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LED LIGHTING SYSTEMS

STEP, AISLE, WALL AND MOOD LIGHTING



GRADUS

GRADUS

Our products are installed in prestigious buildings in both UK and International markets. With customers ranging from designers & architects to contractors and building owners and with clients such as Marks & Spencer, Virgin and BMW you can trust Gradus to provide products that work.



The Gherkin, London, England



Wembley Stadium, London, England



Hong Kong International Airport



Marina Bay Sands Resort, Singapore



Royal Caribbean Cruise Ship



The Christie, Manchester, England



Burj Al Arab, Dubai, UAE



Eiffel Tower, Paris, France

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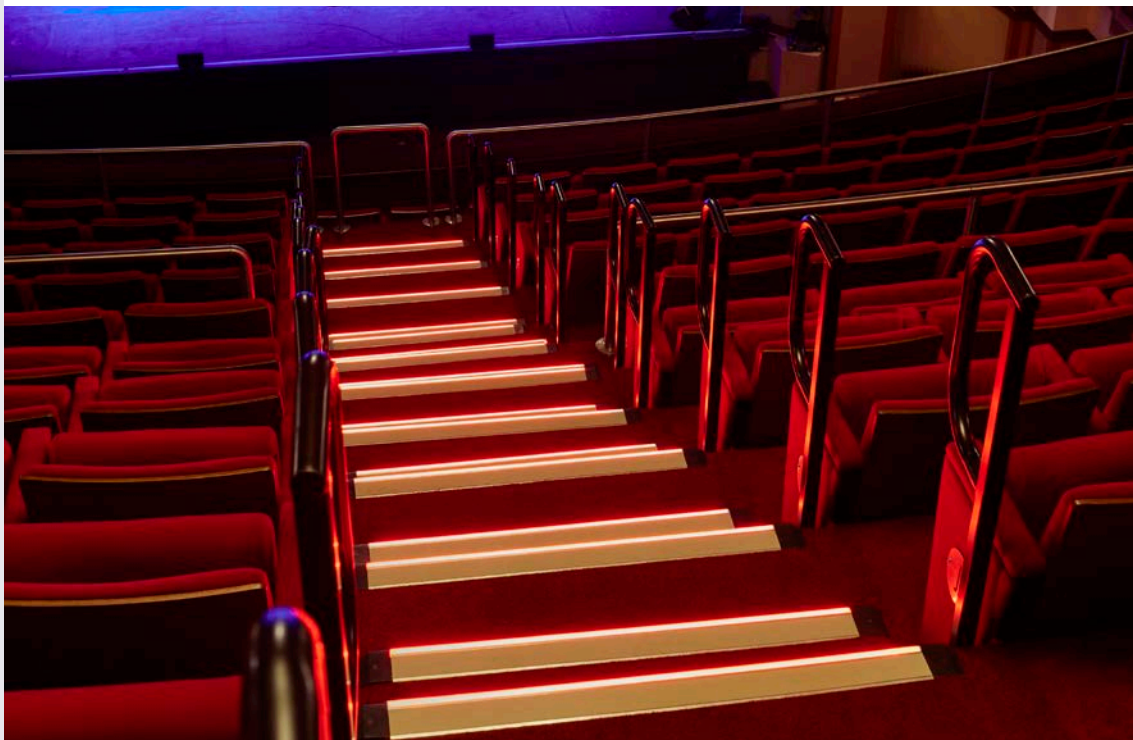
Product Update

NEW

Gradus Impression

This incredibly versatile lighting system incorporates LED tape to produce a continuous lighting effect and is ideal for medium to well-lit environments. With an increased focus towards the visual appearance and lighting effect produced it can completely transform a space, whilst also ensuring the required safety benefits are maintained to protect the public from slips, trips and falls.

Compatible with all Gradus aluminium LED step profiles and LED architectural lighting profiles.



- *Commercial grade LED tapes feature chip-on-board (COB) technology to produce a brighter, more evenly diffused light*
- *Comprehensive choice of LED colours and brightness options*
- *Fully dimmable with zero spotting*
- *Available in IP20 uncoated or IP65 splashproof versions*
- *Supplied in 24v DC as standard*

See page 18 for details





commonwealth
sport

Global
Esports

confetti
Institute of creative technologies

NTU Nottingham Trent
University

RLCS X CHAMPIONSHIPS | NORTH AMERICA

THE GENERAL.NRG 1 4:32 SPACESTATION 0

GRAND FINAL | SERIES 2 | 2017

Garrett 100 Justin 20 Soumya 0

verizon

Why Gradus

Gradus Lighting is a specialist business offering a range of extra low voltage safety and decorative LED products into a wide variety of sectors.

With over 25 years experience in the design and manufacture of specialist LED Lighting, Gradus can provide product solutions as supply only or as part of a supply and fit package for extra peace of mind.

Services

Full Project Management Service

Through our dedicated Specification Consultants and Contracts Team, Gradus can manage the entire process to tailor quotations and orders to the specific needs of each individual project. See page 67 for details.

Website

Visit www.gradus.com to access all of our products and services.

Fabrications

When projects aren't straightforward, we can help customise many of our products to ensure a solution that fits.

Samples

Call Gradus or build a design board online and get all the samples you need fast.

Tel: 01625 428922
or email: imail@gradus.com





Design

- Safety: products are developed with safety at the forefront of design. All LED Step Profiles and Aisle & Floor Profiles effectively contribute to a reduction in slips, trips and falls.
- Performance: extensive research and testing to ensure durability and appearance retention throughout a product's life.
- Aesthetics: a variety of colours, finishes and lighting effects ensure harmonisation with interior designs and allow visual contrast to be achieved where relevant.
- In-house product design and development.

Sustainability

- ISO 14001 Environmental Management accredited company.
- Our pledge is 'To meet our present business needs without compromising our long term future'.
- We have a firm set of environmental objectives allowing us to focus on raw material selection, legislation, waste reduction, training and recycling.

REACH



- REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. As of 1 January 2021 the UK REACH and the EU REACH regulations operate independently from each other.
- Gradus products do not contain any substances currently classified as Substances of Very High Concern (SVHC) at a concentration greater than 0.1% as declared against both the EU and UK Candidate Lists.
- If you have any specific concerns regarding the composition of a particular product, contact Gradus Technical Support.

Knowledge

- Member of the Contract Flooring Association (CFA)
- Registered member of the RIBA CPD Providers Network
- Technical Support
- Member of NBS Source
- Network of trained specification consultants







GRADUS
A Gerflor company

FUNDAMENTALS

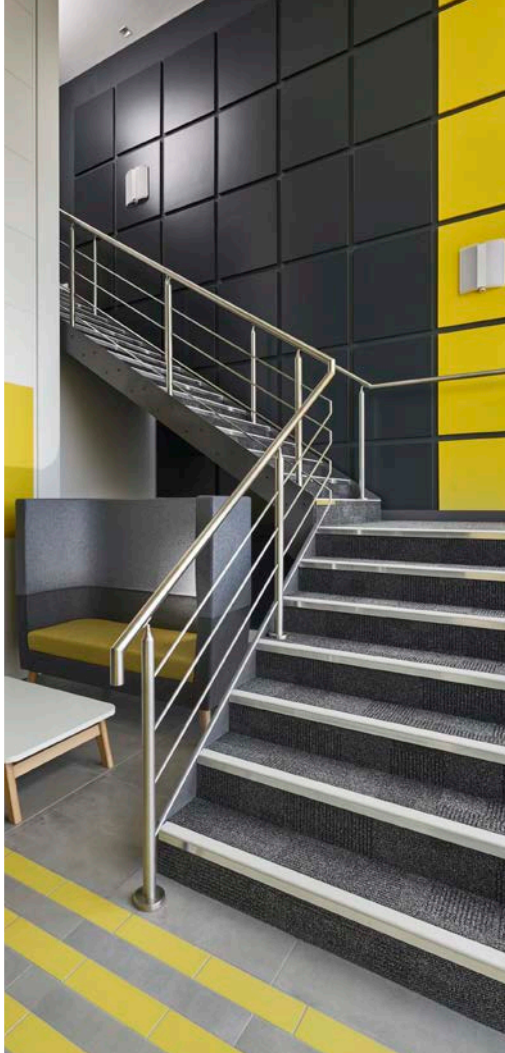
A **FUSION** OF PRODUCTS & VALUES

Gerflor and Gradus offer products which are ideal for use in a wide variety of applications including healthcare, commercial office, education, retail, hospitality & leisure and housing. Products can be combined to provide a complete package that balances performance, aesthetics and cost alongside environmentally responsible manufacturing processes.

A **FRESH** APPROACH

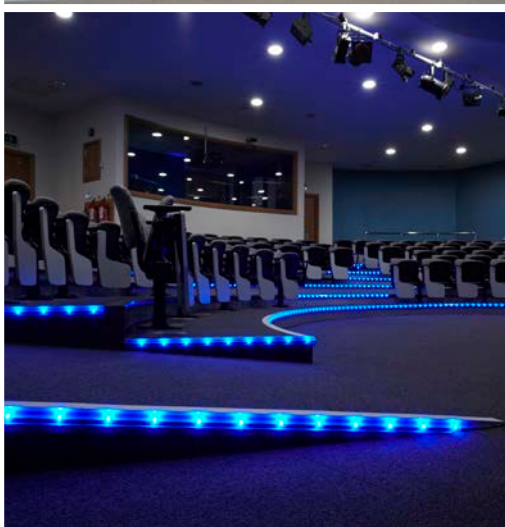
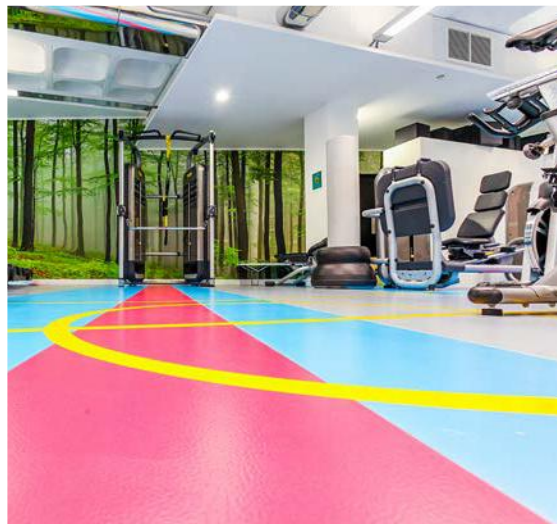
We believe passionately in providing the customer with the very best in terms of service. Through our combined team we can offer expert advice to help with product selection backed up with extensive UK stocks to ensure our products are delivered on-time, every-time.

A NEW LEVEL
OF INNOVATION,
QUALITY, SERVICE
& TEAMWORK



STAIR EDGINGS
FLOOR TRIMS
MATTING
WALL PROTECTION
LIGHTING

NEXT DAY SERVICE
PRODUCT EXPERTISE
WARRANTY
SUSTAINABILITY





CREATION LVT
TARASAFE
TARAFLEX
TECHNICAL TILES
CARPETS



HOUSING
RETAIL
HOSPITALITY
TRANSPORT



EDUCATION
HEALTHCARE
COMMERCIAL OFFICE
SPORTS

Range Overview



LED Lighting Systems

Gradus offer a series of lighting systems in multiple LED colours and brightness options with variants to suit most interior environments. These can be combined with profiles, control equipment and power supplies to create a complete Gradus package to meet your project needs.

- **NEW** Gradus Impression - See pages 18-19
 - Gradus Continuity - See page 20
 - Gradus Interlok Advance - See page 21
 - Gradus Loom - See page 60
-



LED Step Lighting

A comprehensive range of profiles that, when combined with a suitable lighting system, can create both a safe and decorative lighting solution for stairs.

See pages 23-47



NEW LED Architectural Lighting

Centred around providing clients with the ability to transform an environment with subtle accents or striking features, this range is geared towards those looking for a decorative LED Lighting solution that is sure to create a real “wow” factor.

See pages 49-57



LED Lighting Solutions for Auditoria

A series of solutions ideal for use within low-light cinema, theatre and leisure environments to visually enhance the aesthetics, provide guidance to the public, whilst also helping to create a safer environment for building users.

See pages 59-65



Typical Applications

Gradus LED Lighting Systems can be installed in a wide variety of applications, spanning across multiple sectors.

Cinema

Multi-screen
Boutique
Home



Hospitality

Bars
Restaurants
Nightclubs
Lounges

Healthcare

Private Clinics
Private Hospitals



Retail

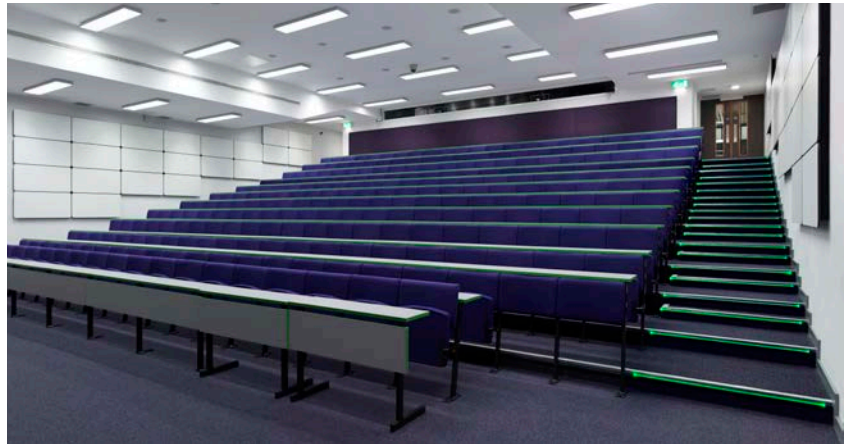
Boutique Shops
Shopping Centres
Food Courts



If you have a project that could benefit from LED Lighting or require further details, call 01625 428922 to discuss with a member of our specialist team.

