

# Technical A-Z




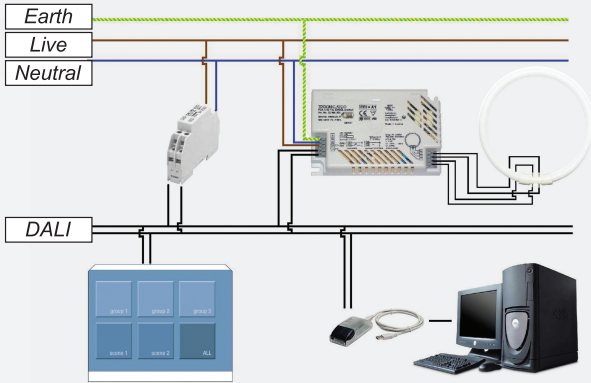
<b>AC Alternating Current</b>	Alternating Current. The movement or flow of electric charge that periodically changes direction. AC current is the format that electricity is supplied in.
<b>Accent Lighting</b>	Accent lighting is directional lighting which highlights and accentuates certain areas or objects.
	316L is a low carbon content grade of Stainless Steel, giving excellent corrosion resistance properties. Due to its corrosion resistance AISI316L is also known as Marine Grade. All Stainless Steel requires a degree of maintenance to ensure its appearance does not tarnish over time. (see ASSCK – Stainless Steel Cleaning Kit below)
<b>Ambient Lighting</b>	The level of background light, usually low and supplemented by Task or Accent lighting.
<b>Ambient Temperature</b>	Surrounding - the ambient temperature is the temperature of the air that surrounds the fixture in the room. A critical criterion for fixture selection especially in extreme temperature environments.
<b>Analogue Dimming 1-10V</b>	<p>1-10V control gear requires an analogue (1-10V) signal from an external source to instruct the ballast / LED Driver to dim.</p> <p>This system is commonly employed in larger installations with scene-set controllers or energy management systems. Digital dimming is also used for PIR presence detection and automatic daylight sensing.</p> <p>Each luminaire requires a 3 core mains supply (L E N) and an additional 1-10V signal cable, normally a 2 core 0.75mm<sup>2</sup> flexible cable. This is looped around any luminaires to be dimmed together (check with the Dimming Controller supplier as there are a maximum number of ballasts / LED drivers which can be connected together, dependent upon lamp type and wattage).</p>
<b>Anti-Ligature</b>	This is a luminaire that is free from points where a cord could be fastened to create a ligature point. If a fitting is classed as Anti-Ligature the ligature risk is eliminated by designing it in such a way that it is not possible for a cordlike object to be looped or tied around it.
<b>ASSCK</b>	Stainless Steel Cleaning Kit To ensure Inox/AISI316L Stainless Steel products from the Collezione Italiana range maintain their high quality finish and appearance, we recommend regular (every 3-4 months) cleaning by using the ASSCK kit.
<b>Asymmetric Distribution</b>	Non-symmetric distribution of light. In many cases, the luminous intensity (light output) may be more pronounced in one direction. Commonly found on floodlights to allow them to be aimed downwards, keeping unwanted upward light spillage to a minimum.
<b>Azimuth</b>	The orientation angle in the horizontal plane, commonly referred to in floodlighting schemes.
<b>Bathroom Zones</b>	<p>Bathroom luminaire installations must comply with legislation; please refer to latest building regulations.</p> <p><b>Zone 0</b> – This is inside the bath or shower. Any fitting used in these areas must be SELV and IPX7</p> <p><b>Zone 1</b> – This is the area above the bath to a height of 2.25m from the floor. In this zone a minimum rating of IPX4 is required. If a 230V luminaire is used, the circuit must be protected by a 30mA RCD.</p> <p><b>Zone 2</b> – This area extends a further 0.6m outside Zone 1. In this zone a minimum rating of IPX4 is required. It is also recommended to have luminaires with a rating of IPX4 around the wash basin (with 0.6m radius of the tap).</p> 

\*Note – The area under the bath is classed as an outside zone providing there is a bath panel in situ which can only be removed with aid of a tool.

**Outside Zones** - Anywhere outside Zones 0, 1 and 2 are classed as outside zones (excluding specific areas) providing water jets are not used, so the minimum rating is IPX0. If water jets are to be used a minimum of IPX5 is required.

Full details can be found in the IEE Wiring Regulations.

