

LED Stair Lighting Specification

A 5 Step Guide by Gradus Industry Experts



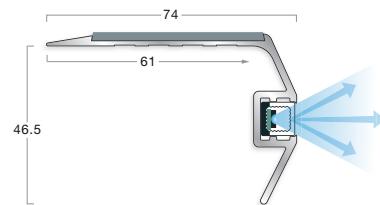
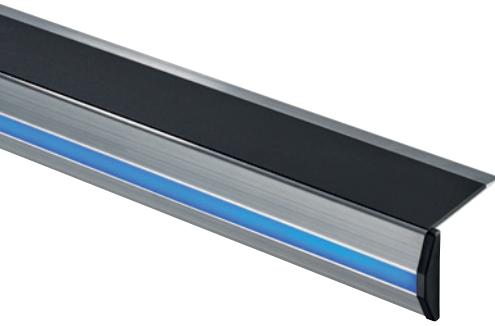
GRADUS

Step 1

Choosing the right LED stair edging

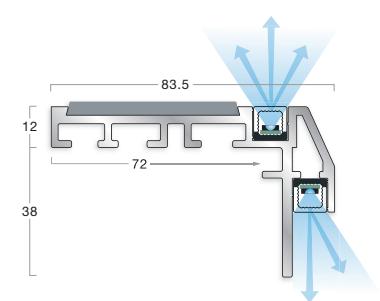
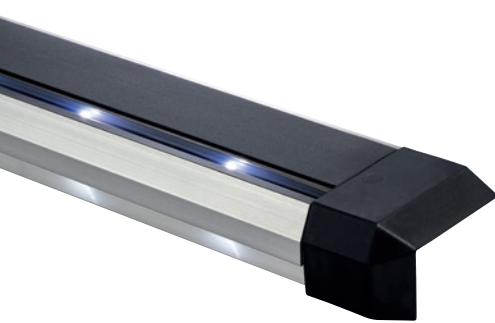
Select a stair nosing that matches the shape of the step precisely. It should fit tightly to prevent the profile from lifting or rocking during use. Gradus LED Step Profiles are suitable for square-edged steps.

Typical examples:



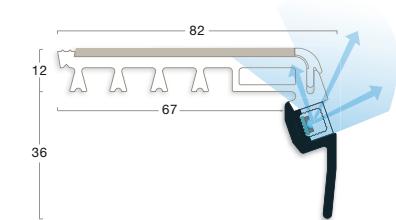
AS1106L

The AS1106L illuminated stair edging is available in aluminium, black or gold anodised finishes and features forward facing illumination and a ramped back for installation on resilient flooring or areas without surface floor coverings.



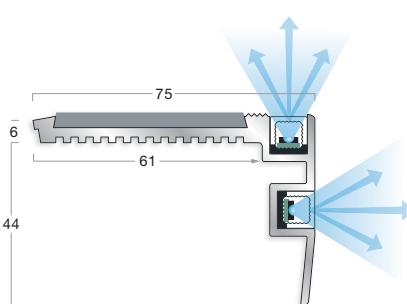
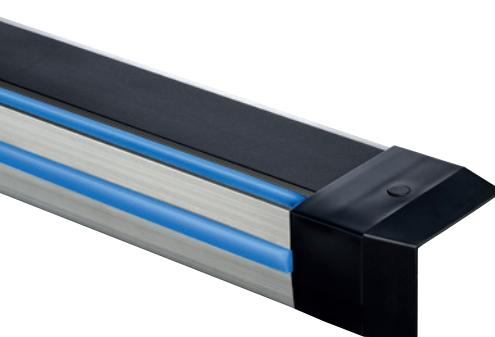
ATD121L

The ATD121L illuminated stair edging is available in aluminium, black or gold anodised finishes and features both up and down illumination and a 12mm gauge for carpet, wood and ceramic tile.



RXT1218L

The RXT1218L PVC-u illuminated stair edging features a clear channel to allow light to project through the profile, giving the option to use angled as well as multiple lighting effects. Available in a 12mm gauge for carpet, wood and ceramic tile.