Education

Breakout Areas
Libraries
Lecture Theatres
Canteens

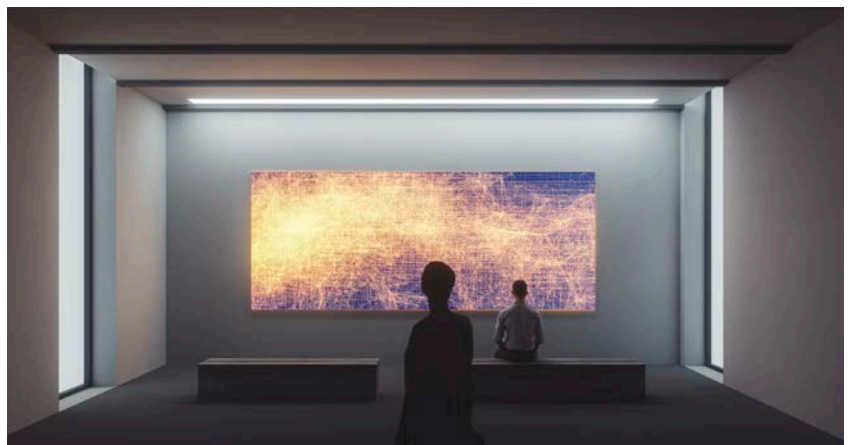


Health & Fitness

Gyms
Fitness Studios
Health Spa's

Leisure

Theatres
Museums & Galleries
Casinos



Residential

Luxury Developments

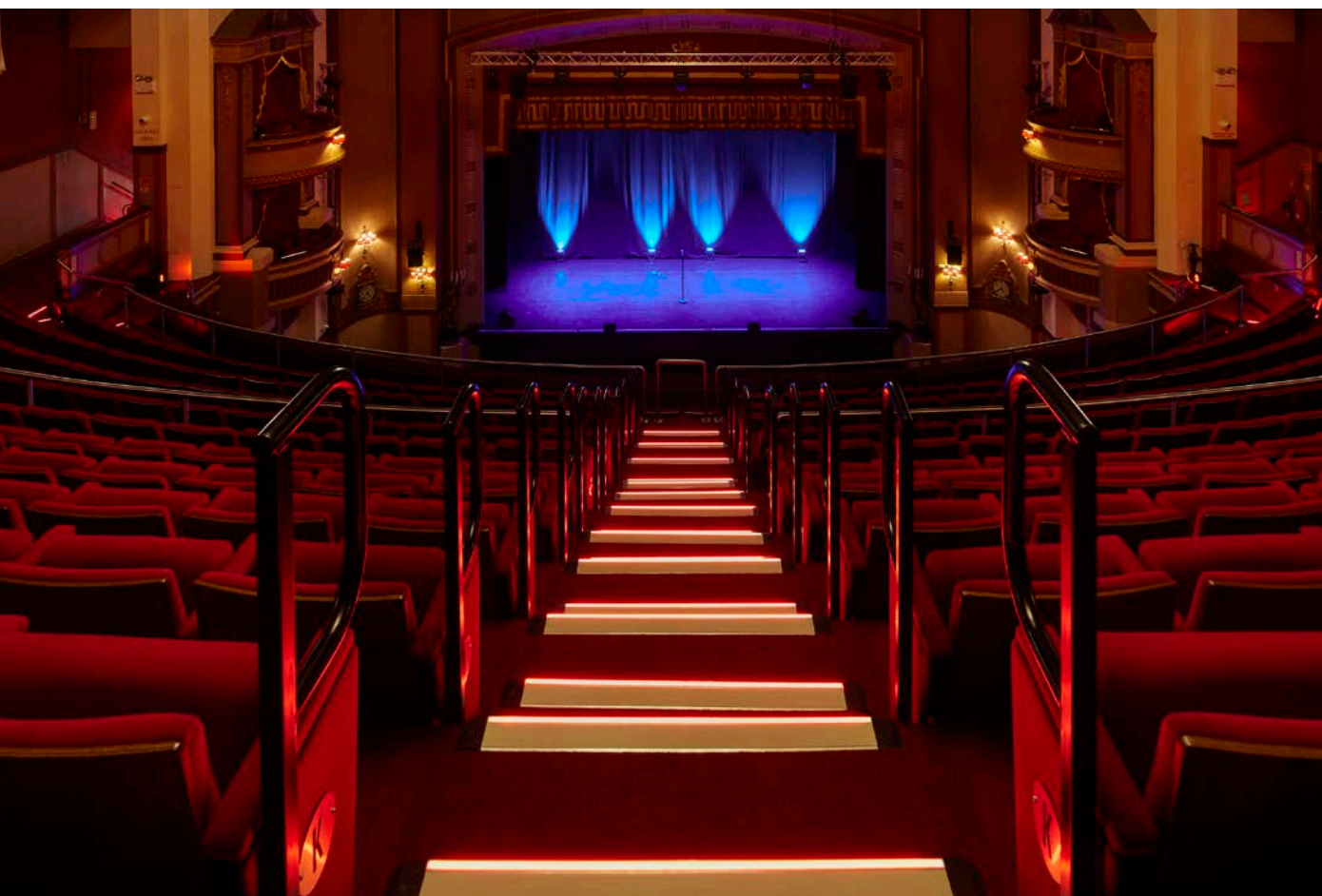


LED Lighting Systems

Gradus offer 3 main lighting systems in multiple LED colours and brightness options with variants to suit most interior environments. These can be combined with profiles, control equipment and power supplies to create a complete Gradus package that meets your project needs.

NEW Gradus Impression

24v DC LED Lighting System

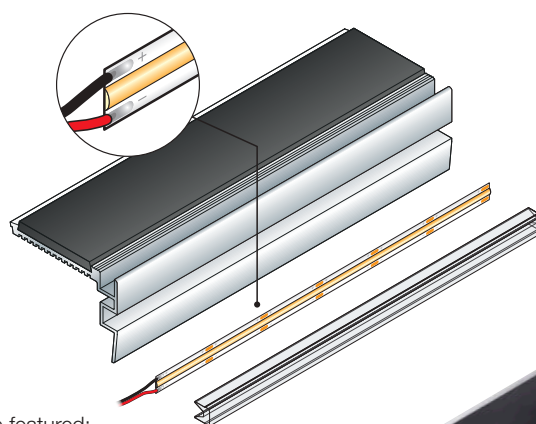


Our new and incredibly versatile **Gradus Impression** lighting system creates a brighter, more evenly diffused linear lighting effect that runs throughout the entire length of the profile and is designed for use within medium to well-lit environments across a range of sectors.

- Commercial grade LED tapes feature chip-on-board (COB) technology to produce a brighter, more evenly diffused light.
- Comprehensive choice of LED colours and brightness options. See adjacent page.
- Fully dimmable with zero spotting.
- Available in IP20 uncoated or IP65 splashproof versions.










Contact Gradus for additional technical information or details of suitable power supplies and control equipment available.



Typical Example




Profile featured:
AFT71L with
Gradus Impression

NEW Gradus Impression - LED Tape Options

Gradus Impression – Whites & Single Colour LED Tapes									
	5W Whites & Single Colours		10W Whites & Single Colours			15W Whites & Single Colours			
LED colour availability									
	2700k White	3000k White	4000k White	6000k White	Blue	Green	Amber	Red	Pink
Environment	Interior use								
Gradus profile compatibility	Gradus Aluminium Step Lighting & Architectural Lighting Profiles								
LED type	Chip-on-board (COB) technology								
Tape width	8mm		10mm						
Cut points	At 42mm intervals		At 45mm intervals						
CRI	All LED colours = 90+ (with exception of Blue = 85+)								
IP rating	IP20 uncoated or IP65 splashproof version								
Power consumption (Based on a 5m run)	4.8W/m		9.6W/m			14.4W/m			
Voltage	24v DC								

Gradus Impression – Colour Changing RGB & RGBW LED Tapes		
	15W RGB	18W RGBW
LED colour availability	 RGB	 RGBW (Cool White 6000k)
Environment	Interior use	
Gradus profile compatibility	Gradus Aluminium Step Lighting & Architectural Lighting Profiles	Gradus Architectural Lighting Profiles
LED type	Chip-on-board (COB) technology	
Tape width	10mm	12mm
Cut points	At 50mm intervals	At 33mm intervals
CRI	90+	90+
IP rating	IP20 uncoated or IP65 splashproof versions	IP20 uncoated or IP65 splashproof versions
Power consumption (Based on a 5m run)	15W/m	18W/m
Voltage	24v DC	

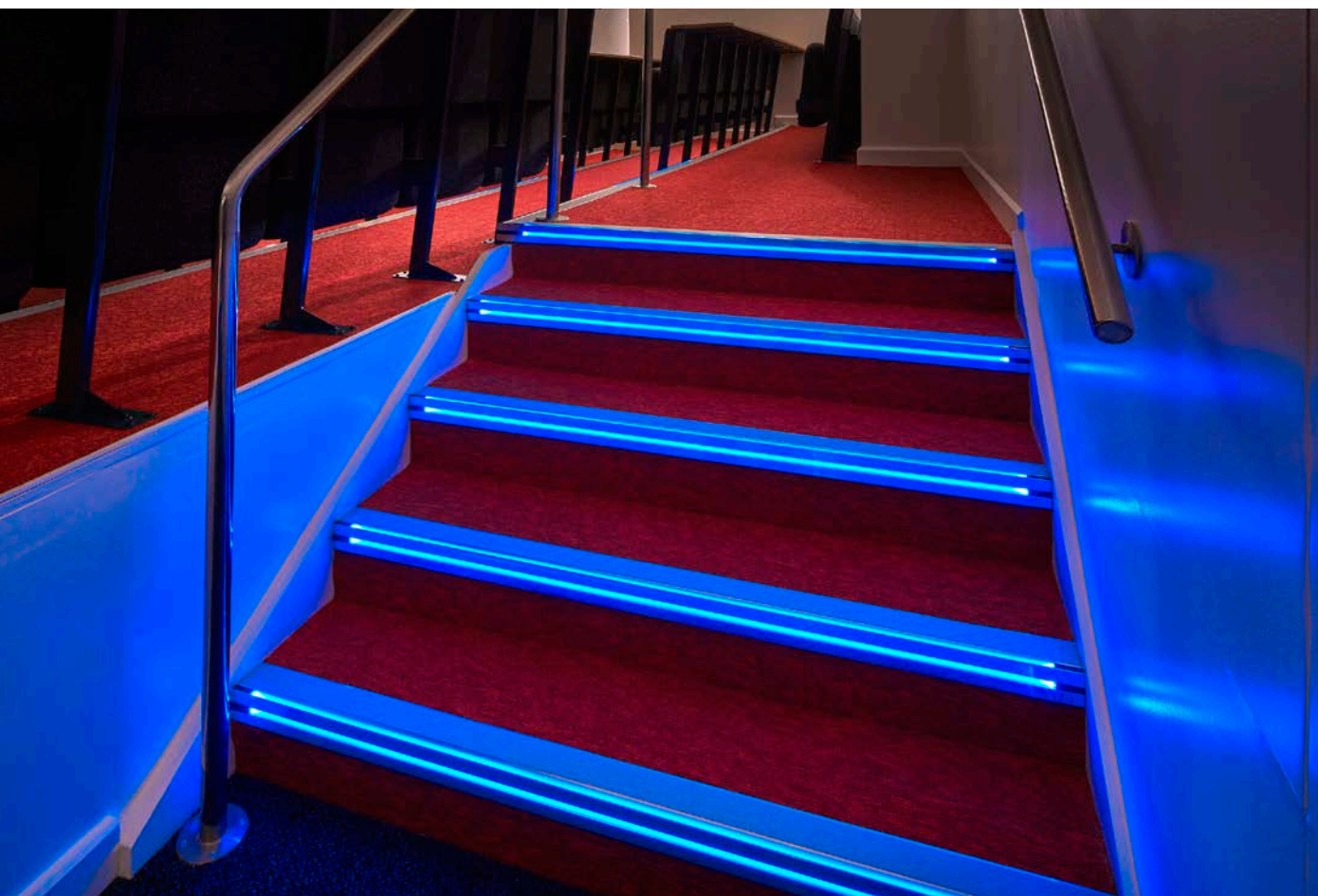


Gradus Impression – Dual-White CCT LED Tapes	
	14W Colour-temperature Changing Tape (CCT)
LED colour availability	Select any shade within a colour temperature range of 2700k - 6000k 
Environment	Interior use
Gradus profile compatibility	Gradus Aluminium Step Lighting & Architectural Lighting Profiles
LED type	Chip-on-board (COB) technology
Tape width	10mm
Cut points	At 26mm intervals
CRI	90+
IP Rating	IP20 uncoated or IP65 splashproof versions
Power consumption (Based on a 5m run)	14W/m
Voltage	24v DC



Gradus Continuity™

12v DC LED Lighting System

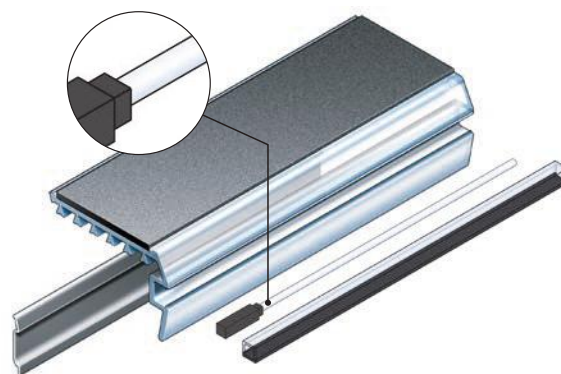


Gradus Continuity™ is an LED lighting system that provides a continuous linear lighting effect that clearly defines the step edge in darkened conditions or low-light applications and is also subtle enough for use in 3D cinemas.

- Continuous lighting effect
- LED housed in polycarbonate assembly unit. Light is projected through the fibre optic rod
- Sealed LED system provides resistance to moisture ingress e.g. soft drink spillage (IP44)
- LED lifetime of up to 50,000 hours
- Power consumption of 0.3 watts per LED

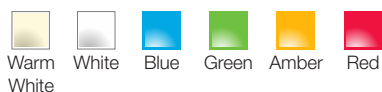
Contact Gradus for additional technical information or details of suitable power supplies and control equipment.