<b>Ballast</b>	A device used to operate fluorescent and HID lamps. The ballast, while limiting and regulating the lamp current during operation, provides the necessary voltage to the lamp.
<b>Ballast Losses</b>	Power, which is supplied to ballast but is not converted into lamp energy. Ballast loss is dissipated as heat. There are strict guidelines to ensure only efficient ballasts are used, to avoid unnecessary energy consumption.
<b>Ballast Lumen Factor</b>	The ballast lumen factor (BLF) is the ratio of the light output of the lamp when operated under emergency lighting conditions compared to normal mains supply.
<b>Beam Angle</b>	Somewhat misleading angle of light spread, to which the intensity has fallen of to 50% of the peak value.
<b>Binning (LED)</b>	Binning is the process of methodically sorting and grouping LED's according to measured parameters (normally colour and lumens). This allows design engineers to systematically specify an LED and it allows the manufacturer to order LED's that function consistently. Binning also makes it possible to re-order LED's that match the original.
<b>Brightness</b>	What the eye actually sees. Not to be confused with luminance, which is what a lightmeter, reads.
<b>BSI</b>	<p>British Standards Institute. The UK National Standards Body - <a href="http://www.bsigroup.com">www.bsigroup.com</a></p> <p><b>Key Standards applicable include</b></p> <p>BS 476 part 21 Fire test for building Materials (i-Cage Range)</p> <p>BS 5225 Photometric Data for Luminaires</p> <p>BS 5266 Code of practice for Emergency Lighting</p> <p>BS7671 Requirements for Electrical Installations (Wiring Regulations)</p> <p>BS EN 60570 Track systems for Luminaires</p> <p>BS EN 60598-1 Luminaires - General requirements and tests</p> <p>BS EN 60598-2-2 Luminaires – Specific requirements, Recessed Luminaires</p> <p>BS EN 60598-2-5 Luminaires – Specific requirements, Floodlights</p> <p>BS EN 60598-2-6 Luminaires – Specific requirements, In-built Transformers</p> <p>BS EN 60598-2-22 Luminaires - Specific requirements, Emergency Lighting</p> <p>BS EN 61047 Electronic Transformers</p>
<b>Building Regulations</b>	Legal requirements for the installer to adhere to regarding equipment installed in to a building. Standards exist for Domestic and Non-Domestic premises and there are variations in the different countries of the UK.
<b>Candela (CD)</b>	The SI unit of luminous intensity. The intensity of a light source in a Specific direction.
<b>Capacitor</b>	Component that stores electrical energy. Often used for power factor correction and lamp regulation.
<b>CCT</b>	Correlated Colour Temperature (CCT) defines the colour appearance of a white LED. CCT is defined in degrees Kelvin. See also Colour Temperature
<b>CE</b>	European Community conformity mark. This denotes that the item conforms with the requirements of relevant EU Directives
<b>CELMA</b>	Federation of National Manufactures for Luminaires and Electrotechnical Components for Luminaires. A European body committed to improving standards within the lighting industry. <a href="http://www.celma.org">www.celma.org</a>

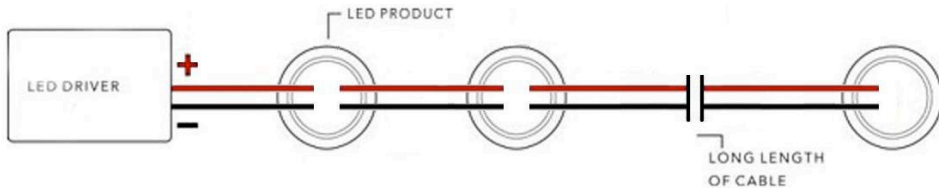
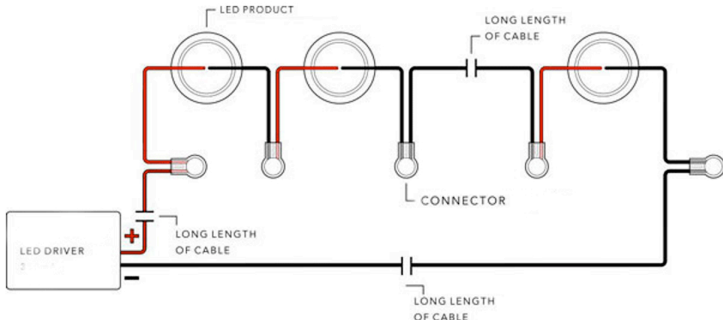
<b>CIBSE</b>	<i>The Chartered Institute of Building Service Engineers. The Society of Light and Lighting, a division of CIBSE, publishes many Lighting Guides, widely used as references for the choice of luminaire and recommended Illuminance level most suitable for a specific area. <a href="http://www.cibse.org">www.cibse.org</a></i>
<b>Class I</b> 	<i>Luminaires in this class are electrically insulated and provided with connection with earth.</i>
<b>Class II</b> 	<i>Luminaire are designed and constructed so that protection against electric shock does not rely on basic insulation only. This can be achieved by means of reinforced or double insulation. No provision for Earthing is provided.</i>
<b>Class III</b> 	<i>Protection against electric shock relies on the supply of Safety Extra Low Voltage (SELV) and in which voltages higher than those of SELV are not generated (Max.50V ac or below).</i>
<b>Colour Rendering Index (CRI/Ra)</b>	<i>Known as CRI or Ra. The appearance of surface colours when illuminated by light from a given source. Good colour rendering implies similarity of appearance to that under an acceptable light source, such as natural daylight.</i>
<b>Colour Temperature (Light sources)</b>	<i>Measured in degrees Kelvin. The Lower the Kelvin figure, the Warmer the lamp Colour Temperature e.g. 2700°K is very warm and 6500°K is very cool/Daylight. Warm White generally refers to &gt;3000 °K, White/Intermediate =3500 °K and Cool White &lt;4000 °K</i>
<b>Compact Fluorescent</b>	<i>Small fluorescent lamps from 5W to 57W that are sufficiently compact to emulate an incandescent lamp. The term also applies to TC-L lamps up to 55W.</i>
<b>Corridor Function</b>	<i>Corridor Function is a setting of DD Dimmable control gear for operation with a PIR (standard on/off). Dimmable ballasts reduces light output to approximately 10% when the area is unoccupied and increases to full light output when presence detector (MWS / PIR) is activated.</i>
<b>DALI (DD3)</b>	<p><i>Digital Addressable Lighting Interface. A Dimming system that employs DALI protocol-based technology (i.e.digital control signals) to control electronic ballasts, controllers and sensors belonging to the system. Each system component has its own device-specific address, and this makes it possible to implement individual device control.</i></p> <p><i>The DALI system offers 64 individual addresses, 16 group addresses and the ability to program each ballast with up to 16 scenes.</i></p> 
<b>Data Sheets</b>	<i>Are available for Ansell products to enable Operation and Maintenance manuals to be completed. These can be obtained via <a href="http://www.anselluk.com">www.anselluk.com</a>.</i>
<b>DC Direct Current</b>	<i>DC (direct current) is the unidirectional flow or movement of electric charge; electrons. The intensity of the current can vary with time, but the general direction of movement stays the same at all times. The term DC is used in reference to voltage whose polarity never reverses.</i>

