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Pilot

Product Guide

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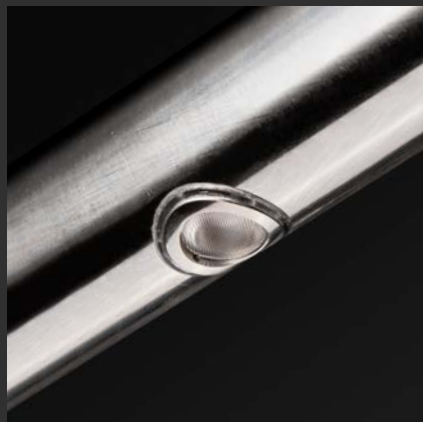

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Lighting simplified.

Building digital tools.
Sharing new knowledge.

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Contents

General

Specifications

The tiny solution to handrail illumination

Enhance aesthetics and visibility with the Pilot Handrail Series, which offers a slimline, unobtrusive design that is the perfect solution for any handrail configuration. This continuous flow of light contributes to both safety and ambience, delivering the most functional illumination.

The Pilot luminaire has been developed for applications in both round and square handrails. This carefully designed wayfinding luminaire provides high powered light from a small form factor. Whether it is a staircase in a public space, along balustrades or pathways, the Pilot is the ideal light for wayfinding applications.

Powering options

With the choice of constant current or constant 24V DC drivers, the Pilot Handrail Series can be wired in parallel for longer runs or wired in series for battery backup.

Choices of CCT

With CCT options of 2700K, 3000K, 4000K or RGB, the Pilot Handrail Series provides a colour option for every design preference and application.

An extended lifetime

The Pilot Handrail Series delivers a Lifetime L80B10 60,000hrs, which ensures high-quality illumination over many years.

Product Types

A comprehensive system inside a small package.

Available in round or square as well as symmetrical or asymmetrical design, the Pilot Handrail Light is the perfect solution to discretely integrate a highly-functional light into the built environment. This luminaire provides an unobtrusive light with minimal glare and a high degree of uniformity when spaced evenly along handrails.

With four different models and two unique shells, the Pilot Handrail Series can be customised to suit a range of different sizes of round and square handrails. The Pilot Round Handrail is perfect for round handrails, while the Pilot Flat Handrail is designed for square handrail applications.

Round

Flat

	 **Pilot (Symmetrical)** Round Handrail Light	 **Pilot (Symmetrical)** Flat Handrail Light	 **Pilot (Asymmetrical)** Round Handrail Light	 **Pilot (Asymmetrical)** Flat Handrail Light
Handrail Type Compatibility	Round	Square	Round	Square
Handrail Size Compatibility	Ø38-45mm, Ø48-63mm 1-2mm thickness*	≥50x50mm 0.8-7mm thickness	Ø38-45mm, Ø48-63mm 1-2mm thickness*	≥50x50mm 0.8-7mm thickness
Absolute Luminous Flux	140lm	127lm	122lm	110lm
Beam	Direct 70°	Direct 70°	Asymmetrical 70°	Asymmetrical 70°
Ideal Usage	Centre railing, side railing	Centre railing, side railing	Side railing	Side railing

**Thicker handrail capabilities available upon request.*

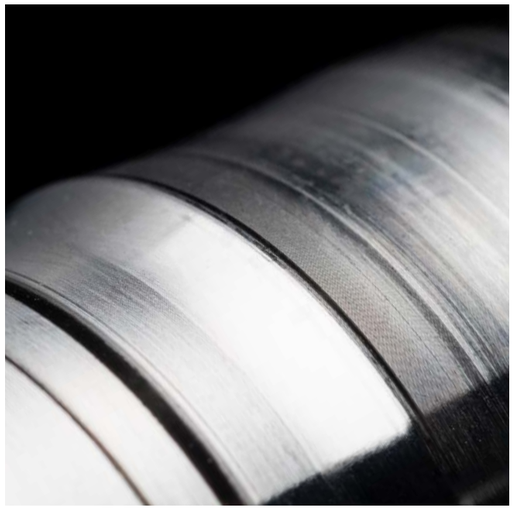
With combined IP66 & IP67 rating, the Pilot Handrail Series fixtures withstand even the most extreme conditions. The design and quality manufacturing protect against powerful water jets and immersion up to 1m, ensuring that the electrical and mechanical components are untouched.