Typical Example



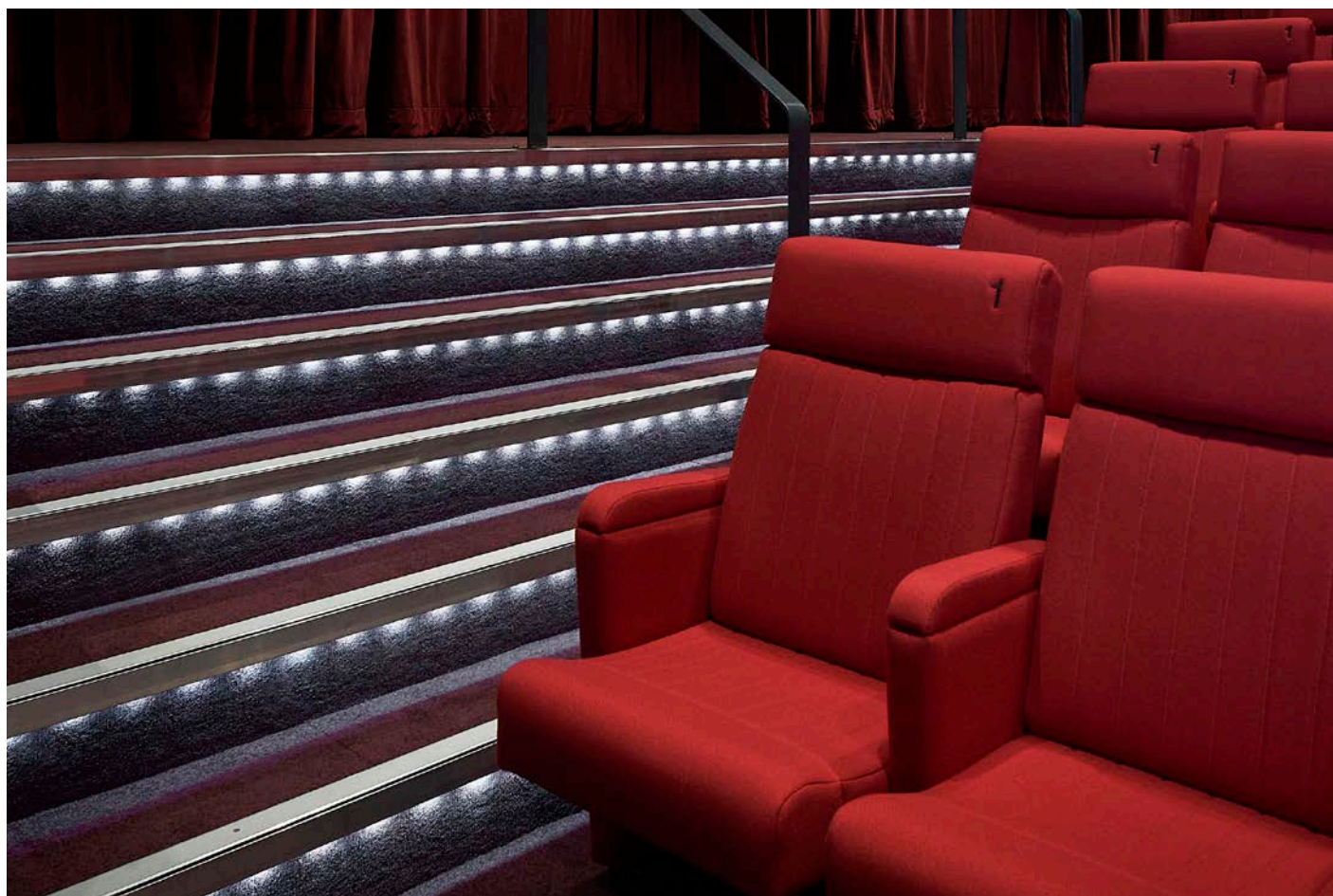
Profile featured:
RNT1218L Clear PVC-u
with Gradus Continuity

Colour Availability



Gradus Interlok Advance™

12v DC LED Lighting System

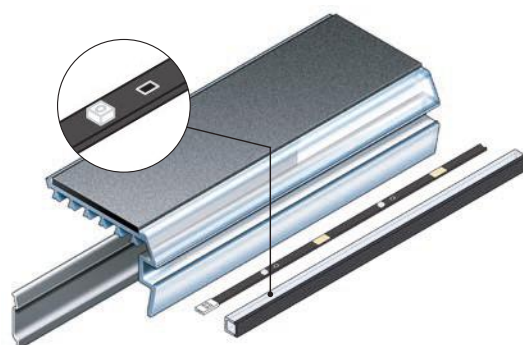


Gradus Interlok Advance™ is an LED lighting system that offers a pin point lighting effect.

- Pin point light effect
- LEDs are surface mounted onto strips (600mm strips)
- Strips can be cut to desired length without causing any reduction in brightness
- LED lifetime of up to 50,000 hours
- Power consumption of 1.8 watts per strip
- LEDs are spaced at either 50mm or 100mm intervals

Contact Gradus for additional technical information or details of suitable power supplies and control equipment.

Typical Example



Profile featured:
RNT1218L Clear PVC-u with
Gradus Interlok Advance
(100mm spacing)

Colour Availability





LED Step Lighting

A comprehensive range of profiles that, when combined with a suitable lighting system, can create both a safe and decorative lighting solution for stairs.

Why use Step Lighting

Increase Public Safety



A stair fall often leads to serious injury and in the UK there is a fall on stairs every 90 seconds. An illuminated stair edging can help to reduce accidents on stairs by:

- Providing slip-resistance at the step edge.
- Providing a visual contrast to highlight the step edge in normal or low-light conditions.

Enhance Aesthetics



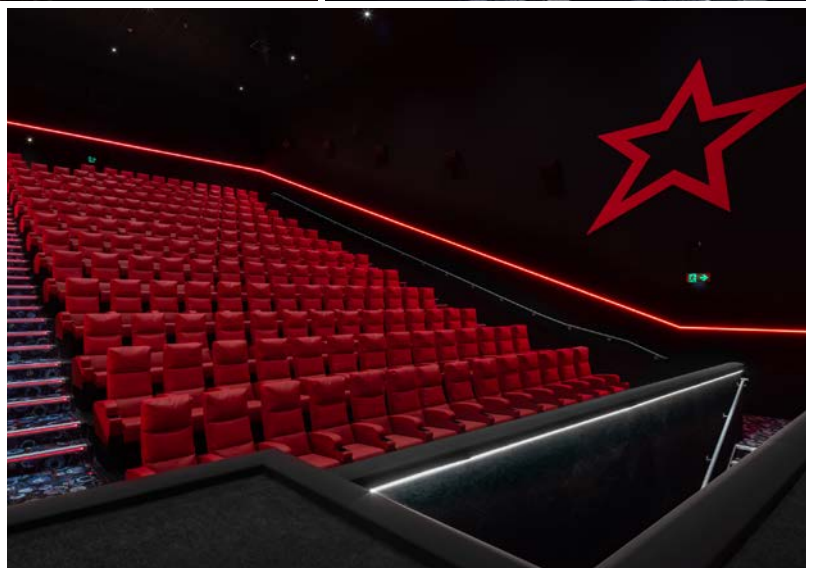
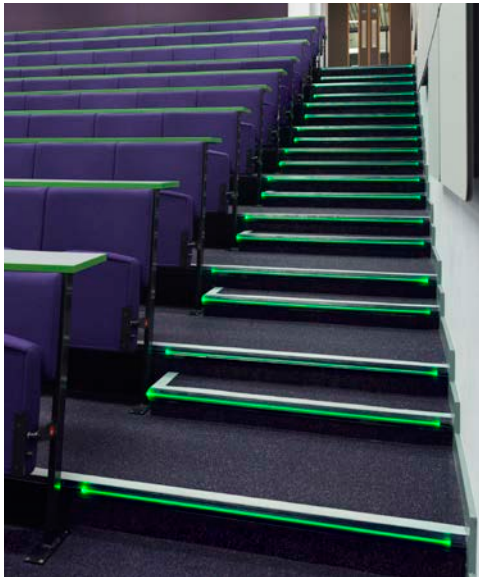
Our comprehensive range enables the design freedom and flexibility to create an overall solution that meets your specific project needs.

Reduce Maintenance Costs



Protects the step edge and surrounding floorcoverings, helping to reduce maintenance costs and extend the life of the buildings floorcoverings.

Looking for Inspiration?



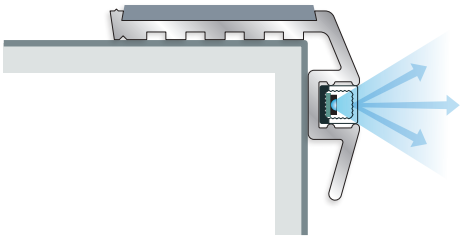
Choosing the Correct Step Lighting System

Step 1

Select the right profile

Intended purpose

Select the correct stair nosing for the shape of the step – this should be a tight fit to the step to ensure that the profile does not lift or rock during use. Gradus LED Step Profiles are suitable for square steps (see right).



Profile gauge

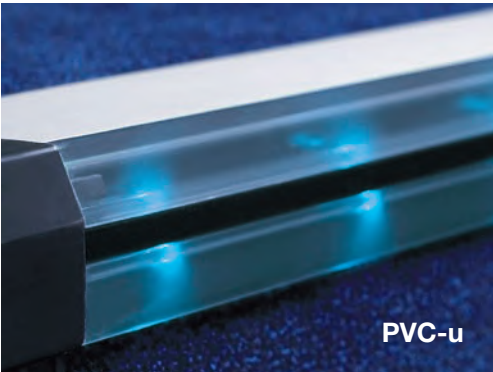
The gauge (thickness) of the Step Lighting Profile should be a flush finish to the floorcovering to avoid a trip hazard being created. When used with soft floorcoverings such as carpet and carpet tile, the gauge should achieve a flush finish with the compressed thickness of the floorcovering.

Gradus offers a range of gauges to suit the majority of commercial floorcoverings (see below).

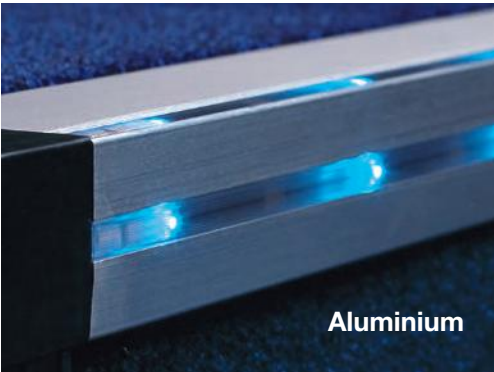
Gauge	Typically used with
Ramp back	No floorcoverings / Resilient floorcoverings – install profile on top of the floorcovering to ensure a safe fit
5mm - 6mm	Carpet / Carpet Tile
10mm - 12mm	Carpet / Stone / Marble

Type of profile

The type of profile selected can impact how the light is projected. Gradus offers a range of PVC-u and Aluminium Step Lighting Profiles designed to offer a wide range of lighting effects.



- Clear PVC-u design allows light to be projected through the profile.
- Illuminated stair edging is visible when ascending and descending the staircase.



- Light is projected directly from the tube or diffuser cover.
- The angle at which the illumination is visible depends on the profile design.

Step 2

Achieve the correct slip-resistance for the conditions

Specification Guidelines

BS 8300-2:2018, BS 5395-1:2010 and BS 9266:2013 refers to the slip-resistance of surface finishes on stairs. A pendulum test is used to assess slip-resistance and a Pendulum Test Value (PTV) of greater than 36 is required in both dry conditions and when the stairs are at risk of becoming wet through walked in moisture and spillages.

Slip-resistance & Performance



An insert provides a surface that creates friction between the sole of the shoe and the step edge, hence providing slip-resistance and reducing the risk of slips on stairs. All Gradus inserts are tested for slip-resistance – see page 47 for details.

Ensure the required level of slip-resistance is achieved to reduce the risk of slips and falls on stairs by **selecting the correct insert for the environment:**

- **Interior installations** – not always dry conditions. Consider whether there is a risk of the stair nosing becoming wet and select the correct insert accordingly.
- **Safety flooring** – select an insert that matches or improves the slip-resistant qualities of the flooring.

Insert Type	Conditions	Applications	Material
Xtra-grip	Interior Wet Interior Dry	Increased surface roughness where the stair edging may become wet e.g. stairs close to entrances or where safety flooring is used. Areas where health and safety are a priority e.g. schools and hospitals.	Pvc with mineral aggregate.
Xtra-grip Plus	Interior Wet Interior Dry	As Xtra-grip, with the addition of an enhanced insert bond system for areas subject to more frequent cleaning e.g. catering and food preparation areas.	Pvc with mineral aggregate.
Interior	Interior Dry	Areas where there is no risk that the stairs will be contaminated by moisture.	Pvc with mineral inclusion - standard or grained surface.

Step 3

Defining the step edge in normal and low-light conditions

For any project featuring LED Step Lighting, it is important to always achieve the correct **visual & tonal contrast** between the profile and surrounding floorcoverings in normal lighting conditions.

In addition to the above, when selecting an LED Step Profile the **lighting position & direction** will need to be considered, especially as this may be the only means for a building user to identify the step edge in dark or low-light conditions.

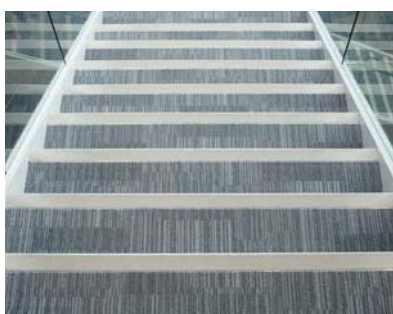
Visual & tonal contrast

Specification Guidelines

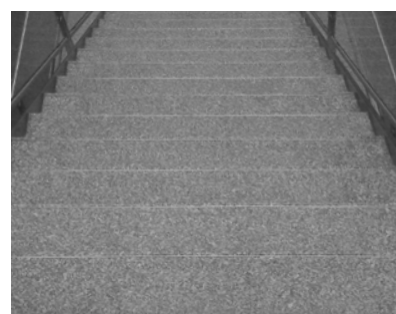
BS 8300-2:2018, BS 5395-1:2010, BS 9266:2013 & Approved Documents M (ADM) & K (ADK) of The Building Regulations 2010 highlight the need to ensure there is sufficient visual contrast at the step edge, providing a safe environment for all building users. Project Rainbow and ADM recommend that there is at least a 30 point difference between the LRVs of the stair nosing and floorcovering to achieve a suitable contrast.

Visual Contrast

All Gradus stair nosing channel and insert colours are measured for LRVs in accordance with BS 8493:2008+A1:2010 to help achieve this difference. Our RXT1218L PVC-u Step Lighting Profile can be selected with the riser and insert in the same colour to provide sufficient visual contrast with the floorcovering fitted to the tread and riser of the step (picture 1).



Good Visual Contrast
Installed with Gradus Stair Nosings
picture 1



Poor Visual Contrast
No Stair Nosings – Don't Take the Risk

Tonal Contrast

It is important to achieve a tonal contrast between the floorcovering and the stair nosing as people with visual impairments may not be able to see some or all colours but can perceive light and dark. Colour contrast (picture 1) visible to fully-sighted people may not always offer a tonal contrast (picture 2) for partially-sighted people.



Fully-sighted People
Tonal Contrast
picture 1



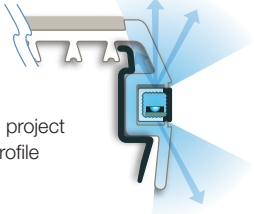
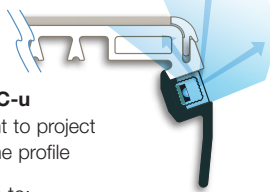
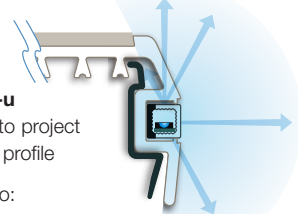
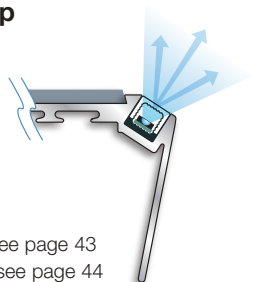
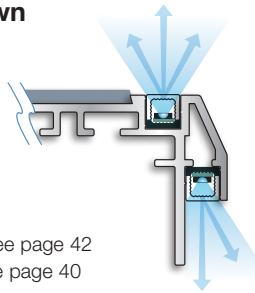
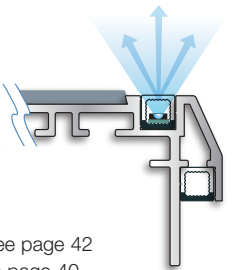
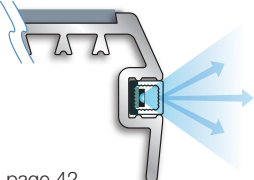
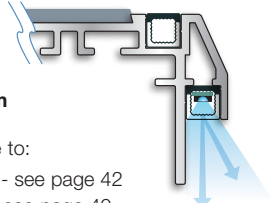
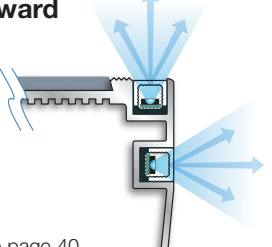
Partially-sighted People
Poor Tonal Contrast
picture 2

Lighting position and direction

Due to the nature of the environments that our LED Step Lighting is typically installed within, coupled with constantly evolving lighting technology, there are likely to be occasions when the ambient lighting is either dimmed or switched off. In all cases, it is important to follow the **visual & tonal contrast guidance** outlined on the previous page to achieve the recommended 30 point LRV difference. However, it should also be noted that less light will be reflected when ambient light levels are reduced.