<b>Dimmers &amp; Dimming</b>	The process by which luminaires are dimmed from 100% to a minimum level that is not always zero. Most luminaires that are required to be dimmed will need special control gear for this operation and typically additional circuit wiring.
<b>Direct Lighting</b>	Lighting in which the greater part of the luminous flux from the luminaires reaches the surface (usually the working plane) directly, i.e. without reflection from surrounding surfaces.
<b>Directional Lighting</b>	Lighting a display object predominately from one direction. Directional lighting can be used to great effect in retail, display windows or even exterior floodlighting, producing strong modelling/shadows to accentuate the object.
<b>Discharge Lamps</b>	Fluorescent lamps are medium pressure discharge lamps but high-pressure lamps include Metal Halide, Ceramic Metal Halide, and High-pressure Sodium lamps.
<b>DLOR</b>	Downward Light Output Ratio. The ratio of the total light output of a luminaire below the horizontal.
<b>DMX</b>	<p>(Digital Multiplex) is a standard for digital communication networks that are commonly used to control stage lighting and effects. It was originally intended as a standardised method for controlling light dimmers, which, prior to DMX512, had employed various incompatible proprietary protocols. It soon became the primary method for linking controllers (such as a lighting console) to dimmers and special effects devices such as fog machines and intelligent lights.</p> <p>DMX has also expanded to uses in non-theatrical interior and architectural lighting, at scales ranging from strings of Christmas lights to electronic billboards. The use of DMX can now be used to control almost anything, reflecting its popularity in theatres and venues.</p>
<b>Double Insulation</b>	Insulation comprising both basic insulation and supplementary insulation. Also referred to as Class II
<b>DSI (DD2)</b>	<p>DIGITAL DIMMING (DSI) – Require a digital (DSI) signal from an external source to instruct the ballast to switch ON /OFF and dim. A Digital Serial Interface (DSI) translates the signals from the controller and operates the ballast / driver.</p> <p>This system is commonly employed in larger installations with scene-set controllers or energy management systems. Digital dimming is also used for Infra-Red remote control, PIR presence detection and automatic daylight sensing.</p> <p>Each luminaire requires a 3 core mains supply (L E N) and an additional DSI signal cable, normally a 2 core 0.75mm<sup>2</sup> flexible cable. This is looped around any luminaires to be dimmed together (check with the Dimming Controller supplier as there are a maximum number of ballasts which can be connected together, dependent on lamp type and wattage). An additional Unswitched live is required if the luminaire incorporates emergency control gear.</p>
<b>Edge Lit</b>	This means that the LED chips are positioned vertically around the perimeter of the product (panel / downlight). Providing an excellent uniform illuminated panel in a fixture as slim as 8mm.
<b>Efficiency</b>	Ratio of power supplied to wattage dissipated.
<b>Efficacy</b>	A metric term used to compare light output to energy consumption. Efficacy is measured in lumens per watt. Efficacy is similar to efficiency, but is expressed in dissimilar units. For example, if a 100-watt source produces 9000 lumens, then the efficacy is 90 lumens per watt
<b>Electromagnetic Ballast (Magnetic Ballast)</b>	Ballast that uses a copper wire winding around a solid core assembly to transform electrical current to start and operate fluorescent and high intensity discharge (HID) lamps.