IP66

The enclosure is waterproof against hose-directed water or rain; however, it does not protect against submersion.

IP67

The enclosure can withstand submersion in a body of water up to a meter deep for half an hour.



Manufactured to withstand Australia's harsh climate conditions, the Pilot uses high-grade materials. The Pilot Round Handrail Series is made from 316 marine grade stainless steel with the Flat from marine grade aluminium. As an additional layer of protection, the hardened plastic clip is UV stabilised to ensure optimum longevity even in the harsh sun.

316 Marine Grade

The 316 marine grade contains molybdenum, making the material more resistant to pitting when exposed to chemical corrosives such as chlorides present in seawater. Engineered for durability, the Pilot Handrail Series is carefully designed with optimum protection against rust and moisture.

IK10 Rating

The IK10 rating indicates the highest degree of protection provided by enclosures against external forces. Engineered to maintain safety while withstanding high energy impacts, the Pilot Handrail Series is the ideal solution for public pathways and spaces.

Vandal Proof

In conjunction with its robustness, the Pilot Handrail Series is also vandal proof as it requires a security tool to remove. Additionally, the unique mounting sleeve design works to prevent the luminaire from being pushed back into the handrail, eradicating ongoing maintenance.

A redesigned three-step installation method

Months of R&D have been invested in streamlining installation and simplifying the cabling process. The Pilot Handrail Series' constant voltage model can span significantly longer runs. With the application of 3M™ Scotchlok™, installers can now run a single cable through a handrail, bypassing the tedious process of cutting and joining individual cables. See the example on the right for a long constant voltage application over a bridge.

Constant Voltage

Each Pilot light can be paired with a 24VDC powered DC-DC converter to create a constant voltage system. This allows each Pilot to be wired in parallel to a single main cable run with individual tap-off connections. With an input voltage range of 12V to 36V, the new DC-DC converter allows flexibility in managing cable voltage drop. This enables long-distance strings of Pilot lights – 75 Pilots at 2m spacing covering a distance of 150m is possible using standard 24VDC drivers and a 4mm² cabling run.

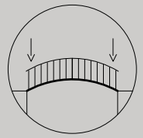
Constant Voltage Installation
Install main power cable through entire handrail.
Tap into main cable run at each location using Scotchloks™ to connect DC-DC driver.
Connect Pilot luminaire to DC-DC driver and insert into handrail.

Constant Current

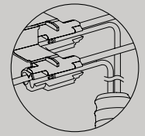
For applications where dimming is required, the Pilot lights can be wired in series and paired with a constant current driver. There are a large variety of drivers available, including Phase-cut, Analog 1-10V, and DALI dimming.

The number of Pilot lights per driver is dependent on the driver pairing – strings up to a maximum of 18 Pilots are possible while maintaining a Safety Extra-Low Voltage (SELV) rating.

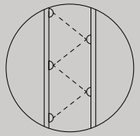
Constant Current Installation
Install main power cable in handrail up to the last location in each series string looping at the end.
Cut one main power cable conductor and wire plug, in series, using quick connects, noting correct polarity.
Connect Pilot luminaire to plug and insert into handrail.