ATF71L

The ATF71L illuminated stair edging in aluminium, black or gold anodised finishes allows light to project forwards as well as outwards. Available in a 6mm gauge for wood, carpet and resilient flooring.

Step 1

Choosing the right LED stair edging

The gauge (thickness) of the Step Lighting Profile should be a flush finish to the floorcovering to avoid a trip hazard being created. When installed with soft floorcoverings such as carpet or carpet tiles, the gauge should match the compressed thickness of the material to maintain a level finish. Gradus offers a variety of gauges designed to suit most commercial floorcoverings.

Gauge Options:

Ramp Back

Ideal for installations with no floorcovering or with resilient flooring. This profile should be fitted directly on top of the floorcovering to ensure a safe and secure finish. Not suitable for use with soft floorcoverings such as carpet or carpet tile.



5mm - 6mm

Designed for installations where the compressed carpet thickness falls within the 5-6mm range. This profile should butt up to the carpet for a flush finish.



10mm - 12mm

Suitable for installations where the carpet, stone, or marble falls within the 10-12mm range. This profile should butt up to the floorcovering for a level finish.



Step 2

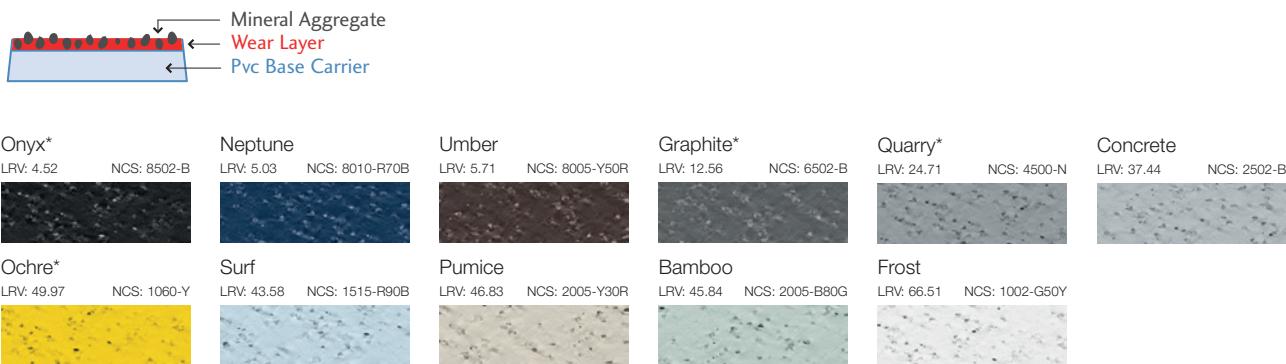
Selecting the correct insert type and colour

Xtra-grip™ & Xtra-grip Plus™

For any project incorporating LED step lighting, it is essential to ensure the correct insert type is chosen in order to achieve the required level of slip resistance. Appropriate visual and tonal contrast between the step profile and the surrounding floor coverings under normal lighting conditions should be considered.

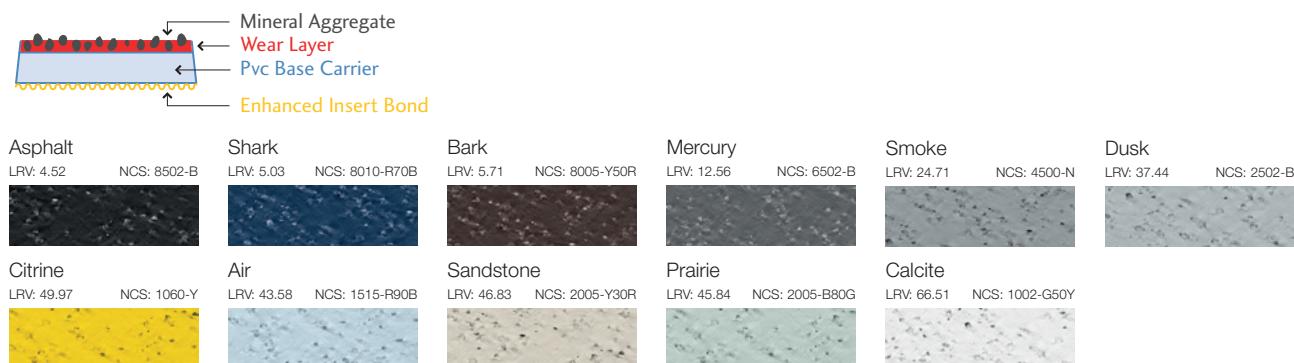
Xtra-grip™

A PVC insert designed for interior steps that may become wet, featuring a slip-resistant aggregate that ensures a low slip risk in both wet and dry conditions, with a PTV rating greater than 36.