<b>Electronic Ballasts (High Frequency)</b>	<i>The efficiency of fluorescent lamps can be improved by increasing the frequency of the mains voltage supplied to them. Electronic ballasts and controls can be used to increase the normal mains frequency of 50/60Hz to 25/30KHz improving lamp efficiency by approximately 10%. Electronic ballasts also consume less power than conventional ballasts and when combined with other efficiency benefits, electronic ballasts can achieve savings of around 20% compared to conventional 50/60Hz systems with the same light output levels.</i>
<b>EMC</b>	<i>Electromagnetic Compatibility. Many Electrical items produce unintentional interference, EMC ensures these levels are within guidelines and should therefore not cause unwanted interference with other equipment.</i>
<b>Emergency Lighting</b>	<i>Lighting provided for use when the main lighting installation fails enabling safe exit from a building.</i>
<b>Emergency Lighting Testing</b>	<i>Testing An Emergency Lighting Installation should undergo regular periodic testing to ensure the luminaires are correctly functioning, also to maintain the condition of the batteries. The testing should be recorded in a log book and follow the schedule of</i> <ul style="list-style-type: none"> <li><i>Daily – Visual Check that the charge indicator LED is illuminated</i></li> <li><i>Monthly – A Functional test, that the luminaire operates when mains supply is disconnected</i></li> <li><i>Annually – As Monthly test but for the full rated duration of the luminaire (3hrs)</i></li> </ul>
<b>Escape Route Lighting</b>	<i>Emergency lighting provided on a defined route to ensure that the means of escape from a point in a building to the final exit.</i>
<b>E27 (ES)</b>	<i>Edison Screw (lampholder or lamp cap).</i>
<b>E40 (GES)</b>	<i>Giant Edison Screw (lampholder or lamp cap) common on larger wattage HID lamps.</i>
<b>Filament</b>	<i>The tungsten coil that glows to incandescence when an electric current passes through it.</i>
<b>Fire-Rated</b>	<i>A luminaire, usually a downlight, which has been designed to function also as a fire barrier when installed into a building.</i>
<b>Flicker</b>	<i>A visible oscillation in the luminous flux/light output.</i>
<b>Flood Beam</b>	<i>Reflector lamps and luminaires with in built reflectors having a beam spread of more than 60°</i>
<b>Fluorescent lamps</b>	<i>A lamp, which produces light by a gas discharge that in turn, causes a phosphor coating inside the glass envelope or tube to produce light by fluorescence.</i>
<b>Fluorescent Tubes T12, T8, T5 etc</b>	<i>Refers to their diameter of the lamp glass in eighths of an inch, i.e. 12/8 (38mm) 8/8 (26mm) 5/8(16mm) and respectively. Lamps may be linear or compact fluorescent type.</i>
<b>Flux</b>	<i>(Lumens) falling on to a surface.</i>
<b>Frequency</b>	<i>Rate of alternation in an AC current. Expressed in cycles per second or hertz (Hz).</i>
<b>General Lighting</b>	<i>Lighting designed to illuminate the whole of an area uniformly without provision for special local requirements.</i>
<b>Glare</b>	<i>Refers to the difficulty seeing in the presence of bright light such as direct or reflected sunlight or artificial light such as direct LED output. Because of this, some luminaires include opal diffusers or reflectors to provide an anti-glare function.</i>
<b>Hazardous Area</b>	<i>An environment in which a risk of fire or explosion exists. Commonly referred to as Zone 1, Zone 2 etc, but not to be confused with the Zones of space in bathroom areas. Ansell do not offer any equipment suitable for Hazardous areas.</i>
<b>Hertz (Hz)</b>	<i>Cycles (frequency) per second.</i>