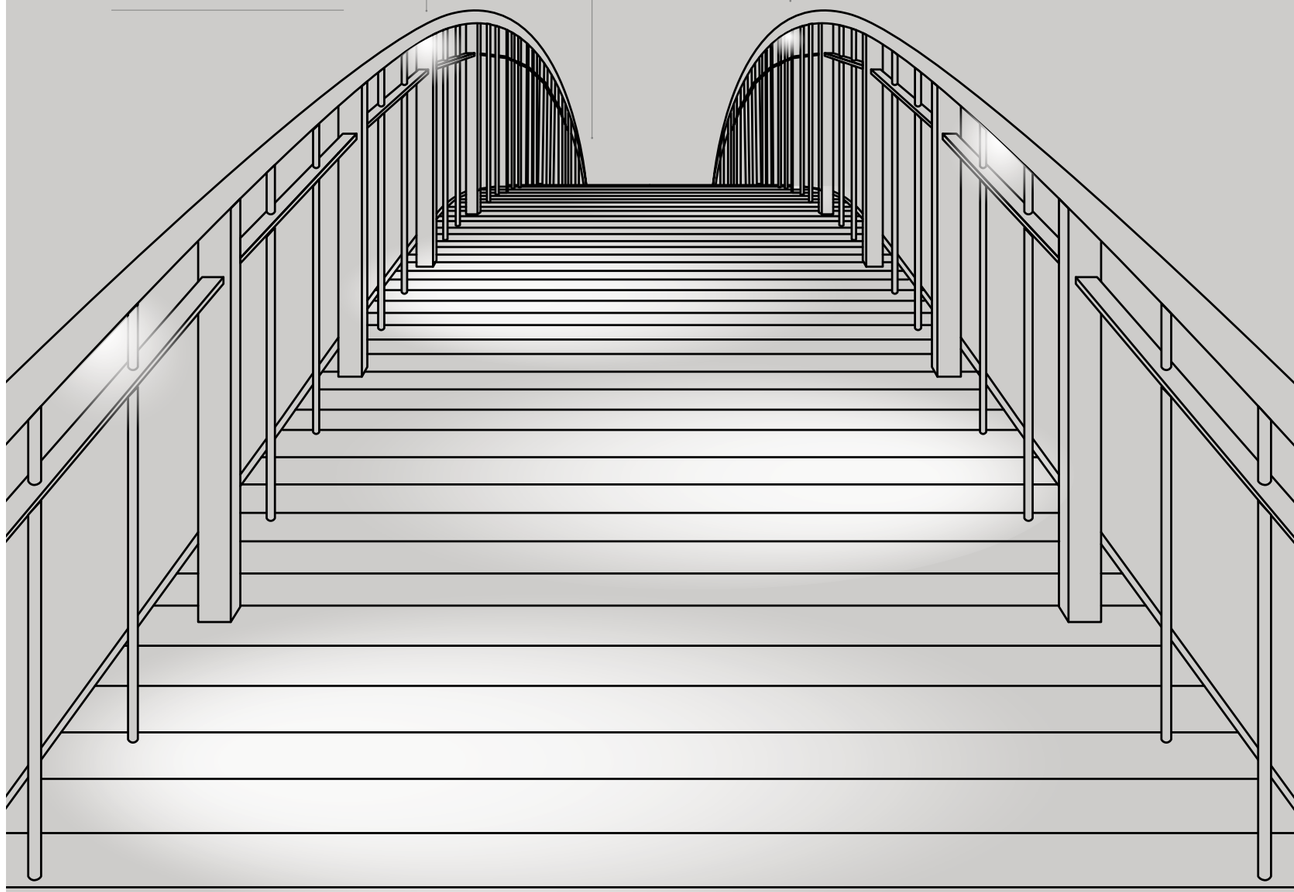
For very long pathways or bridges, consider installing drivers at both ends of the bridge, each powering half of the total distance. This allows for easier access to drivers for maintenance while doubling the effective run distance possible.



Scotchloks™ are tapped into the main cable run at each location to connect DC-DC driver.



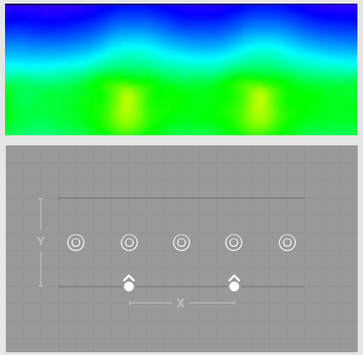
Utilising Pilot lights on both sides of a pathway in a staggered arrangement allows for greater uniformity and increased spacing between each Pilot light. By splitting the electrical load between two runs and increasing the spacing between each light, the maximum run distance is increased significantly.



Pilot arrangement recommendations

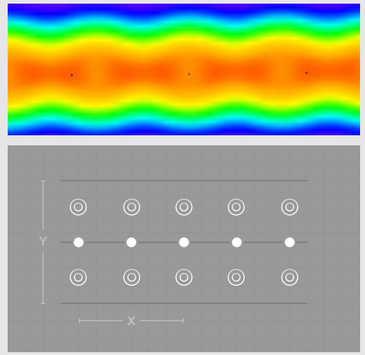
Lighting design for pathways and staircases can be a demanding and convoluted task with many technical challenges. To assist you in specifying the most suitable Pilot Handrail luminaire for your project, we have created a few arrangement scenarios using varied pathway width and luminaire spacing. To achieve uniform lighting, space the Pilots 600mm apart. The luminaires can be spread further apart where only minimum lumen levels are required. Refer to the legend on the bottom right for the icon key.