For instances where dark or low-light conditions are to be expected, building users will find it difficult to see steps that are not illuminated, and would therefore benefit from the use of LED Step Lighting. Choosing an LED Step Profile that projects the light in an upwards direction will ensure that it highlights the step edge effectively to create a safe solution.

The diagrams featured below provide examples of the different lighting positions and directions available across our range of LED Step Profiles.

Pvc Profiles		
Up & Down  <p>Clear PVC-u allows light to project through the profile</p> <p>Applicable to: RNT1218L - see page 38 RNT718L - see page 38</p>	Up & Angled  <p>Clear PVC-u allows light to project through the profile</p> <p>Applicable to: RXT1218L - see page 37</p>	Up, Forward & Down  <p>Clear PVC-u allows light to project through the profile</p> <p>Applicable to: RNT1218L - see page 38 RNT718L - see page 38</p>
Aluminium Profiles		
Angled Up  <p>Aluminium</p> <p>Applicable to: ATNG71L - see page 43 ELAF5150 - see page 44 ELAF2350 - see page 44</p>	Up & Down  <p>Aluminium</p> <p>Applicable to: ATD121L - see page 42 ATD71L - see page 40</p>	Up  <p>Aluminium</p> <p>Applicable to: ATD121L - see page 42 ATF71L - see page 40 ATD71L - see page 40</p>
Forward  <p>Aluminium</p> <p>Applicable to: AT718L - see page 42 AS1106L - see page 43 ATF71L - see page 40</p>	Down  <p>Aluminium</p> <p>Applicable to: ATD121L - see page 42 ATD71L - see page 40</p>	Up & Forward  <p>Aluminium</p> <p>Applicable to: ATF71L - see page 40</p>

Step 4

Select an LED Lighting System and LED colour

Gradus offer a choice of 3 main lighting systems to combine with our Step Lighting Profiles, as follows.



NEW Gradus Impression

Features LED tapes to produce a continuous lighting effect for a modern finish ideal for use within medium to well-lit applications where there is added focus on the visual appearance and overall finished effect, in addition to safety.



RGB Colour Changing

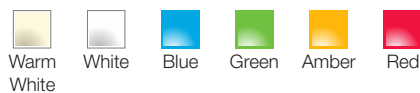


Dual-White CCT
(Create any shade of white within colour temperature range of 2700k-6000k)



Gradus Continuity™

A continuous linear lighting effect that clearly defines the step edge in low-light environments, created using a fibre optic rod that is end-illuminated with high intensity LEDs.



Gradus Interlok Advance™

Offers a pinpoint lighting effect that is created using circuit board strips with LEDs spaced at either 50mm or 100mm intervals.



Step 5

Combine with control equipment for increased flexibility

It is important to evaluate the level of functionality required to ensure that the overall package is tailored to suit your individual project needs.

Below are just some of the key considerations when selecting control equipment for your lighting solution.



What functionality is required?



Adjusting
LED brightness



Adjusting
LED colour

What type of remote control is preferred?



Hand held
remote control



Wall mounted
remote control

How many areas are you looking to control from a single remote?



Single zone

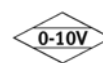


Multi-zone

Compatibility with communication protocols required?



Triac



Note: More options available upon request

Once you've identified your preferences, book an appointment with one of our specification consultants

This enables us to fully understand your requirements to help us put together a lighting package that is right for your project.

To book an appointment call 01625 428922

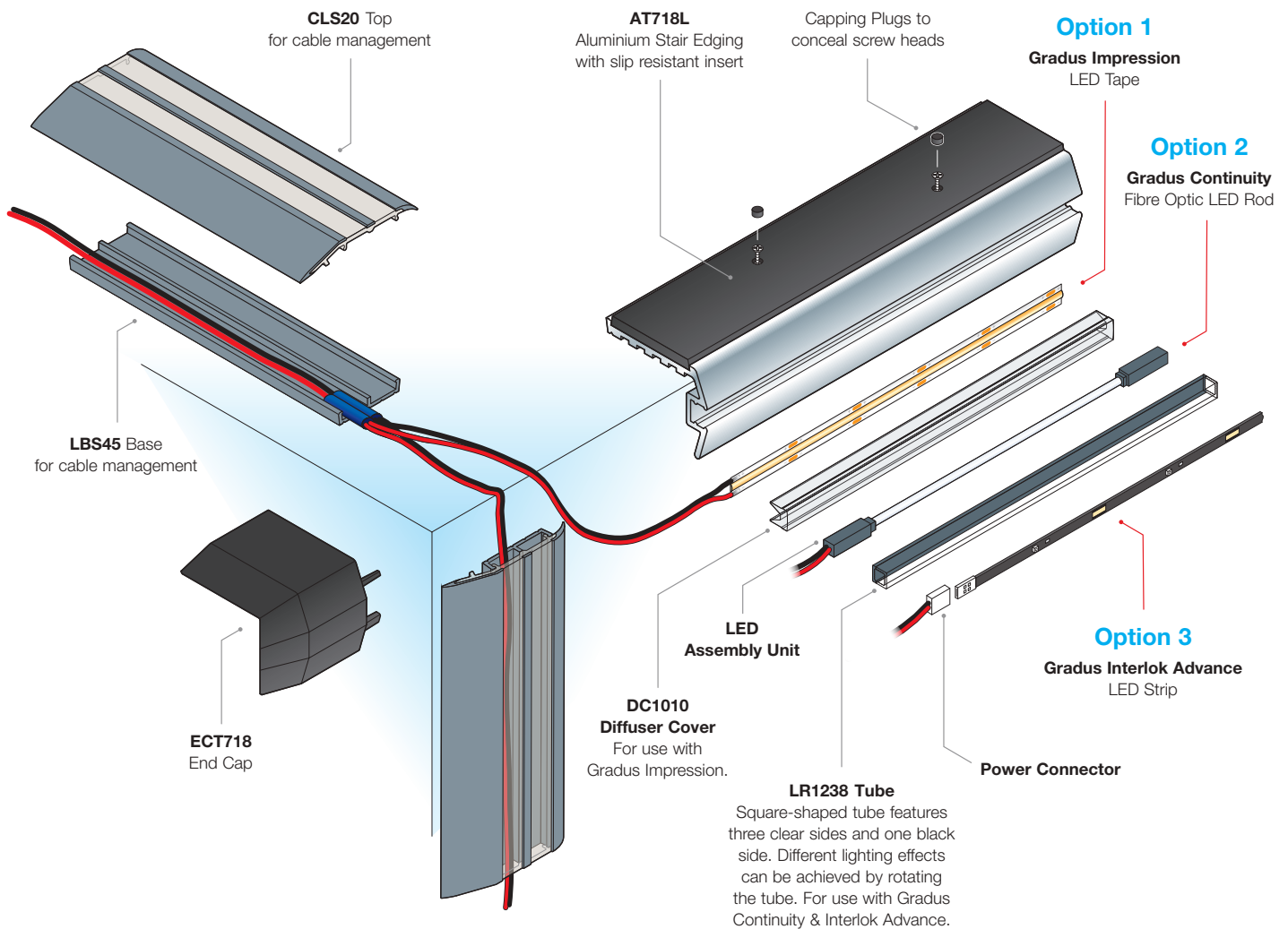
Gradus also supplies wiring, power supplies and connections as well as offering a **supply and fit service** for extra peace of mind.

For more details about our supply and fit service – see page 67

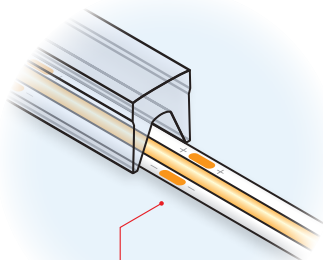




Illustration of a Step Lighting System



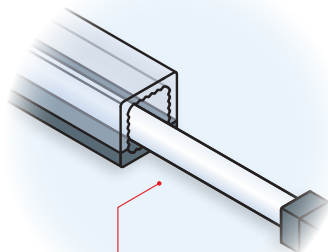
NEW Gradus Impression



Option 1

Gradus Impression
LED Tape combined with
DC1010 Diffuser Cover

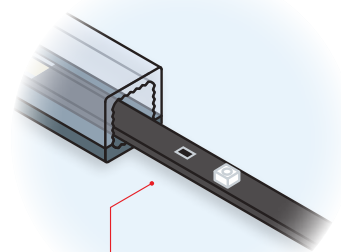
Gradus Continuity™



Option 2

Gradus Continuity
fibre optic rod housed
within LR1238 Tube

Gradus Interlok Advance™



Option 3

Gradus Interlok Advance
circuit board strips inserted
into LR1238 Tube

Step Lighting Profiles – Product Selection Guide

PROFILE	PAGE	PVC-u PROFILES	ALUMINIUM PROFILES	LENGTH	STANDARD FINISH	SUPPLIED PRE-ASSEMBLED	OTHER FINISHES AVAILABLE	
							ANODISED	
RXT1218L	37	✓		2.44m, 2.75m & 3.20m	Clear PVC-u channel with Black, Glacier or Snowdrift riser options			
RNT718L	38	✓		2.44m, 2.75m & 3.20m	Clear PVC-u channel & riser			
RNT1218L	38	✓		2.44m, 2.75m & 3.20m	Clear PVC-u channel & riser			
ATF71L	40		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised*	
ATD71L	40		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised*	
ATD121L	42		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised	
AT718L	42		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised*	
ATNG71L	43		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised*	
AS1106L	43		✓	2.44m, 2.75m & 3.20m	Mill finish		Black or Gold anodised*	
ELAF2350	44		✓	2.44m, 2.75m & 3.20m	Black Powder Coated	✓		
ELAF5150	44		✓	2.44m, 2.75m & 3.20m	Black Anodised*	✓		

Notes:

¹ - Depending on the thickness of the resilient flooring, BU800 bevelled underlay may be an ideal installation solution.

² - Gradus Impression RGBW Colour Changing option not suitable for use in LED Step Profiles.

³ - Gradus Continuity suitable for use in up light only.

* - Anodised finish not available for fabrications.

	SUITABLE FLOORCOVERINGS					COMPATIBLE LED LIGHTING SYSTEMS		
	PROFILE GAUGE	CARPET	RESILIENT FLOORING	CERAMIC TILE	WOOD	GRADUS IMPRESSION	GRADUS CONTINUITY	GRADUS INTERLOK ADVANCE (50mm or 100mm spacing)
	12mm	✓			✓		✓	✓
	7mm	✓	✓ ¹		✓		✓	✓
	12mm	✓			✓		✓	✓
	6mm	✓	✓ ¹		✓	✓ ²	✓	✓
	6mm	✓	✓ ¹		✓	✓ ²	✓ ³	✓
	12mm	✓		✓	✓	✓ ²	✓ ³	✓
	8mm	✓	✓ ¹		✓	✓ ²	✓	✓
	8mm	✓	✓ ¹		✓	✓ ²	✓	✓
	Ramp back		✓			✓ ²	✓	✓
	6.5mm	✓	✓ ¹		✓	✓ ²	✓	✓
	5mm	✓	✓ ¹		✓	✓ ²	✓	✓

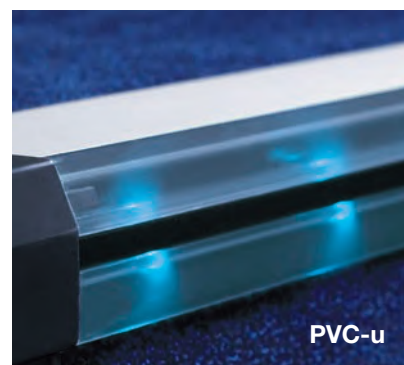
Step Lighting Profiles



Gradus offers a range of hard-wearing Aluminium and PVC-u stair edging profiles with a choice of slip resistant inserts.

PVC-u

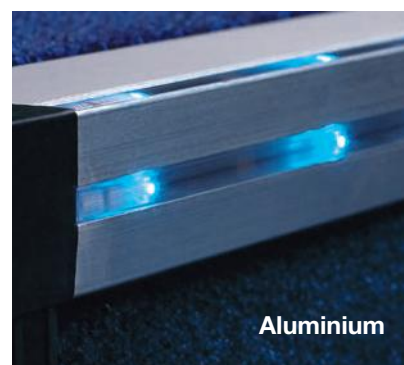
- Clear PVC-u channels allow light to project through the profile, ensuring the step edge is clearly visible when both ascending or descending the staircase.
- 2 gauges (7mm & 12mm) to accommodate different floorcoverings.
- Suitable for use with Gradus Continuity or Interlok Advance lighting systems.
- The position of the square tube housing the lighting system can be rotated to adjust the direction of light.



Aluminium

- Available in a variety of gauges to suit a wide range of floorcoverings.
- Suitable for use with Gradus Impression, Continuity or Interlok Advance lighting systems.
- Profiles offer either single or double lighting options that can be used to create a range of lighting effects and directions.

End caps are available for all profiles for neat finishing and to conceal cables.



PVC-u Profiles

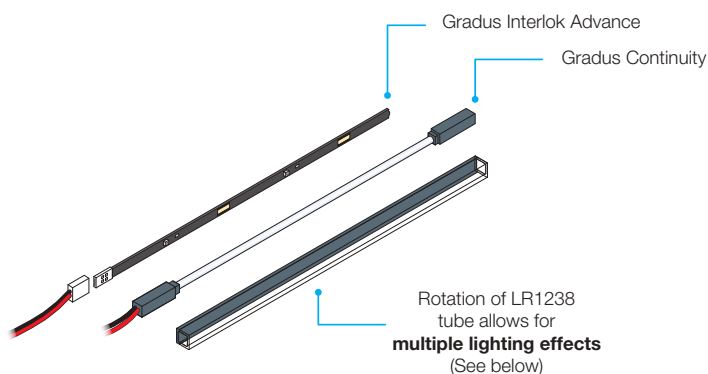
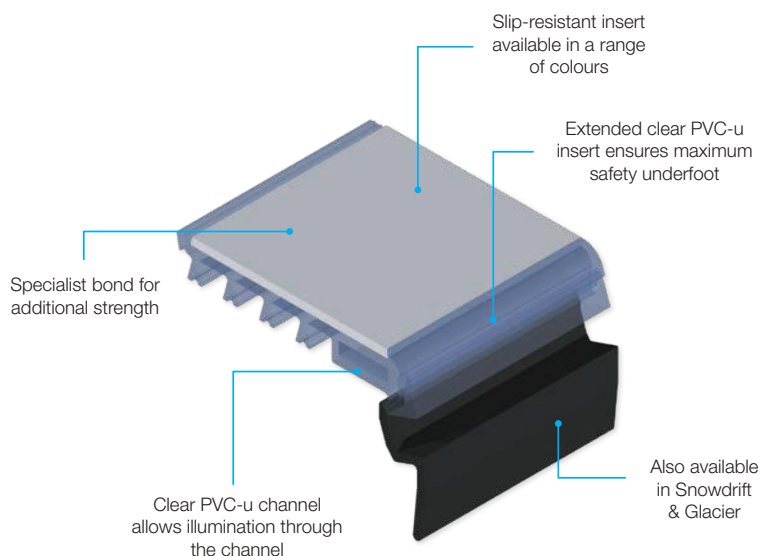
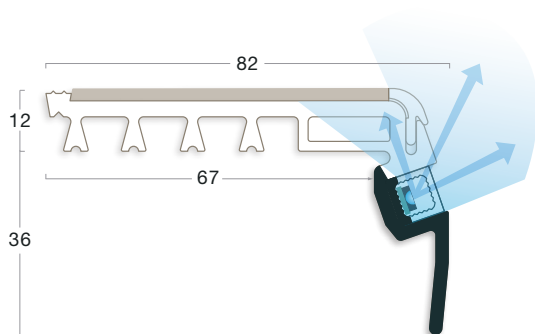
RXT1218L

Offers **the ultimate solution** to help reduce the risk of slips, trips and falls on stairs in most applications.