<b>High Risk Task Area</b>	A requirement within Emergency Escape Lighting provided to ensure the safety of people involved in a potentially dangerous process or situation and to enable proper shut down procedures for the safety of the operator and other occupants of the premises.																																
<b>High Power LED</b>	A high power LED, one that is driven at a current of 350mA or higher.																																
<b>Illuminance</b>	A photometric term that quantifies the light on a surface or plane. It is expressed in lumens per m <sup>2</sup> (lux). This can be calculated or measure with a lightmeter.																																
<b>Illumination</b>	The density of luminous flux on a surface this parameter shows how “bright” the surface point appears to the human eye.																																
<b>Incandescent Lamp</b>	A lamp which produces light by electrically heating a filament.																																
<b>Indirect Lighting</b>	A system by which light is reflected from a primary surface, usually ceiling or walls, before reaching the working/task plane. Some luminaires by their design offer indirect lighting.																																
<b>IP Ratings</b>	The designation to indicate the degree of protection consists of the characteristic letter IP followed by two numerals. The first numeral indicates the degree protection against the ingress of solid of objects, whereas the second numeral refers to the degree of protection against the ingress of water. The following symbols are appropriate:																																
<b>Classification of Ingress Protection</b>	<table> <tr> <th>Protection Against Solid Objects</th><th>Protection Against ingress of Water</th></tr> <tr> <td>IP20 Greater than 12mm</td><td>Non-protected</td></tr> <tr> <td>IP21 Greater than 12mm</td><td>Dripping water</td></tr> <tr> <td>IP22 Greater than 12mm</td><td>Dripping water (up to 15° angle)</td></tr> <tr> <td>IP23 Greater than 12mm</td><td>Spraying water (up to 60° angle)</td></tr> <tr> <td>IP40 Greater than 1mm</td><td>Non-protected</td></tr> <tr> <td>IP43 Greater than 1mm</td><td>Spraying water (up to 60° angle)</td></tr> <tr> <td>IP44 Greater than 1mm</td><td>Splashing water</td></tr> <tr> <td>IP54 Dust-protected</td><td>Splashing water</td></tr> <tr> <td>IP55 Dust-protected</td><td>Water jets</td></tr> <tr> <td>IP64 Dust-tight</td><td>Splashing water</td></tr> <tr> <td>IP65 Dust-tight</td><td>Water jets</td></tr> <tr> <td>IP66 Dust-tight</td><td>Powerful water jets</td></tr> <tr> <td>IP67 Dust-tight</td><td>Water immersion</td></tr> <tr> <td>IP68 Dust-tight</td><td>Submersion to declared depth</td></tr> <tr> <td>IP69 Dust-tight</td><td>Powerful high temperature water jets</td></tr> </table>	Protection Against Solid Objects	Protection Against ingress of Water	IP20 Greater than 12mm	Non-protected	IP21 Greater than 12mm	Dripping water	IP22 Greater than 12mm	Dripping water (up to 15° angle)	IP23 Greater than 12mm	Spraying water (up to 60° angle)	IP40 Greater than 1mm	Non-protected	IP43 Greater than 1mm	Spraying water (up to 60° angle)	IP44 Greater than 1mm	Splashing water	IP54 Dust-protected	Splashing water	IP55 Dust-protected	Water jets	IP64 Dust-tight	Splashing water	IP65 Dust-tight	Water jets	IP66 Dust-tight	Powerful water jets	IP67 Dust-tight	Water immersion	IP68 Dust-tight	Submersion to declared depth	IP69 Dust-tight	Powerful high temperature water jets
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<b>Initial Lumens</b>	Lumen output of a lamp after it has been operating 100 hours.																																
<b>Input Voltage</b>	Voltage provided to a ballast/luminaire by the power supply.																																
<b>Inrush Current</b>	Components such as LED drivers can have high inrush currents for milliseconds; this should be considered when specifying switching and breaker ratings.																																
<b>Illuminance</b>	The amount of light.																																
<b>Illumination Level</b>	Refers to light levels of a space at other than initial or rated conditions. This term considers light loss factors such as lamp lumen depreciation, luminaire dirt depreciation, and room surface dirt depreciation.																																
<b>Isolux Diagram</b>	A diagram showing contours of equal illuminance. Can be used to determine the direct illuminance on a plane.																																
<b>Kelvin</b>	A measurement of temperature. 1° F = 256° Kelvin. 1° C = 274° Kelvin. Used to measure colour temperature. The SI unit of temperature used to express colour temperature. The temperature in Kelvin (K) is approximately equal to the temperature in Celsius (°C) plus 273.																																

<b>Kwh</b>	<i>The kilowatt-hour (symbolised kWh) is a unit of energy equivalent to one kilowatt of power expended for one hour of time. This figure is required to complete energy comparison calculations.</i>
<b>Lamp</b>	<i>A device which converts electrical energy into light.</i>
<b>LED</b>	<i>Light-emitting Diode. An LED is a solid-state semiconductor device that converts electrical energy directly into light.</i>
<b>LED Driver / Converter</b>	<i>An LED driver is a device that manages power and controls the current flow for an LED lighting product. LED lighting does not require high voltage, and depending on the application, could even use batteries or solar power. In the HB-LED lighting market, the term driver is usually applied to a device that can accept an input voltage and produce the required voltage. An important factor that affects the correct selection of a particular driver is the way in which multiple LEDs are actually wired together.</i>
<b>LED Parallel Wiring</b>	<p><i>Parallel wiring means that each component has the same supply voltage and all fittings on the circuit will have the same voltage across the luminaire terminals. The battery current (Amps) is divided by the number of luminaires on the circuit. If one luminaire fails then the remaining fittings on that circuit will stay lit.</i></p>  <p>The diagram illustrates parallel wiring. An LED DRIVER is connected to three LED PRODUCTS. Each LED PRODUCT is connected to the driver's output lines (positive and negative) via a separate branch. A LONG LENGTH OF CABLE is shown connecting the driver to the first LED product.</p>
<b>LED Series Wiring</b>	<p><i>Series wiring means that each component has the same current and the battery voltage is divided by the number of luminaires on the circuit. If one luminaire fails then the remaining fittings on that circuit will NOT stay lit. <b>Please note that incorrect wiring of an LED can result in irreparable damage to the LED and associated power supplies.</b></i></p>  <p>The diagram illustrates series wiring. An LED DRIVER is connected to a single line that passes through three LED PRODUCTS in sequence. The line is connected back to the driver's negative terminal. A LONG LENGTH OF CABLE is shown connecting the driver to the first LED product. A CONNECTOR is used to join the series line back to the driver.</p>
<b>LED White</b>	<i>Previously, the only way to produce white LED light was by the additive colour mixing of the three basic colours using so-called MULTILED, i.e., three semiconductor chips (red, green and blue LED) had to be combined. Today, manufacturers can produce white LED light with only a single chip. In luminescence conversion, only a blue LED is used, whose light stimulates a luminescent substance that emits yellow light, the system produces the colour white. Depending on the composition of the luminescent substance, various white tones can be achieved such as warm white, cool white etc</i>