Single side application



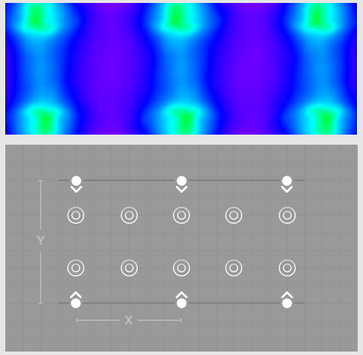
Specifications	
Beam Directions	Asymmetrical
Pathway Width (Y)	1000mm
Handrail Height	1000mm
Luminaire Spacing (X)	1000mm
Average Illuminance	49lx
Minimum Illuminance	33lx
Uniformity	0.67
Calculation Grid	500x500mm

Centred application



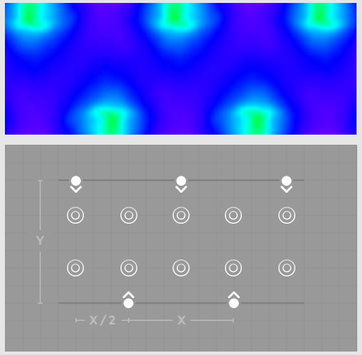
Specifications	
Beam Directions	Symmetrical
Pathway Width (Y)	1500mm
Handrail Height	1000mm
Luminaire Spacing (X)	1000mm
Average Illuminance	64lx
Minimum Illuminance	43lx
Uniformity	0.68
Calculation Grid	500x500mm

Two sides with even spacing



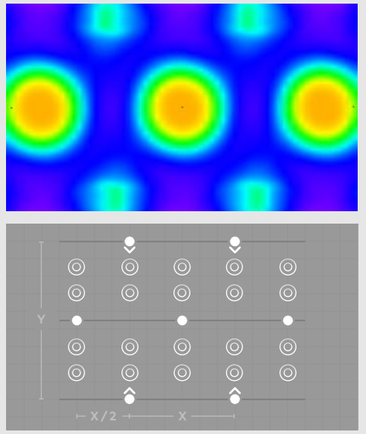
Specifications	
Beam Directions	Asymmetrical
Pathway Width (Y)	2000mm
Handrail Height	1000mm
Luminaire Spacing (X)	2000mm
Average Illuminance	32lx
Minimum Illuminance	21lx
Uniformity	0.65
Calculation Grid	500x500mm

Two sides with staggered spacing



Specifications	
Beam Directions	Asymmetrical
Pathway Width (Y)	2000mm
Handrail Height	1000mm
Luminaire Spacing (X)	2000mm
Average Illuminance	32lx
Minimum Illuminance	23lx
Uniformity	0.71
Calculation Grid	500x500mm