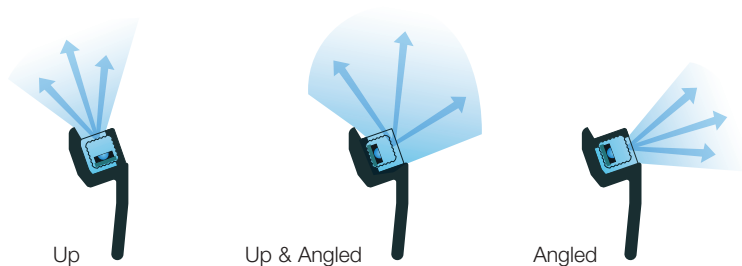
This profile also gives the option of **multiple lighting effects**, simply by rotating the position of the LR1238 tube.

Description:

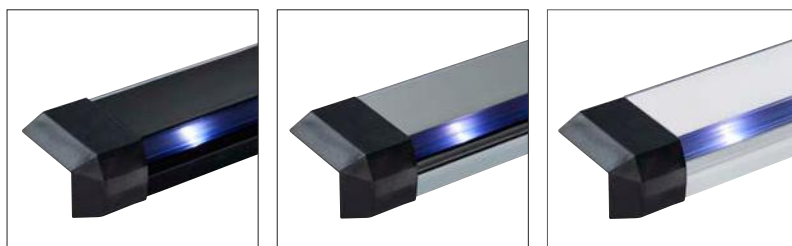
- Clear PVC-u Channel & Black riser
- Up & angled illumination
- For use with wood & carpet



Multiple lighting effects



Riser colour options



RXT1218L with Black riser

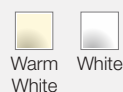
RXT1218L with Glacier (grey) riser

RXT1218L with Snowdrift (white) riser

LED Lighting Systems Availability

Gradus Continuity™

(For more detail see page 20)



Gradus Interlok Advance™

(For more detail see page 21)



Insert Options

For insert selection see pages 46-47.

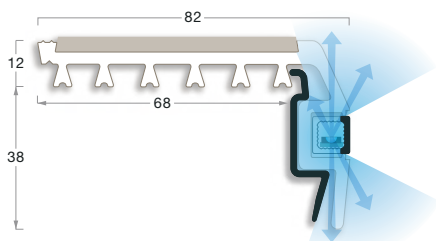
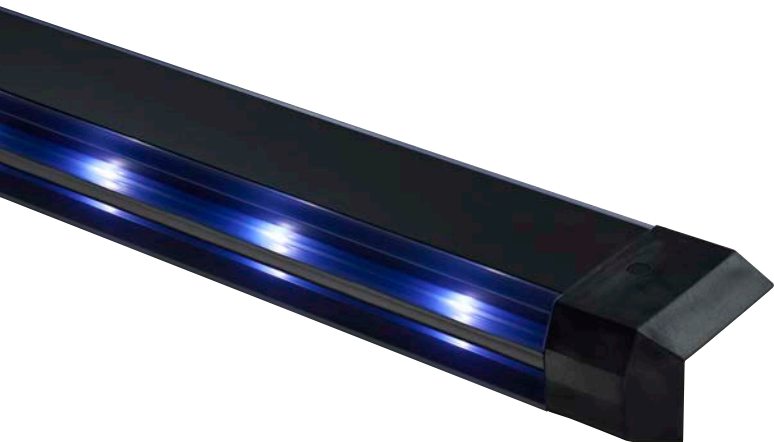
- Interior Standard Finish


PVC-u Profiles

RNT1218L

Description

- Clear PVC-u channel & riser
- Illumination on front provides all round visibility
- 12mm gauge ideal for use with carpet & wood

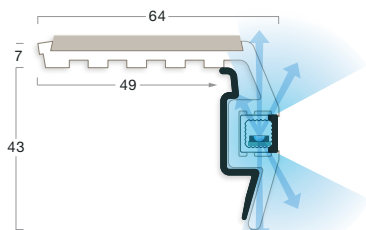



 Profile can be curved subject to approval of template

RNT718L

Description

- Clear PVC-u channel & riser
- Illumination on front provides all round visibility
- 7mm gauge ideal for use with wood, carpet & resilient flooring



 Profile can be curved subject to approval of template

LED Lighting Systems Availability

Gradus Continuity™

(For more detail see page 20)



Gradus Interlok Advance™

(For more detail see page 21)



Insert Options

- Xtra-grip
- Xtra-grip Plus
- Interior Standard Finish
- Interior Grained Finish

For insert selection see pages 46-47.

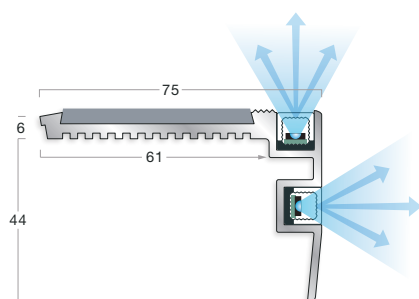



Aluminium Profiles

ATF71L

Description

- Aluminium channel (also available in Black or Gold anodised)
- Illumination on tread and/or riser
- 6mm gauge ideal for use with wood, carpet & resilient flooring

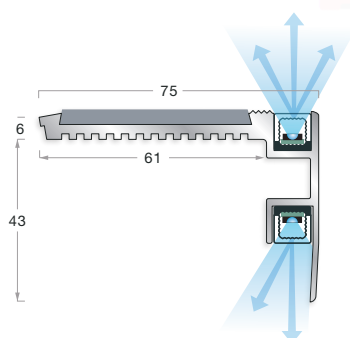



 Profile can be curved subject to approval of template

ATD71L

Description

- Aluminium channel (also available in Black or Gold anodised)
- Illumination on tread and/or riser
- 6mm gauge ideal for use with wood, carpet & resilient flooring

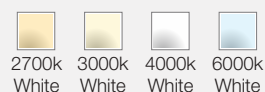


 Profile can be curved subject to approval of template

LED Lighting Systems Availability

Gradus Impression

(For more detail see pages 18-19)

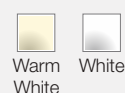


Dual-White CCT

(Create any shade of white within colour temperature range of 2700k-6000k)

Gradus Continuity™

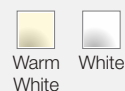
(For more detail see page 20)



Note: Gradus Continuity is not suitable for use in ATD71L downlight.

Gradus Interlok Advance™

(For more detail see page 21)



Insert Options

- Xtra-grip
- Xtra-grip Plus
- Interior Standard Finish
- Interior Grained Finish

For insert selection see pages 46-47.

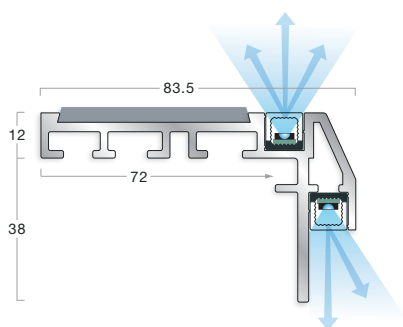


Aluminium Profiles

ATD121L

Description

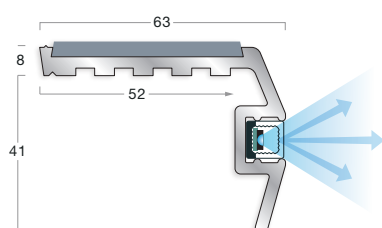
- Aluminium channel (also available in Black or Gold anodised)
- Illumination on tread and/or riser
- 12mm gauge ideal for use with wood, carpet & ceramic tile




AT718L

Description

- Aluminium channel (also available in Black or Gold anodised)
- Step front illumination
- 8mm gauge ideal for use with wood, carpet & resilient flooring



 Profile can be curved subject to approval of template

Products subject to minor design alterations without notice.

LED Lighting Systems Availability

Gradus Impression

(For more detail see pages 18-19)



 Dual-White CCT
(Create any shade of white within colour temperature range of 2700k-6000k)

Gradus Continuity™

(For more detail see page 20)



Note: Gradus Continuity is not suitable for use in ATD121L downlight.

Gradus Interlok Advance™

(For more detail see page 21)



Insert Options

- Xtra-grip
- Xtra-grip Plus
- Interior Standard Finish
- Interior Grained Finish

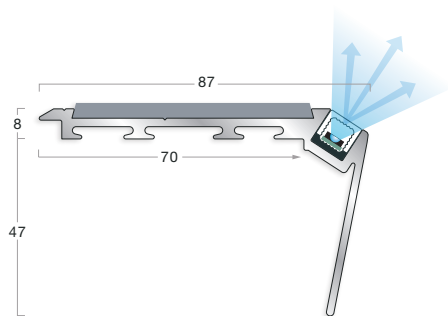
For insert selection see pages 46-47.


Aluminium Profiles

ATNG71L

Description

- Aluminium channel (also available in Black or Gold anodised)
- Angled illumination
- 8mm gauge ideal for use with wood, carpet & resilient flooring

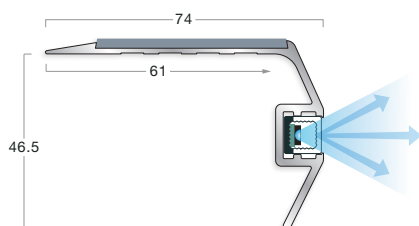
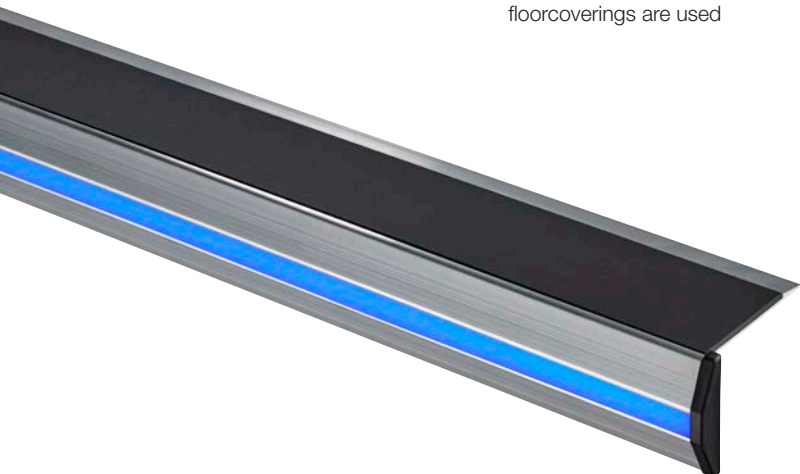



 Profile can be curved subject to approval of template

AS1106L

Description

- Aluminium channel (also available in Black or Gold anodised)
- Step front illumination
- Ramp back profile for use with resilient flooring or where no surface floorcoverings are used

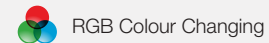



 Profile can be curved subject to approval of template

LED Lighting Systems Availability

Gradus Impression

(For more detail see pages 18-19)



 Dual-White CCT
(Create any shade of white within colour temperature range of 2700k-6000k)

Gradus Continuity™

(For more detail see page 20)



Gradus Interlok Advance™

(For more detail see page 21)



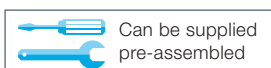
Insert Options

- Xtra-grip
- Xtra-grip Plus
- Interior Standard Finish
- Interior Grained Finish

For insert selection see pages 46-47.

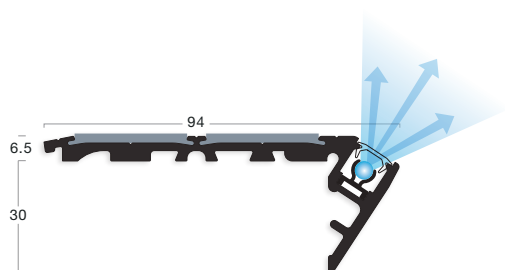
Aluminium Profiles

ELAF2350

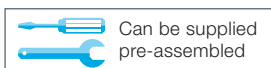


Description

- Black powder coated aluminium channel
- Angled illumination
- 6.5mm gauge ideal for use with wood, carpet & resilient flooring

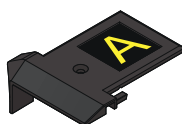
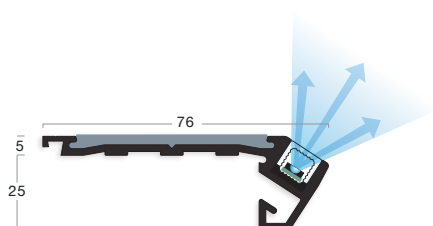


ELAF5150



Description

- Black anodised aluminium channel
- Angled illumination
- 5mm gauge ideal for use with wood, thin gauge carpet & resilient flooring
- Can be supplied pre-assembled for ease of installation

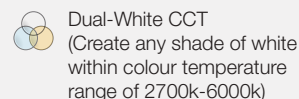
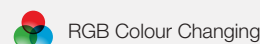


End caps can also be selected to incorporate a step row indicator

LED Lighting Systems Availability

Gradus Impression

(For more detail see pages 18-19)



Gradus Continuity™

(For more detail see page 20)



Gradus Interlok Advance™

(For more detail see page 21)



Insert Options

(Sold separately for ELAF2350 & ELAF5150 profiles)

Xtra-grip:

- ELINSXG30 - for ELAF2350
- ELINSXG50 - for ELAF5150

Interior Standard:

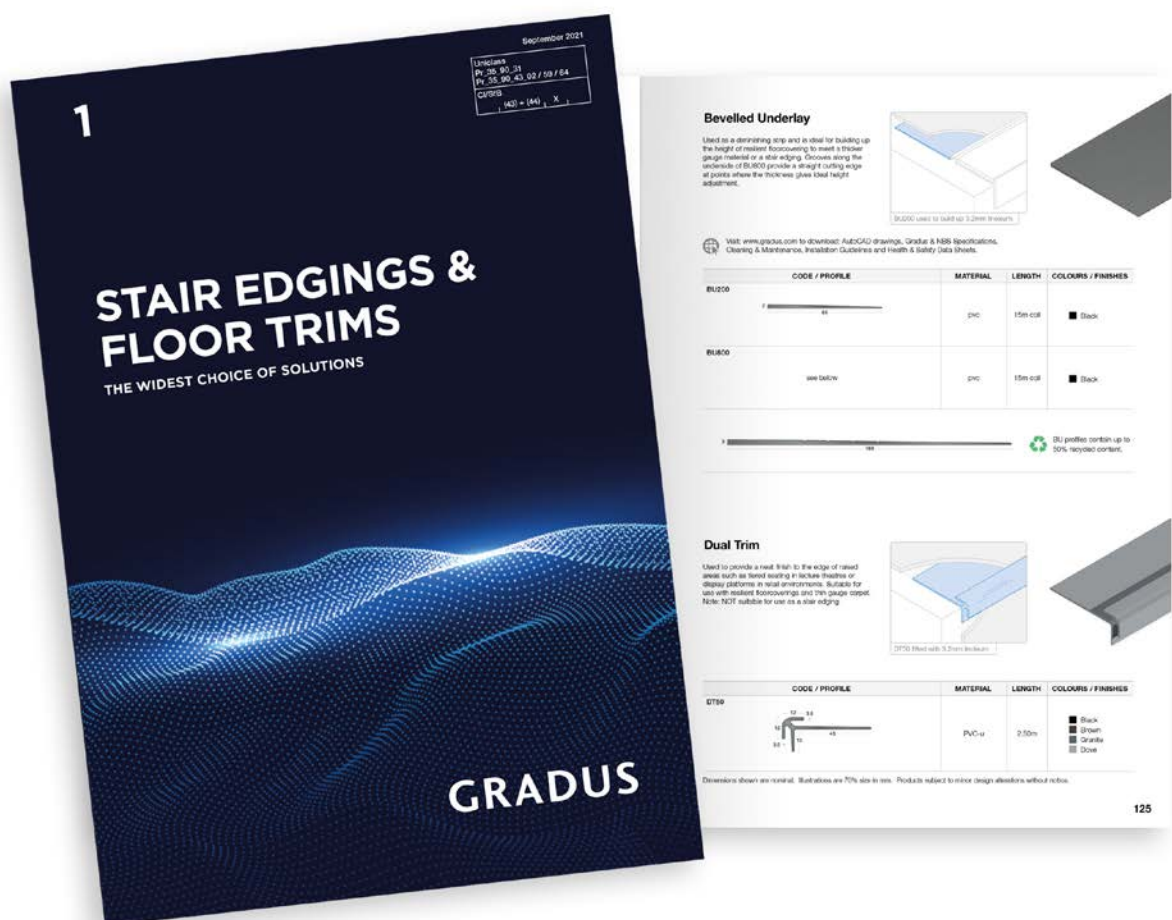
- ELINS30 - for ELAF2350
- ELINS50 - for ELAF5150

For insert selection see pages 46-47.

Looking for flooring accessories to complete your installation?

- Gradus is the market leader in contract flooring accessories and offers the widest choice in product solutions for stairs and floors, available through our network of distributors.
- Our Stair Edgings & Floor Trims catalogue includes all the accessories you need to help achieve a safe and neat installation.

















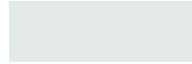




Request a copy by contacting Gradus Technical Support on 01625 428922 or download from www.gradus.com






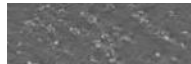







Gradus LED Lighting can also be combined with a full range of contract interior solutions to provide a complete package. Refer to pages 8 - 11 for further details.

Insert Colours

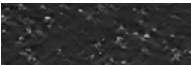










Interior Standard Finish

Jet* LRV: 4.56 NCS: 8502-B 	Ink LRV: 4.96 NCS: 8010-R70B 	Burgundy LRV: 5.70 NCS: 6030-R10B 	Coffee* LRV: 6.05 NCS: 8010-Y50R 	Midnight LRV: 6.56 NCS: 6030-R80B 	Evergreen LRV: 6.69 NCS: 7020-B70G 
Ocean LRV: 8.00 NCS: 6020-R90B 	Poppy LRV: 10.39 NCS: 2070-R 	Lead* LRV: 12.77 NCS: 7005-R50B 	Steel* LRV: 26.99 NCS: 4500-N 	Cloud LRV: 28.57 NCS: 4010-R70B 	Linen LRV: 38.59 NCS: 3010-Y30R 
Glacier LRV: 42.09 NCS: 2502-B 	Clay† LRV: 47.97 NCS: S2502-Y 	Sky† LRV: 52.63 NCS: S1515-R90B 	Canvas LRV: 53.27 NCS: 2005-Y30R 	Jade† LRV: 53.98 NCS: S2005-G 	Buttercup LRV: 55.54 NCS: 1070-Y 
Photoluminescent** LRV: 57.59 - lit conditions 	Wisp† LRV: 58.17 NCS: S2000-N 	Snowdrift* LRV: 83.77 NCS: 0500-N 	†RXT1218L profile only *ELINS30 colour availability **Photoluminescent insert not available for ELAF2350 or ELAF5150 profiles		





Xtra-grip™

Onyx* LRV: 4.52 NCS: 8502-B 	Neptune LRV: 5.03 NCS: 8010-R70B 	Umber LRV: 5.71 NCS: 8005-Y50R 	Graphite* LRV: 12.56 NCS: 6502-B 	Quarry* LRV: 24.71 NCS: 4500-N 	Concrete LRV: 37.44 NCS: 2502-B 
Ochre* LRV: 49.97 NCS: 1060-Y 	Surf LRV: 43.58 NCS: 1515-R90B 	Pumice LRV: 46.83 NCS: 2005-Y30R 	Bamboo LRV: 45.84 NCS: 2005-B80G 	Frost LRV: 66.51 NCS: 1002-G50Y 	*ELINSXG30 & ELINSXG50 colour availability

Xtra-grip Plus™

Asphalt LRV: 4.52 NCS: 8502-B 	Shark LRV: 5.03 NCS: 8010-R70B 	Bark LRV: 5.71 NCS: 8005-Y50R 	Mercury LRV: 12.56 NCS: 6502-B 	Smoke LRV: 24.71 NCS: 4500-N 	Dusk LRV: 37.44 NCS: 2502-B 
Citrine LRV: 49.97 NCS: 1060-Y 	Air LRV: 43.58 NCS: 1515-R90B 	Sandstone LRV: 46.83 NCS: 2005-Y30R 	Prairie LRV: 45.84 NCS: 2005-B80G 	Calcite LRV: 66.51 NCS: 1002-G50Y 	

Interior Grained Finish

Black LRV: 6.47 NCS: 7502-B 	Brown LRV: 12.13 NCS: 6010-Y70R 	Granite LRV: 13.44 NCS: 6502-R 	Dove LRV: 23.40 NCS: 5000-N 
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NCS Colour References

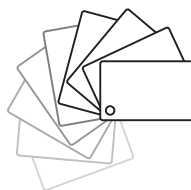


Gradus is a member of NCS (Natural Colour System) and utilises the NCS reference codes shown above each colour. For further information visit www.ncscolour.co.uk

©Property of and used under licence from the Scandinavian Colour Institute AB, SCI-Sweden se, Stockholm 2004.
 See www.ncscolour.co.uk for NCS-standard samples.

Light Reflectance Value (LRV)

All colours have been measured for light reflectance/visual contrast (LRV using CIE Y value). For details on LRV's visit www.gradus.com or call technical support on 01625 428922



For samples

For enquiries in the UK & Eire
Tel: 01625 428922
 For enquiries outside the UK & Eire
 contact Gradus International
Tel: +44 (0)1625 613780
Visit: www.gradus.com

Please note: Due to the limitations of the printing process, colours within this leaflet should not be relied upon for colour matching. An accurate colour match can only be achieved by requesting the relevant product sample(s).

Types of Slip-Resistant Insert

Gradus Inserts:

- Provide slip-resistance at the step edge to reduce the risk of slips, trips and falls on stairs
- Are designed and tested to ensure optimum performance throughout the life of the product
- Are measured for Light Reflectance Values (LRVs) to provide a visual contrast to ensure the step edge is clearly visible

Pendulum Test Value (PTV)	Slip Potential
0 - 24	High Slip Potential
25 - 35	Moderate Slip Potential
36+	Low Slip Potential

BS 8300-2:2018 - a PTV of at least 36 is required irrespective of wet or dry conditions

Wear Classification* - Xtra-grip, Xtra-grip Plus and Interior inserts achieve wear classifications of:

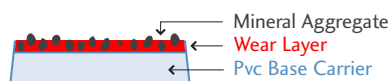
Group T – Class 34 – Commercial Very Heavy

Group T – Class 43 – Light Industrial Heavy

* Interior (standard & grained) tested to BS EN 660-2:1999 and assessed against the requirements of BS EN 649:1997.

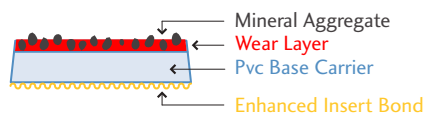
Xtra-grip and Xtra-grip Plus tested to BS EN 13845:2005 – 50,000 cycles.

Xtra-grip™



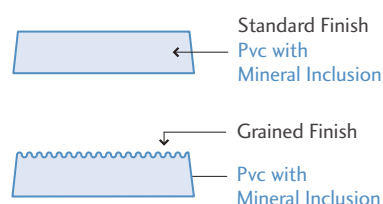
- Suitable for interior steps that may become wet
- Pvc insert incorporating a slip-resistant aggregate
- Low slip risk in both wet & dry conditions
- PTV rating of >36 in wet and dry conditions

Xtra-grip Plus™



- As Xtra-grip, with the addition of an enhanced insert bond system for areas subject to more frequent cleaning e.g. catering and food preparation areas
- PTV rating of >36 in wet and dry conditions

Interior (Standard or Grained Finish)



- Suitable for interior dry conditions where there is no risk that the stairs will be contaminated by moisture
- Pvc material with slip-resistant properties
- PTV rating of >36 in wet and dry conditions



LED Architectural Lighting

Centred around providing clients with the ability to transform an environment with subtle accents or striking features, this range is geared towards those looking for a decorative LED Lighting solution that is sure to create a real “wow” factor.

Why use Architectural Lighting

Visually enhances a space



- Easily incorporated into design schemes.
- Highlights focal points, creates a subtle glow or can be used for directional purposes such as walkways or navigation routes.
- Provides the ability to change or affect the mood within a space.

Creates a practical overall solution



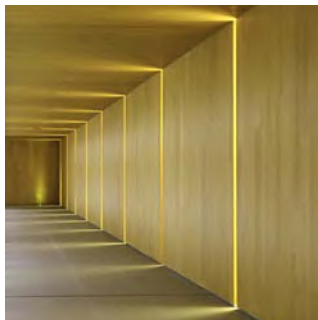
- Profiles help to dissipate heat, extending the Gradus Impression LED tape's life to ensure optimum performance is achieved.
- Protects the LED tape against dirt and damage.
- Enables easier cleaning.
- Provides a more secure solution, as opposed to sticking an LED tape directly to a surface.

Offers increased functionality



- Gradus Impression LED tapes are available in several formats including whites, single colours, RGB or Dual-White CCT.
- Comprehensive selection of control equipment with the ability to manage multiple areas and zones from a single controller.
- Gradus Impression LED tapes support a variety of popular communication protocols.

A Mood for Every Environment



Architectural Lighting Profiles – Product Selection Guide

PROFILE	PAGE	LENGTH			COVER / LENS		MOUNTING TYPE			
		1m	2m	3.10m	SEMI-DIFFUSED	CLEAR	SURFACE	RECESSED	PLASTER-IN	
ALS/TS - Thin Surface	55	✓	✓		✓		✓			
ALS/DS - Deep Surface	55	✓	✓		✓		✓			
ALS/OL - Optic Lens	55	✓	✓			✓	✓			
ALS/B - Bendable	55	✓	✓		✓		✓			
ALS/FC - Corner	56	✓	✓		✓		✓			
ALS/FB - Flat Base	56	✓					✓			
ALS/SR - Shallow Recessed	56	✓	✓		✓			✓		
ALS/DR - Deep Recessed	56	✓	✓		✓			✓		
ALS/WO - Walk Over	57	✓	✓		✓			✓		
ALS/FR - Flush Recessed (Plaster-In)	57		✓		✓				✓	
DLA45 - U-section	57			✓	✓		✓	✓		

	ACCESSORIES INCLUDED		TYPICAL APPLICATIONS			COMPATIBLE LED LIGHTING SYSTEMS		
	END CAPS SUPPLIED	FIXING CLIPS SUPPLIED	FLOOR	WALL / CEILING VISIBLE FACE	WITHIN COVE / HIDDEN FACE	GRADUS IMPRESSION	GRADUS CONTINUITY	GRADUS INTERLOK ADVANCE
	✓	✓		✓	✓	✓		
	✓	✓		✓	✓	✓		
	✓	✓			✓	✓		
	✓	✓		✓	✓	✓		
	✓	✓		✓	✓	✓		
					✓	✓		
	✓			✓		✓		
	✓			✓		✓		
	✓		✓	✓		✓		
	✓			✓		✓		
		✓	✓	✓		✓	✓	✓

NEW Architectural Lighting Profiles



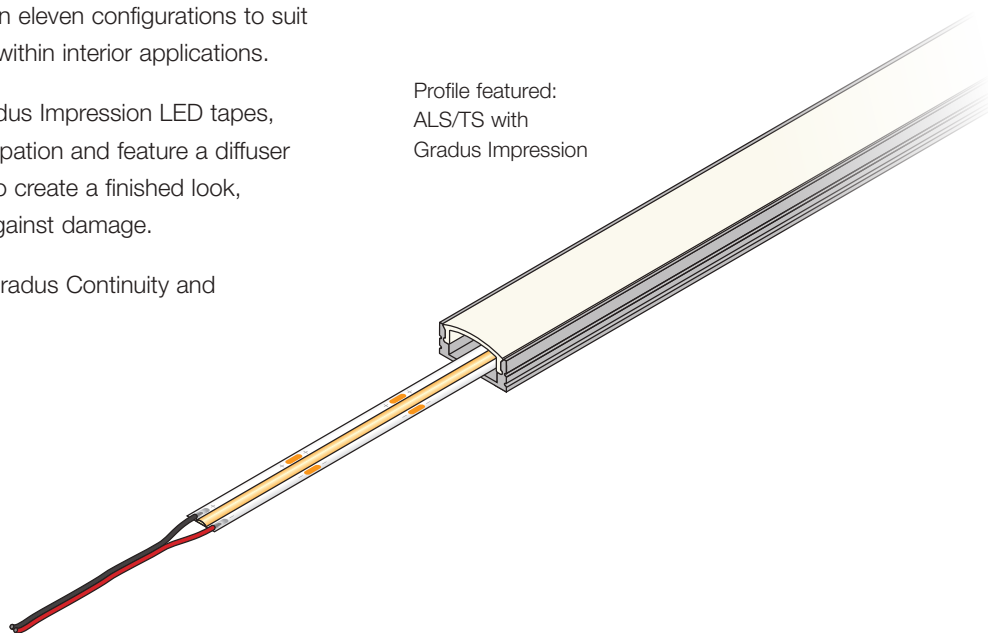
Comprising of surface mounted, recessed and plaster-in formats, Gradus Architectural Lighting Profiles are available in eleven configurations to suit the most common scenarios encountered within interior applications.