LIA



Ansell Lighting is an accredited member of this leading UK trade organisation. All Ansell manufacturing facilities are audited on an annual basis to ensure compliance and quality.

[www.thelia.org.uk](http://www.thelia.org.uk)

<b>Lighting Design</b>	<p>Ansell offer a lighting design service provided by a team of vastly experienced and industry qualified staff. A simple to complete form is available to ensure designs are prepared with all of the correct criteria taken into consideration.</p> <p><b>Contact:</b> E: <a href="mailto:lightingdesign@anselluk.com">lightingdesign@anselluk.com</a> T: 01942 433 537</p>
<b>Light Meter</b>	<p>or exposure meter. A device use for the measurement of light intensity. This should have a cosine corrected sensor, usually a convex shape, to measure light falling on to it from all directions and a digital readout for accuracy.</p>
<b>Light Spillage/Trespass</b>	<p>Unwanted or nuisance light which is spilled beyond the boundry of the illuminated property or area.</p>
<b>Lm/W</b>	<p>Lm/W can be separated into two categories: Lumens per Watt and Luminaire Lumens per Watt. Each can be used dependent upon the requirement and application type.</p> <p>Lumen per Circuit Watt is a measure of the efficacy of a light source in terms of the total lamp lumens compared to the power consumed. For example, a 100-watt fixture producing 1750 lumens gives 17.5 lumens per watt.</p> <p>Luminaire Lumens per Circuit Watt is a measure of the total lamp lumens and how the luminaire manipulates this light (L.O.R.) compared to the power consumed. For example, a 100-watt fixture producing 1750 lumens with a L.O.R. of 0.50 gives 35 luminaire lumens per watt.</p>
<b>LOR</b>	<p>Light Output Ratio. The ratio of the total light output of a luminaire under stated conditions to that of the lamp or lamps under reference conditions. The higher the figure, the more efficient the luminaire is. LOR may consist of any ratio of DLOR and/or ULOR.</p>
<b>Lumen</b>	<p>Standard unit of luminous flux. Describes the quantity of light emitted by a light source or received by a surface.</p>
<b>Lumen Depreciation</b>	<p>Figures published refer to the L50, L70 or L80 classification system where the number relates to the percentage of light output. So a 30,000hr L70 LED would be expected to have 70% of its rated output at 30,000hrs. LED's are subject to very small operating temperature parameters and figures quoted are typically at 25°C.</p>
<b>Luminance</b>	<p>The physical measure of brightness measured by the luminous intensity of the light emitted or reflected in a given direction from a surface element dived by the area of the element in the same direction. The SI unit of luminance is the candela per square metre (Cd/m<sup>2</sup>) It is very difficult to determine other than with a luminance meter.</p>
<b>Luminous Efficiency</b>	<p>The ratio of the luminous flux emitted by a lamp to the power consumed by the lamp. When the power consumed by the control gear is taken into account this term is sometimes known as lamp circuit luminous efficacy and is expressed in lumens/circuit watts.</p>
<b>Lux</b>	<p>The metric unit of measure for illuminance of a surface. One lux is equal to one lumen per metre-squared.</p>
<b>Maintained Luminaire</b>	<p>A luminaire containing one or more lamps all of which operate from the normal supply or from the emergency supply when required.</p>