Centred with two sides



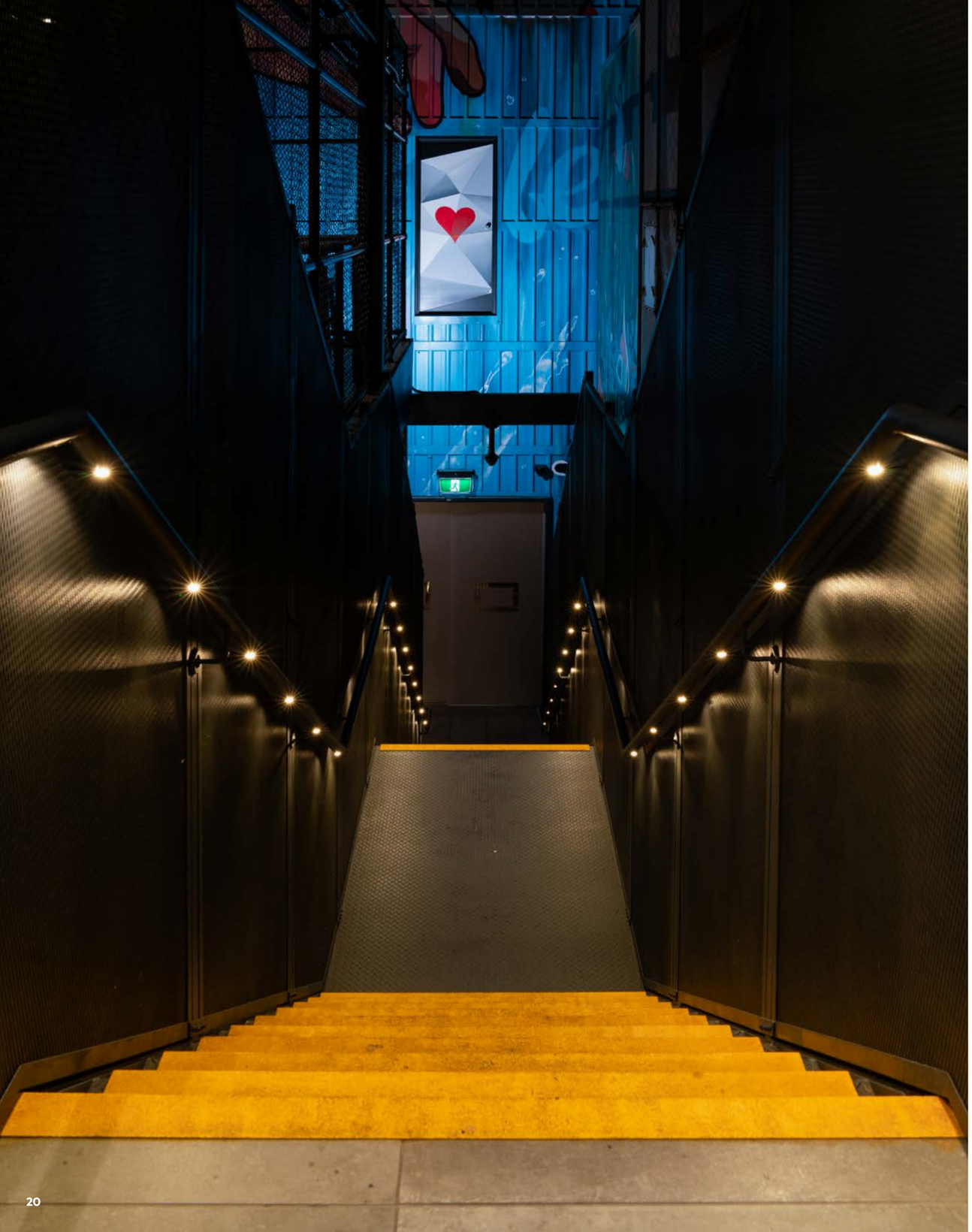
Specifications	
Beam Directions	Symmetrical, Asymmetrical
Pathway Width (Y)	3000mm
Handrail Height	1000mm
Luminaire Spacing (X)	2000mm
Average Illuminance	40lx
Minimum Illuminance	22lx
Uniformity	0.54
Calculation Grid	500x500mm

Legend

- Calculation Point
- Pilot Symmetrical
- Pilot Asymmetrical
- Y Pathway Width
- X Distance between luminaires

Illluminance (lux)

0 15 30 45 60 75 90 105 120



1

Round Symmetrical

2

Round Asymmetrical

3

Flat Symmetrical

4

Flat Asymmetrical

		LED Power	Lumens (at 3000K)	Beam	Weight	Handrail Size	Material
1	**Round Symmetrical**	1.5W (24V DC)	139lm	70°	98g	Ø38-45mm, Ø48-63mm	316 Stainless Steel
		(500mA at 3V)					
2	**Round Asymmetrical**	1.5W (24V DC)	119lm	70° Asymmetrical	98g	Ø38-45mm, Ø48-63mm	316 Stainless Steel
		(500mA at 3V)					
3	**Flat Symmetrical**	1.5W (24V DC)	125lm	70°	98g	≥50 x 50mm	Anodised Aluminium
		(500mA at 3V)					
4	**Flat Asymmetrical**	1.5W (24V DC)	107lm	70° Asymmetrical	98g	≥50 x 50mm	Anodised Aluminium
		(500mA at 3V)					