Xtra-grip Plus™

Offers all the benefits of Xtra-grip, with the added advantage of an enhanced insert bond system designed for areas requiring frequent cleaning such as catering and food preparation zones and delivers a PTV rating greater than 36 in both wet and dry conditions.



Step 2

Selecting the correct insert type and colour

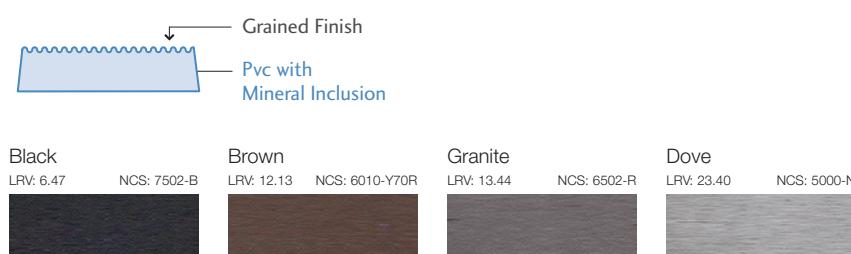
Interior Standard & Interior Grained

Available in standard or grained texture, is made from PVC with slip-resistant properties and is suitable for dry indoor environments where moisture contamination is not a concern, offering a PTV rating greater than 36 in both wet and dry conditions.

Interior Standard



Interior Grained



Additionally, when selecting an LED step profile, careful consideration must be given to the position and direction of the lighting. This is particularly important, as the illumination may serve as the sole means for users to identify the step edge in dark or low-light environments.

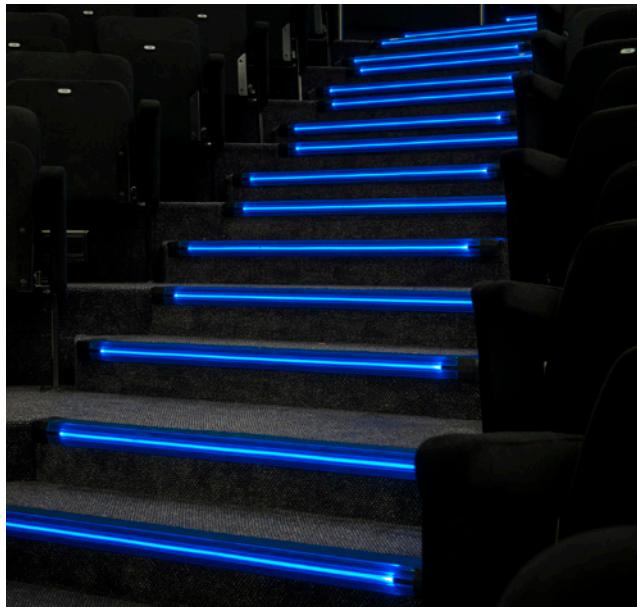
Step 2

Selecting the correct insert type and colour

Visual Contrast

All Gradus stair nosing channels and insert colours are assessed for Light Reflectance Values (LRVs) in accordance with BS 8493:2008+A1:2010 to support effective visual contrast.

Step Lighting Profile can be specified with the riser and insert in the same colour, ensuring adequate contrast with the floorcovering applied to the tread and riser of the step.



- Gradus LED Step Lighting Profile
- Visual contrast achieved
- Safe navigation

- No stair edging profile
- No visual contrast
- Difficult navigation

LRV Scale



Black

0

White

100

A 30 point difference in LRV is required for optimal visual and tonal contrast between floorcoverings and corresponding stair edging profiles.