<b>Metal Halide Lamp</b>	<i>A high intensity discharge (HID) lamp, which uses a mercury discharge modulated by other additives to give, enhance colour and efficiency.</i>
<b>Mercury Lamp</b>	<i>A type of high intensity discharge (HID) lamp in which most of the light is produced by radiation from mercury vapour. Available in clear and phosphor-coated lamps.</i>
<b>Microwave Sensor (MWS)</b>	<i>Microwave Sensor( MWS ) Sophisticated presence detector that uses low power Microwave signals which are then reflected by moving persons and measured using the “Doppler effect” method. As lamps will have life expectancy affected by frequent switching, sensors integral to Ansell luminaires have been configured to maximise lamp life.</i>
<b>M3</b>	<i>Maintained 3hour, Mode and duration (minimum with fully charged batteries) of an Emergency luminaire. To ensure the full duration is achieved, Emergency luminaires must be correctly maintained to condition the batteries.</i>
<b>Night Light (NL)</b>	<i>A light source used only to provide low levels of illumination at night, for security or safe movement of persons. This may either be a standalone luminaire or an option incorporated within a luminaire used for general lighting. Low wattage compact fluorescent lamps are ideal for this application.</i>
<b>NiCd</b>	<i>The nickel–cadmium battery (NiCd battery or NiCad battery) is a type of rechargeable battery using nickel oxide hydroxide and metallic cadmium as electrodes. The abbreviation Ni-Cd is derived from the chemical symbols of nickel (Ni) and cadmium (Cd)</i>
<b>NiMH</b>	<i>A nickel–metal hydride battery, abbreviated NiMH or Ni–MH, is a type of rechargeable battery. Its chemical reactions are somewhat similar to the largely obsolete nickel–cadmium cell (NiCd). NiMH use positive electrodes of nickel oxyhydroxide (NiOOH), like the NiCd, but the negative electrodes use a hydrogen-absorbing alloy instead of cadmium, being in essence a practical application of nickel–hydrogen battery chemistry. A NiMH battery can have two to three times the capacity of an equivalent size NiCd, and their energy density approaches that of a lithium-ion cell.</i>
<b>Non-Maintained Luminaire</b>	<i>Luminaire is off when the mains power is available to charge the batteries. Upon supply failure the luminaire is energised from the battery pack.</i>
<b>Open (anti-panic) Area Lighting</b>	<i>A part of Emergency Escape Lighting provided to avoid panic and provides illumination-allowing people to reach a place where an escape route can be identified.</i>
<b>Operating Frequency</b>	<i>Refers to the frequency at which the output of a lamp or LED source operates per second. Electronic or high frequency control gear will increase the operating frequency into an operating frequency that the human eye cannot detect.</i>
<b>PIR</b>	<p><i>Passive InfraRed (Detectors) are a type of occupancy sensor. Ansell do not recommend HF compact fluorescent luminaires controlled by PIR's and they should have a minimum of a 20 minute switching cycle.</i></p> <p><i>The PIR's are suitable for LED lamps / luminaires. LED lamps / luminaires can be switched at any frequency but provision must be taken for the in-rush current of the LED control gear. Ansell recommends the use of branded PIR devices.</i></p>
<b>Phosphor</b>	<i>The powder coating in an electric discharge lamp is the phosphor. The most common chemical used to make white light is calcium halophosphate. Other colours can be produced by a variety of other chemicals.</i>
<b>Photocell</b>	<i>A light-sensing device used to control luminaires and dimmers in response to detected light levels.</i>

<b>Phase Cut Off / Resistive Dimmers</b>	Devices used to vary the brightness of a light. By decreasing or increasing the RMS voltage and, hence, the mean power to the lamp, it is possible to vary the intensity of the light output. Although variable-voltage devices are used for various purposes, the term dimmer is generally reserved for those intended to control light output from resistive incandescent, halogen, and (more recently) compact fluorescent lights (CFLs) and light-emitting diodes (LEDs). More specialised equipment is needed to dim fluorescent, mercury vapor, solid state and other arc lighting.
<b>Photometrics</b>	Photometrics is a term that expresses the result of scientifically tested Ansell Lighting products to produce information that can be used in lighting design packages such as Relux. This information is available for download at <a href="http://www.anselluk.com/downloads">www.anselluk.com/downloads</a>
<b>Ra</b>	See Colour Rendering
<b>REACH</b>	Registration, Evaluation, Authorisation & restriction of Chemicals. An EU Directive covering the use of hazardous chemicals used in the manufacturing process and supply of products.
<b>Relux</b> 	The Ansell Lighting design department utilises Relux as the standard lighting design package and visual presentation tool. This programme is available free for download from <a href="http://www.relux.biz">www.relux.biz</a>
<b>RoHS</b> 	Restriction of Hazardous Substances (2002/95/EC) is an article 95 directive, meaning it is consistent across all European Union member states. Since July 1st 2006 the use of hazardous substances is restricted in products, to prevent damage to the environment. The prohibited substances are Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls and Polybrominated Diphenyl Ethers.
<b>Self-Contained Emergency Luminaire</b>	The most common type of Emergency lighting luminaire, where all of the components are within one luminaire. This can include gear boxes connected directly to individual luminaires but outside the main luminaire housing.
<b>Self Test Emergency</b>	The Self-Test circuit utilises an accurate internal clock which is programmed to interrupt the permanent mains supply at set intervals thus initiating emergency lighting tests. The Self Test units are supplied pre-programmed to initiate short duration tests once every month, a one third duration test after six months and a full duration test once every 12 months (as recommended in BS5266 and EN50172).
<b>SELV</b>	Separated Extra-Low Voltage. An extra-low voltage system, which is electrically separated from Earth and from other systems in such a way that a single fault cannot give rise to the risk of electric shock.
<b>Stroboscopic Effect</b>	The optical elusion of motion in which moving objects appear stationary when illuminated with periodically changing light. This is due to the movement of the item occurring at the same frequency as the supply to the lamp, normally 50Hz or 50 times per second. This can be particularly dangerous in industrial applications but can be cured by using high frequency control gear.
<b>Switch Dim (DD1)</b>	<p>SWITCH DIM – SwitchDIM operation for ON / OFF and dimming is by means of a push-to-make (retractive) switch, and is the simplest form of dimming. A brief operation of the switch (&lt;0.6sec), will switch ON or OFF. When the push to make switch is held, the ballast is dimmed. On a further push, the ballast is dimmed in the opposite direction.</p> <p>For full operation the circuit should be as shown below, using a 4 core installation (switched live, permanent live supply, neutral and earth).</p>