Designed for use with our full range of Gradus Impression LED tapes, the aluminium profiles assist with heat dissipation and feature a diffuser cover* that hides the LED tape from view to create a finished look, whilst also reducing glare and protecting against damage.

DLA45 aluminium profile also available in Gradus Continuity and Interlok Advance lighting systems.

Typical Example

Profile featured:
ALS/TS with
Gradus Impression



*Flat Base profile supplied with base only.

NEW Aluminium Profiles

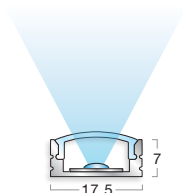
ALS/TS

Thin Surface



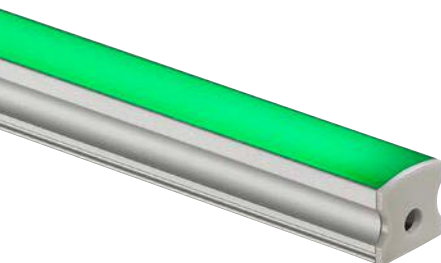
Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For surface mounting to walls, ceilings, units, cabinets etc. in discreet locations
- Supplied with end caps and fixing clips



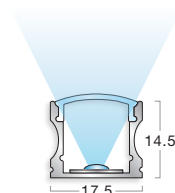
ALS/DS

Deep Surface



Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For surface mounting to walls and ceilings in highly visible locations
- Supplied with end caps and fixing clips



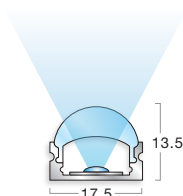
ALS/OL

Optic Lens



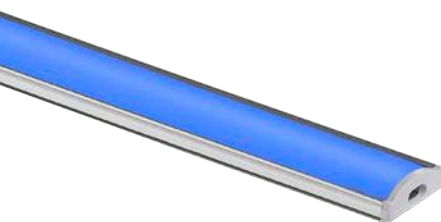
Description

- Aluminium base with Polycarbonate cover (clear)
- For surface mounting to create a wall wash lighting effect
- Supplied with end caps and fixing clips



ALS/B

Bendable

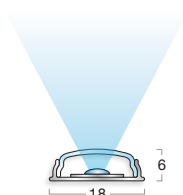


Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For surface mounting to walls, ceilings or within coves
- Supplied with end caps and fixing clips



300mm minimum bend radius



LED Lighting Systems
Availability

Gradus Impression

(For more detail see pages 18-19)



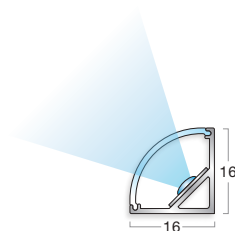
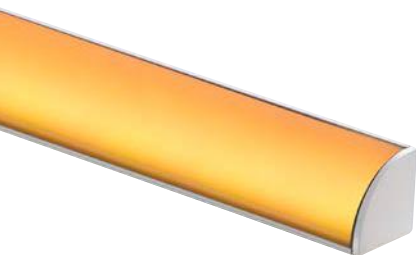
NEW Aluminium Profiles

ALS/FC

Corner

Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For surface mounting to 90° angle corners on walls and ceilings
- Supplied with end caps and fixing clips

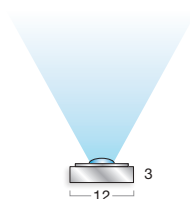


ALS/FB

Flat Base

Description

- Aluminium base
- For surface mounting to locations that are not visible

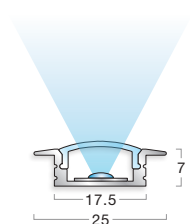
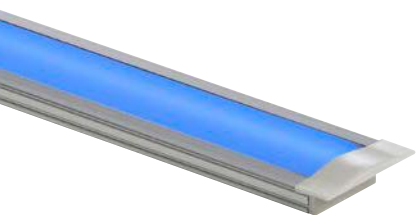


ALS/SR

Shallow Recessed

Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For shallow recesses within walls, ceilings, units, furniture etc.
- Supplied with end caps

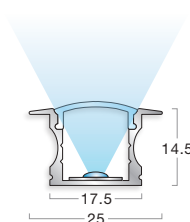


ALS/DR

Deep Recessed

Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For deeper recesses within walls, ceilings, units, furniture etc.
- Supplied with end caps



LED Lighting Systems
Availability

Gradus Impression

(For more detail see pages 18-19)



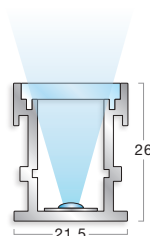
NEW Aluminium Profiles

ALS/WO

Walk Over

Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For use in floor recesses
- Supplied with end caps

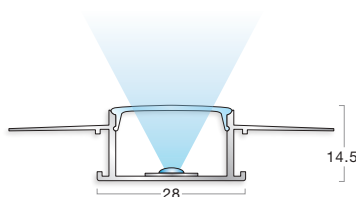
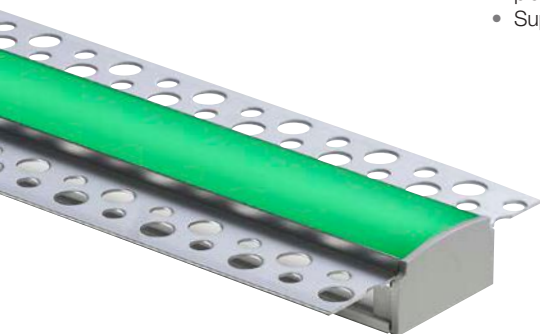


ALS/FR

Flush Recessed
(Plaster-In)

Description

- Aluminium base with Polycarbonate cover (semi-diffused)
- For projects where the profile is to be plastered into a wall or other surface
- Supplied with end caps

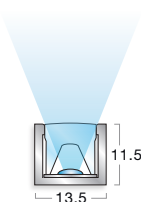


DLA45

U-section

Description

- Aluminium U-section (also available in Black anodised) with PVC-u cover (semi-diffused)
- Can be surface mounted or recessed into floors and walls
- Fixing clips supplied



LED Lighting Systems
Availability

Gradus Impression

(For more detail see pages 18-19)



DLA45 available in Gradus Impression (see above) and the following LED Lighting Systems

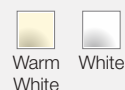
Gradus Continuity™

(For more detail see page 20)



Gradus Interlok Advance™

(For more detail see page 21)





Aisle & Floor Lighting Profiles – Product Selection Guide

PROFILE	PAGE	INTENDED USE		WINDOW STYLE (TOPS)		LENGTH	
		PVC-u FLOOR TRIM	CABLE MANAGEMENT SYSTEM	CLEAR TRANSLUCENT	SMOKED	2.50m	
CL05/LB10	61	✓		✓	✓	✓	
CLS13/LBS45	61	✓	✓	✓	✓	✓	
CLC13/TDB45	61	✓	✓	✓	✓	✓	
CLS16/LBS45	61	✓	✓	✓	✓	✓	
CLC16/TDB45	62	✓	✓	✓	✓	✓	
CLS20/LBS45	62	✓	✓	✓	✓	✓	
CLC20/TDB45	62	✓	✓	✓	✓	✓	
CLC11/TB45D	62	✓	✓	✓	✓	✓	

LED Lighting Solutions for Auditoria

A series of solutions ideal for use within low-light cinema, theatre and leisure environments to visually enhance the aesthetics, provide guidance to the public, whilst also helping to create a safer environment for building users.

	TYPICAL APPLICATION			COMPATIBLE LED LIGHTING SYSTEMS		
	CARPET TO CARPET	CARPET TO WALL	VINYL TO CARPET	GRADUS INTERLOK ADVANCE	GRADUS LOOM	GRADUS CONTINUITY
	✓			✓	✓	
	✓			✓	✓	
	✓			✓	✓	
		✓		✓	✓	
		✓		✓	✓	
			✓	✓	✓	
			✓	✓	✓	
			✓	✓	✓	✓

Aisle & Floor Lighting Profiles



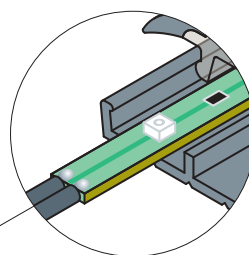
Gradus offers a comprehensive range of PVC-u aisle and floor trims that are designed for internal use as cable management systems to work with illuminated stair edging profiles or to illuminate floors, walkways, aisles and exit/entrance routes.

Profiles can feature Gradus Interlok Advance, Continuity or Loom LED Lighting Systems. See pages 20 & 21 for details of Gradus Continuity and Interlok Advance.

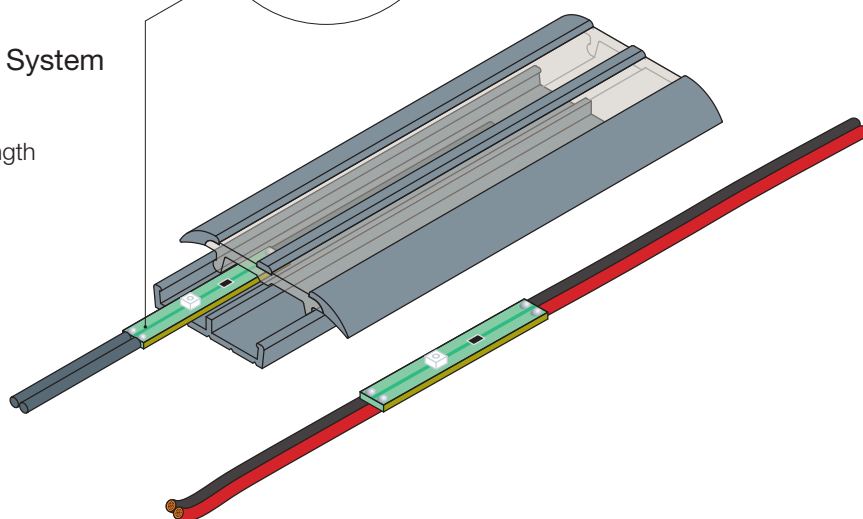
Gradus Loom - 12v DC LED Lighting System

- LEDs are spaced at 300mm intervals
- Easy to install and can be cut to required length
- Can be supplied in 1 to 50 metre coils
- LED lifetime of up to 50,000 hours
- Power consumption of 0.9 watts per metre

Typical Example



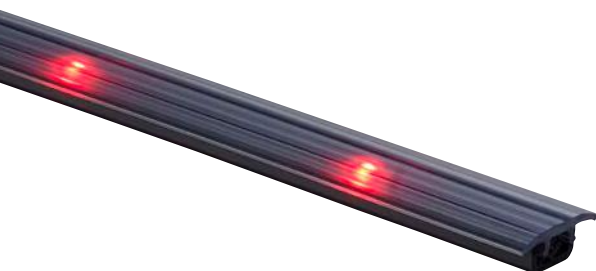
Floor Loom shown with CLS13/LBS45



Two-piece PVC-u Profiles

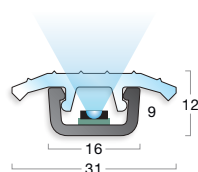
CL05/LB10

Carpet to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear window
- 9mm gauge to accommodate medium to heavy gauge carpets



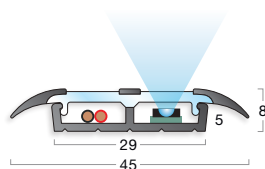
CLS13/LBS45

Carpet to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 5mm gauge to accommodate thinner gauge carpets



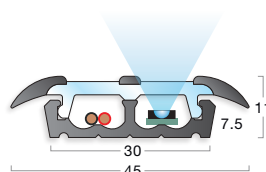
CLC13/TDB45

Carpet to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 7.5mm gauge to accommodate medium gauge carpets



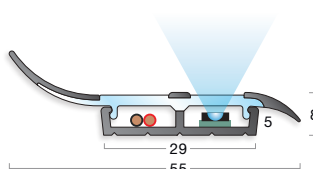
CLS16/LBS45

Carpet to Wall



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 5mm gauge to accommodate thinner gauge carpets
- Prevents dirt & debris collecting



Key	
Cable	
LED Lighting System	

Products subject to minor design alterations without notice.

LED Lighting Systems
Availability

Gradus Interlok Advance™

(For more detail see page 21)



Gradus Loom

(For more detail see previous page)



Two-piece PVC-u Profiles

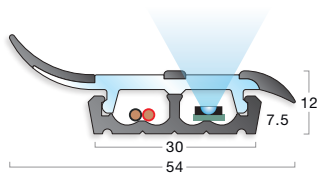
CLC16/TDB45

Carpet to Wall



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 7.5mm gauge to accommodate medium gauge carpets
- Prevents dirt & debris collecting



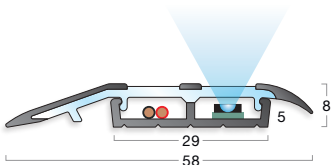
CLS20/LBS45

Vinyl to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 5mm gauge to accommodate thinner gauge carpets
- Provides a safe transition between floorcoverings of different heights



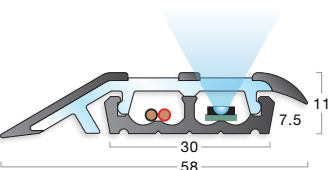
CLC20/TDB45

Vinyl to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear windows
- 7.5mm gauge to accommodate medium gauge carpets
- Provides a safe transition between floorcoverings of different heights



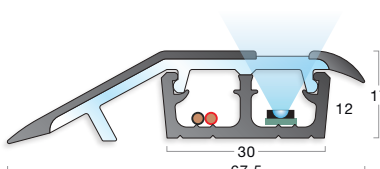
CLC11/TB45D

Vinyl to Carpet



Description

- Black PVC-u base
- Co-extruded tops available with smoked or clear window
- 12mm gauge to accommodate heavy gauge carpets
- Provides a safe transition between floorcoverings of different heights



Key

Cable	
LED Lighting System	

Products subject to minor design alterations without notice.

LED Lighting Systems Availability

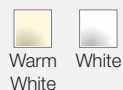
Gradus Interlok Advance™

(For more detail see page 21)



Gradus Loom

(For more detail see page 60)



CLC11/TB45D available in Gradus Interlok Advance & Loom (see above) and the following LED Lighting System

Gradus Continuity™

(For more detail see page 20)

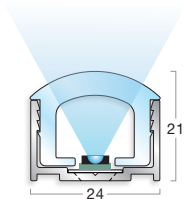






LED Continuity™ Linear Lighting



Continuity LED linear lighting offers an excellent alternative to neon lighting for interior applications. Utilising LED technology, this system features a similar light output and brightness to neon, whilst offering the benefits of extra low voltage, low power consumption and a long life cycle.

