforementioned documents.

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