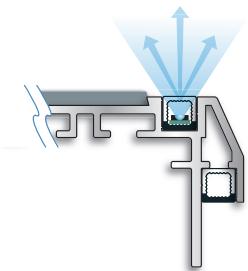
Step 3

Choosing the lighting direction

Safety Considerations - Aluminium Profiles

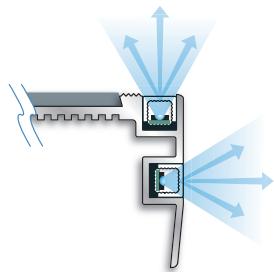
In environments where our LED Step Lighting is commonly installed, ambient lighting may occasionally be dimmed or turned off to accommodate the changing needs of a space. In low-light conditions, unlit steps can pose a visibility hazard for building users.

The position and direction of the lighting is an important factor to consider:



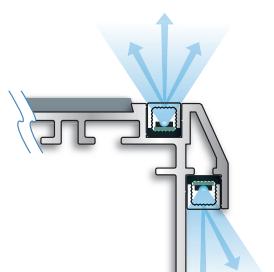
Up

Lighting directed upward is best for clearly defining the edge of the tread on each step, and helps people see where to place their feet when walking down stairs.



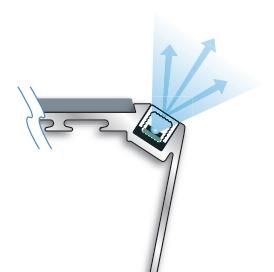
Up & Forward

Lighting directed upward and forward is ideal for highlighting both the edge of the tread on a step and the riser of the step, ensuring maximum safety and visual clarity when walking up and down stairs.



Up & Down

Up-and-down lighting is ideal for clearly defining both the tread and riser of each step, helping people see where to step when walking up and down stairs.



Angled Up

Angled upward lighting is ideal for highlighting the edge of each step without causing glare, helping people clearly see where to step when ascending stairs.

For optimal safety, it is essential to follow the visual and tonal contrast guidelines outlined previously, ensuring a minimum Light Reflectance Value (LRV) difference of 30 points. This contrast helps users distinguish step edges even when ambient light is reduced. Selecting an LED Step Profile that directs light upward will further improve edge definition, making steps easier to see and navigate safely.

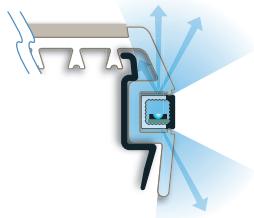
Step 3

Choosing the lighting direction

PVC Profile Considerations

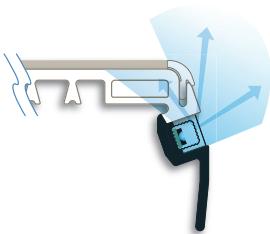
Clear PVC-u profiles are designed to allow light to pass through the material, creating a visually striking illuminated effect. This enhances both the aesthetic appeal and the functionality of the staircase.

Illuminated stair edging improves visibility and safety. It remains clearly visible whether someone is ascending or descending the stairs, helping to reduce the risk of trips and falls.



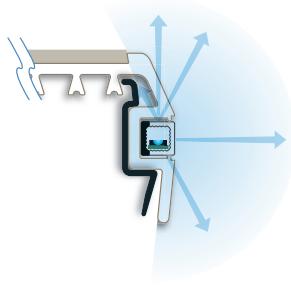
Up & Down

Clear PVC-U permits more light to pass through the profile. Up and down lighting is particularly effective in highlighting both the step edge and riser, making it easier for individuals to see where to step when ascending or descending stairs.



Up & Angled

Clear PVC-U allows more light to pass through. Upward angled lighting is ideal for illuminating stair edges, enhancing visibility without glare and helping people clearly see where to step, whether ascending or descending.



Up, Forward & Down

Clear PVC-U allows more light to pass through, improving visibility. Combined upward, forward, and downward lighting enhances both safety and aesthetics, upward lighting defines step edges for safer footing, forward lighting adds vibrant colour, and downward lighting highlights risers with a soft ambient glow.