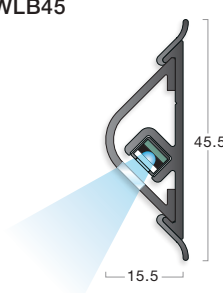
CODE / PROFILE	DESCRIPTION	LENGTH	PROFILE COLOUR	POWER	LED COLOUR
DC2012/DLA2415 	DC2012 PVC-u cover with DLA2415 Aluminium Carrier	LED 5m Cover 2m Carrier 2m	PVC-u cover available as Clear (CL) or Opaque (FR)	4.8 - 15.00 watts/metre (dependant on standard or high brightness)	<div> <div> ■ Blue ■ Green ■ Amber ■ Red ■ Warm White ■ White </div> <div>  RGBW Colour Changing  RGB Colour Changing </div> </div>

Products subject to minor design alterations without notice.

LED Wall Lighting

Gradus LED wall lighting has been designed to provide soft illumination way finding for auditoria access during showings or performances without distracting from the primary function of the installation. Gradus LED wall light provides 2.2 lux at 1.9m distance when mounted 300mm above the floor.



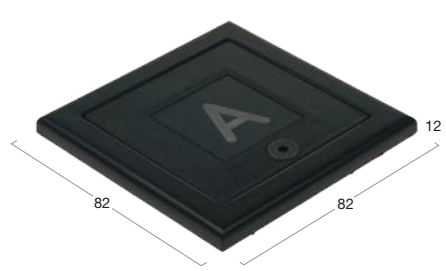
CODE / PROFILE	DESCRIPTION	LENGTH	PROFILE COLOUR	END CAPS	LED COLOUR
WLT30/WLB45 	PVC-u cover Incorporates a clear window for light to shine downwards PVC-u base	2.50m	Black Clear Translucent Window	ECWLB45 (right or left handed)	Interlok Advance 50mm spaced 12v or 24v DC <div> ■ Blue ■ Green ■ Amber ■ Red ■ Warm White ■ White </div>

LED Step Row Indicator

Gradus LED step row indicators are used to identify seating rows in auditoria, such as cinema, theatres and lecture theatres in darkened conditions. The profile can incorporate alphabetical or numerical formats, or can be produced in graphical format for directional signage or to denote wheelchair access points.

Suitable for use with carpets that have a compressed thickness of 12mm, the step row indicator profile can be installed into the floorcoverings on either the step tread or the riser.



CODE / PROFILE	DESCRIPTION	DETAILS	PROFILE COLOUR	POWER	LED COLOUR
LED Row Indicator 	PVC-u frame with window PVC-u base Indicator tile LED	Alphabetical, numerical or graphical format including disabled access	Black	12v DC	<div> ■ Blue ■ Green ■ Amber ■ Red ■ Warm White ■ White </div>

Products subject to minor design alterations without notice.

Control Equipment



Take control of your LED Lighting System

Our comprehensive range of control equipment and power supply units, coupled with our expert technical knowledge, allow us to work with you to create a tailored package that incorporates as little or as much functionality as your project requires.

Whether it's to simply switch on and off, adjust the colour and brightness at any time, or the ability to control multiple zones off a single controller, we can build this into the overall package.

For more details or to discuss your needs in more detail, call us on 01625 428922



Project Management & Installation



At Gradus one of our key business goals is to provide peace of mind for all our customers through quality, performance and a service that you can rely on. Our Contracts team manage the entire process to tailor quotations and orders to the specific needs of each individual project. Below details the additional services and customer support that Gradus can offer to clients across our full range of LED Lighting Systems.

Specification Consultants:

Provide face to face advice when specifying lighting, ensuring that the products selected are matched to the specific requirements of the environment.

We also have a wealth of knowledge and experience within our Contracts team who are more than happy to share their expertise with clients.

Dedicated Estimating Service:

Available on a supply only basis or for both supply and installation. Gradus also have online project collaboration capabilities.

Site Survey capabilities:

For supply & fit projects, Gradus can arrange a full survey and liaise with other trades to ensure complete peace of mind for the customer.

Supply and Fit package:

Ensures a convenient and reliable service throughout the specification, survey and installation process.

Trained and experienced technicians carry out the installations in line with Gradus quality systems, in accordance with current standards.

Electrical installations carried out and tested in accordance with BS7671 wiring regulations.

To take advantage of the supply and fit service, contact Gradus' specification consultants who will undertake an evaluation of the requirements from which a detailed quote can be prepared. Details of specification consultants are available from:

Gradus Technical Support on 01625 428922
Applicable to UK only.

Our commitment to the planet

Our values guide our actions

In every aspect of our activities, we take responsibility for the environment and pledge to meet our present business needs without compromising our long-term future environment.



Carbon Emissions from Operations

Our environmental performance

Gradus LED Lighting Systems provide an extra low voltage (12v and 24v) alternative to mains voltage lighting. The use of LED technology offers a longer lifespan than alternative formats, as well as reduced power consumption, for a more cost-effective lighting solution.

LED lighting systems are housed within Aluminium or PVC-u profiles that help to prevent damage caused by everyday wear and tear or during cleaning, and in the case of LED Step Profiles, protect the edges of surrounding floorcoverings too. A reduction in the amount of repair and maintenance could result in a reduction in operational carbon emissions for many businesses.

Frequent repairs can be time-consuming, costly and disruptive, especially where floorcoverings also need

to be removed or replaced. Any repairs are also likely to require the use of resources such as adhesives, therefore an effective LED Lighting solution can help to reduce the carbon emissions associated with the repair and maintenance process.

Limit our water consumption

In the interests of resource management, we set up actions to reduce our water consumption. This includes the setting of efficient closed-circuit cooling systems.

Water Usage

Our closed loop water system installed on all our extrusion production lines saves approximately 495,000 litres of water per year.

2025 GOALS



20%

reduction in
carbon emissions
(Scope 1&2)



Recycling: Part of our DNA

Reduction in General Waste / Waste Management

All the Gradus waste streams are removed by Registered Waste Carriers. Dry Mixed Recycling (paper, cardboard, polythene, cans etc) collection points have been set up across all sites. This cleaner waste material is diverted from landfill.

Wooden pallet usage has been reduced from 15,215 in 2017 to 10,310 in 2021 which equals to a 32% reduction. A simple but effective initiative of reusing unwanted supplier pallets from our carpet manufacturing facility for customer orders in our Matting department has massively impacted this reduction.

All our non-recyclable waste is diverted from landfill by Biffa Ltd, Alwin Ltd and Elsa Waste Ltd and sent for incineration. Overall Gradus has reduced skip removal by 75% with a focus on recycling rather than landfill.



PVC WASTE



22%

total pvc waste
reduction in past
10 years

ALUMINIUM WASTE



12%

total aluminium
waste reduction in
past 10 years

2025 GOALS



20%

increased use of
recycled pvc

Pvc waste reduction

- **22%** reduction in overall waste created from production of pvc components or products
- **1,375 tons** of process waste reused since 2012
- **10%** increase in processed waste being reused in the extrusion process between 2020 and 2021
- **151,150 Kgs** of pvc waste recycled into reusable pellets for Gradus production or new 3rd party products such as traffic cones

Aluminium waste reduction

- **12%** reduction in overall waste created from production of aluminium components or products
- **254 tons** of aluminium recycled since 2012
- **14%** increase in aluminium recycled between 2020 and 2021
- **16%** reduction in contaminated aluminium since 2012 making recycling easier

RECYCLING



Gradus makes every effort to conserve the use of materials and minimise the quantity of waste generated. We maximise the recycling ability of all waste materials that we generate. We also take into consideration the environmental impacts of new product development processes and new products are developed with recyclability as a key factor.



Specification Guidelines

The Building Regulations and British Standards specifying the right Gradus product

The Building Regulations and British Standards are designed to ensure the optimum specification of products through a combination of legislative requirements and guidance. The following extracts have been taken from The Building Regulations 2010 and British Standard BS 8300-2:2018, BS 9266:2013, BS 5395-1:2010 and show how Gradus products can be used to help satisfy these requirements, and help achieve an inclusive environment in line with the Equality Act 2010. For further details on this or any other aspect of The Building Regulations and British Standards contact Gradus Technical Services on 01625 428922. Guidance varies internationally, please refer to the relevant countries' building standards (or equivalent) before specification.

Extracts shown below represent examples of good practice.

BS 8300-2:2018

This standard provides guidance or good practice in the design of domestic and non-domestic buildings and their approaches so that they are convenient to use by disabled people. Gradus advice and recommendations are [shown in blue text](#).

Guidance on Stair Edgings

10 Vertical movement

10.1 Steps and stairs

10.1.4 Identification and slip resistance of nosings

Each step nosing should incorporate a durable, permanently contrasting continuous material for the full width of the stair on both the tread and the riser to help people who are blind or partially sighted appreciate the extent of the stair and identify individual treads ❶. The contrasting material should extend 50 mm to 65 mm in width from the front edge of the tread and 30mm to 55mm from the top of the riser, and should contrast visually with the remainder of the tread and riser ❷.

NOTE 1 Particular care is needed to ensure that there is adequate contrast between nosings and landings ❶.

NOTE 2 Nosing that wraps around the riser might assist people who are blind or partially sighted ❸.

NOTE 3 A proprietary nosing can provide a durable solution that satisfies both visual contrast and slip resistance criteria (see BRE IP 15/03).

The whole tread or the nosing should incorporate a slip-resistant material.

NOTE 4 Guidance on slip resistance of surfaces is given in Annex C.

Surface material tread and risers should be free from patterning.

NOTE 5 It is beneficial that surface material at landings and floors contrasts with surface material of stairs, subject to maintaining visual contrast at top and bottom nosings.

❶ All Gradus stair edging colours have been measured to provide Light Reflectance Values (LRVs)* in order to provide the specifier with information to ensure that suitable contrast is achieved with the surrounding stair material. The Gradus RXT1218L PVC-u illuminated stair edging profile can provide an ideal solution as the riser and insert colours can be matched to contrast with the floorcovering fitted to the tread and riser of the step.

* These values have been determined using the CIE Y value, in accordance with BS 8493:2008+A1:2010.

❷ The profile dimensions stated are guidance only and other factors should be taken into consideration when specifying stair edgings such as step dimension and type and frequency of traffic. However, a large proportion of Gradus stair edgings fall between the dimensions stated, including the XT range.

❸ The XT range of stair edgings features a slip-resistant pvc insert that extends around the leading edge of the profile to ensure that foot contact is always made with the slip-resistant element of the stair edging, providing the ideal solution for reducing the risk of slips, trips and falls on stairs in line with BRE recommendations.

10 Vertical movement

10.1 Steps and stairs

10.1.7 Surface materials

The surface materials used for internal steps and stairs should be chosen to be easy to maintain and as slip-resistant as possible, especially if surfaces are likely to become wet due to location or use, or if spillage occurs.

NOTE 1 Advice and further references on slip resistance of surfaces are given in Annex C.

A choice of slip-resistant insert materials is available for all Gradus stair edgings. Xtra-grip and Xtra-grip Plus inserts have been specifically designed to reduce the risk of slip in internal wet areas or where spillages are likely to occur.

10.1.6 Lighting

Each flight and landing of a stepped access route should be well illuminated, providing a clear distinction between each step and riser. The illuminance at tread level should be at least 100 lux.

Lighting that will cause glare (such as poorly located wall lights, spotlights, floodlights or low-level light sources) should be avoided.

Gradus provides a range of step and aisle lighting systems that in dark conditions, where light levels are below 100 lux on the step, will illuminate the edge of the step and provide a means of identifying the changes in level.

Annex C Slip potential characteristics of treads, ramp surfaces and floor finishes

C.2 Slip resistance

The following indices are used to indicate the slipperiness of surfaces:

- a) pendulum test values (PTVs) obtained using a pendulum tester in line with BS 7976-2;
- b) surface micro roughness (Rz) measurements using a stylus instrument in accordance with BS 1134.

Detailed information on assessing slip resistance, together with a table illustrating common surface materials and their dry and wet slip resistance values (SRV), also known as pendulum test values (PTV), can be found in BS 5395-1:2010, Clause 7.

NOTE Depending on the precise nature of the wearing surface, seemingly similar products made from the same material can be totally different in terms of their slip potential characteristics.

C.4 Step nosings

Where slip resistance is required for nosings and treads, the slip resistance needs to be equivalent to that expected for level surfaces. A PTV greater than 36 is considered to be suitable, as pushing and turning are unlikely on stairs. On existing nosings, the slip resistance of step nosings are generally expressed by their Rz roughness value as PTV is difficult to measure. In such cases a roughness Rz value of 20 µm is considered to be suitable.

All Gradus stair edging inserts are tested for slip-resistance using the pendulum tester – all inserts have a low slip potential (inserts measured in dry conditions - PTV of >36; inserts measured in wet conditions – PTV of >36). All inserts are also tested for wear, surface roughness, chemical resistance and bacterial/fungal resistance (contact Gradus for details).

The Building Regulations 2010 - Approved Document M

Approved documents are intended to provide guidance and much of the guidance in Approved Document M is based on BS 8300-2:2018. The main points relating to stair and stepped access in Approved Document M are shown below, with supporting recommendations by Gradus shown in blue text.

Stepped Access

- 1.27 People with impaired sight risk tripping or losing their balance if there is no warning that steps provide a change in level.
Use of a stair edging with LED lighting will make the steps highly visible when the ambient light levels are reduced.
- 1.29 Materials for treads should not present a slip hazard when the surface is wet.
Gradus illuminated stair edgings are available with a range of slip-resistant inserts for interior use, both in dry conditions and where there is a risk of the steps becoming wet.
- 1.30 People should easily be able to appreciate where to place their feet by highlighting nosings and avoiding open risers.
Use of a stair edging that contrasts with the surrounding tread/riser materials will help to clearly define the step edge in lit conditions. LED lighting will highlight the edge of the step when the general lighting is dimmed or off.
If light levels in an area are low, people entering the area from a well lit area will find it very difficult to see steps that are not fitted with step lighting.
Stair edging inserts should vary by 30 points in Light Reflectance Value (LRV) from the tread and riser materials, but less light will be reflected in low ambient light conditions, therefore the use of illuminated stair edgings will ensure the step remains visible when overhead lighting is dimmed or off.

Source: Building Regulations - Access to and use of buildings - Approved Document M - 2015 Edition incorporating 2020 amendments. Crown Copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland.

The colour, light and contrast manual

Keith Bright and Geoffrey Cook

Powered way-guidance systems include electroluminescent strips and tracks formed using miniature incandescent light-sources or LED's. Studies of powered way-guidance systems have shown that although they do not provide high illuminance in themselves, the contrast they provide with the surrounding area, and the fact they tend to delineate a route to be taken rather than a general area, mean they are generally preferred by all users, including those with poor vision. They also enhance the speed at which people escape from a space (Wright et al., 2001a).

There is also evidence to suggest that low-mounted way-guidance systems are often more effective than overhead emergency lighting in situations where smoke encroaches into the escape route (Cook et al., 1999b).

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