<b>Symmetrical Distribution</b>	<i>Symmetric distribution of light. In many cases, the luminous intensity (light output) is distributed exactly the same either side of the lighting plane. Commonly found on floodlights, downlights and projectors.</i>
<b>Task lighting</b>	<i>Localised lighting intended for a specific task, examples include bedhead reading lights, desk lamps and inspection bench lighting.</i>
<b>t°C</b>	<i>Rated value of the casing's maximum operating temperature. Typically marked on control gear components.</i>
<b>Thermal Cut-out</b>	<i>A protection from overheating due to abnormal lamp conditions (rectifier effect, short circuit or overload), with automatic restart after cooling. If a lamp is in a cycle of, runs for a duration, turns off, then restarts and runs for the duration again, it is likely that a thermal cut-out is operating.</i>
<b>Thermal Performance</b>	<i>This term refers to the design / thermal management of a luminaire.</i>
<b>TP(a), TP(b)</b>	<i>The Building Regulations Approved Document B2 (buildings other than dwellinghouses) places restrictions on the use of certain thermoplastic materials when they are used as lighting diffusers and form part of a ceiling. TP(a) rated materials may be used almost without restriction, restrictions exist on the use of TP(b) rated materials.</i>
<b>Transformer</b>	<i>A device by which the voltage of alternating current is changed. Traditional transformers are constructed by copper wire wound around an iron core, Electronic transformers are also commonly found. Typically used for supplying low voltage lamps, most transformers can be dimmed. The success of dimming depends on many factors including the type of dimmer and transformer used. Ansell can not recommend particular dimmers and suggest that the dimmer supplier is consulted for compatibility.</i>
<b>ULOR</b>	<i>Upward Light Output Ratio The ratio of the total light output of a luminaire above the horizontal.</i>
<b>Unified Glare Rating</b>	<i>UGR is a calculated value for the amount of glare or discomfort produced by a luminaire; its value ranges from 10 to 30, the higher the value the more perceptible the glare effect.</i>
<b>Utilisation Factor</b>	<i>The proportion of the luminous flux emitted by a light source, which reaches the working plane.</i>
<b>UV Ultra Violet</b>	<i>Invisible radiation that is shorter in wavelength and higher in frequency than visible violet light (literally beyond the violet light). Lamps that emit varying degrees of long wave ultraviolet light, which does cause harm or degradation overtime, may require filters to absorb the UV. A 'failed' lamp that does not emit any visible light is still capable of emitting high levels of UV light but is not noticed as the lack of visible light gives the impression that the lamp is not operating. The high levels of UV can then cause damage to materials, particularly plastics, with dis-colouration and crumbling of the material. Therefore failed lamps should always be replaced immediately. Ultraviolet light source can be used to create special lighting effects with fluorescent materials. UV sources can be incandescent, fluorescent, or preferably HID lamps.</i>
<b>Voltage</b>	<i>The electric potential which exists between two components in an electrical circuit. Lamps are rated in terms of wattage at a specific voltage. Operating a lamp at another voltage from that which it is rated may cause the lamp to burn at less than full intensity or to burn out very quickly.</i>
<b>Watt (W)</b>	<i>The unit for measuring electrical power. It defines the rate of energy consumption by an electrical device when it is in operation. The energy cost of operating an electrical device is calculated as its wattage times the hours of use. In singlephase circuits, it is related to volts and amps by the formula: Volts x Amps x Power Factor = Watts. (Note: For AC circuits, Power Factor must be included.)</i>

## WEEE

Compliance with the Waste Electrical and Electronic Equipment Directive.  
This covers the collection, treatment and recycling of equipment at end of life. WEEE producer numbers are

Ansell Electrical Products (Warrington) - **WEE/FH0429XT**

Ansell Sales and Distribution (Belfast) - **WEE/GJ0292UQ**

When supplied as B2B EEE the producer invokes regulation 12.2 and passes all WEEE obligations to the end user.

## Zenith

The direction directly above the luminaire (180° angle). Term used in floodlighting designs.