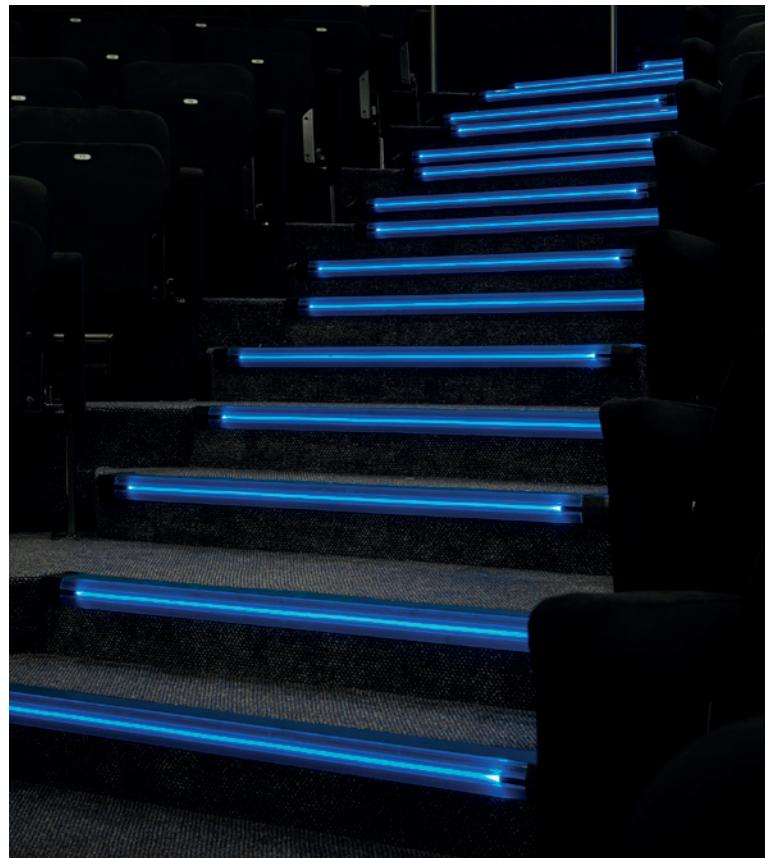
Step 4

Pick an LED lighting system

Gradus offers a selection of three lighting systems with a choice of effects that pair seamlessly with their Step Lighting Profiles, as detailed below:

Gradus Continuity

Gradus Continuity delivers a seamless linear lighting effect that enhances step-edge visibility in low-light environments. This innovative solution uses a fibre optic rod illuminated at one end by high-intensity LEDs, ensuring clear and consistent illumination along the step edge. This system is not suitable for use in downlights.

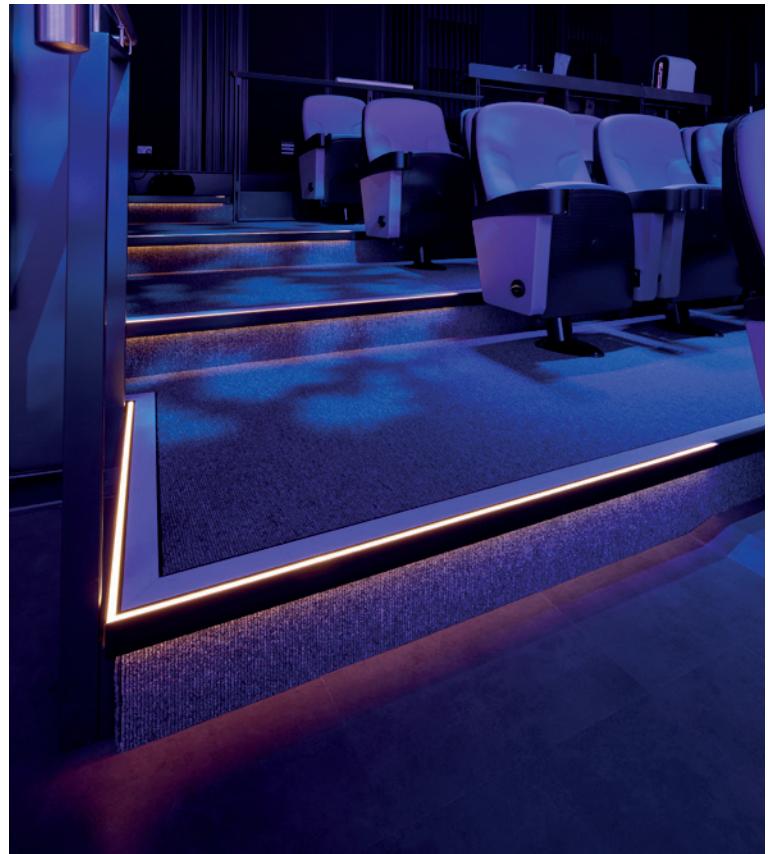
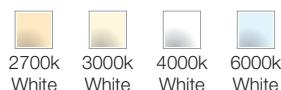


Step 4

Pick an LED lighting system

Gradus Impression

Gradus Impression incorporates LED tapes to create a continuous lighting effect that provides a wash of light, offering a sleek, modern finish. It is ideally suited for medium to well-lit environments where visual appeal and a polished final appearance are just as important as safety.

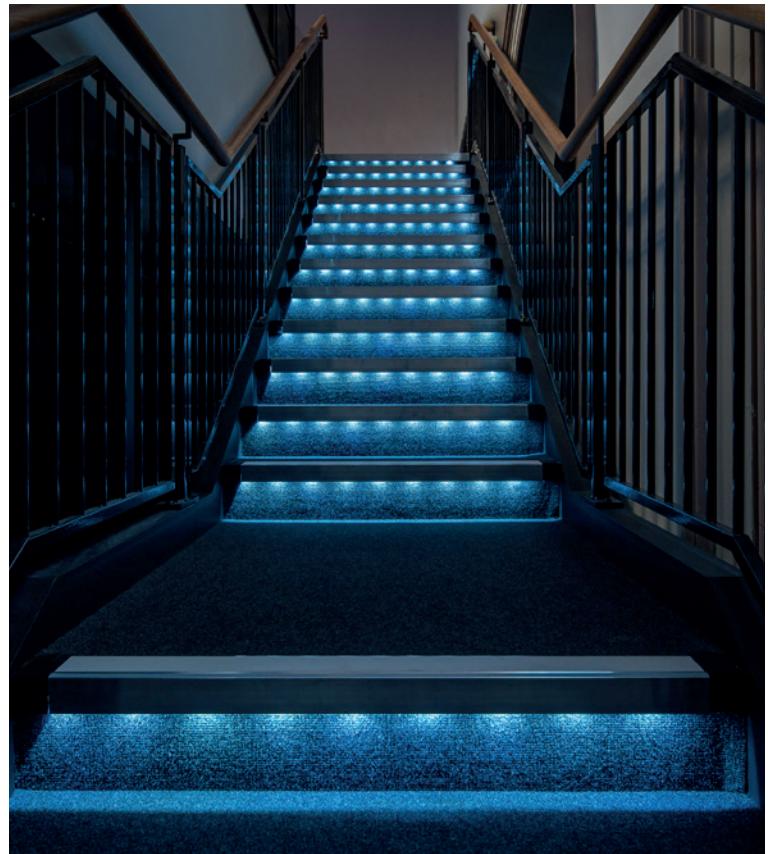


Step 4

Pick an LED lighting system

Interlok Advance

Gradus Interlok Advance delivers a precise pinpoint lighting effect using circuit board strips embedded with LEDs, spaced at intervals of either 50mm or 100mm. This design ensures consistent illumination and enhanced visual clarity.



Step 5

Establish if any control equipment is needed

To ensure your lighting solution is perfectly aligned with your project requirements, it's essential to assess the level of functionality needed. The following are key factors to consider when choosing control equipment for your system.



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

What functionality is required?



Adjusting LED brightness



Adjusting LED colour

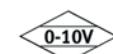
Compatibility with communication protocols required?



DALI



Triac



0-10V

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.

Email: lighting@gradus.com

Call: 01625 428922

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