Key Information	
Mounting	Recessed
Finish	316 Stainless Steel Anodised Aluminium
LED CCT	2700K 3000K 4000K RGB
Warranty	5 Years

Design	
IP Rating	IP66/IP67
IK Rating	IK10
Class Rating	Class III

Performance	
Lumen efficacy	Up to 93lm/W
CRI (Ra/R9)	80+ (R9: >0)
Lifetime (Ta 25°C)	>60,000h L80B10
Ambient Temperature Range	10°- 30°C
SDCM	≤3

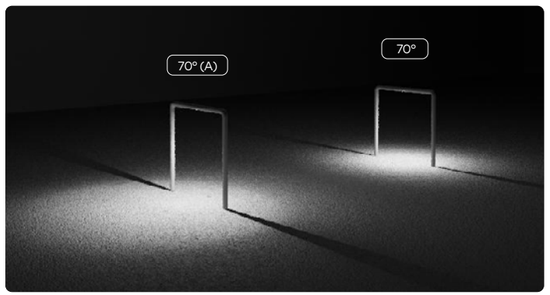
Driver	
Constant Voltage Non-Dim	Remote, wired in parallel
Constant Current Non-Dim	Remote, wired in series

Driver Notes

Non-dimmable Driver can still operate off DALI Relay with on/off control only.

Allow minimum 2W input power for 24V DC version when pairing suitable drivers.

36V DC options available upon request for longer distance runs.

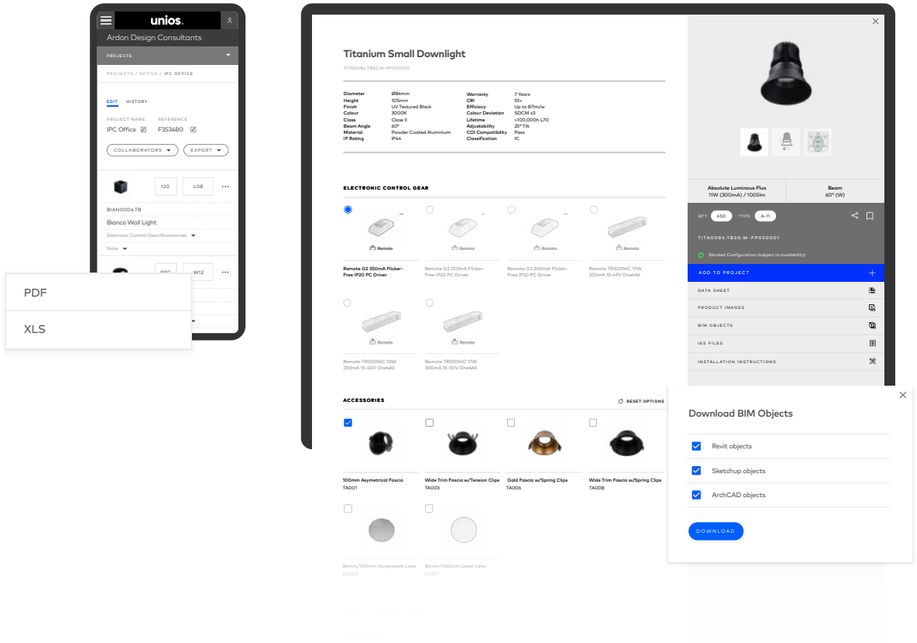


Notes

Cutout holes must be pre-drilled by handrail manufacturer and not by the contractor on site to ensure illumination consistency.

Options suited for other handrail sizes and thicknesses are available upon request.

Unios Toolbox



From design to documentation in seconds

Best-in-class product configuration tools

With different design and performance criteria for every project, discovering and configuring the right luminaire needs to be a seamless process. With the Unios Toolbox, you can filter through thousands of variations in seconds.

Export customised PDF and Excel lighting schedules

Project lighting can quickly get complex and time-consuming. We've developed a suite of tools to allow you to build a luminaire schedule, export it in PDF or Excel formats and integrate it back into your own project workflow.

More data accessibility than ever before

BIM objects, IES files, customised data sheets and product images are all easily accessible for your project requirements. All product variations are presented with a holistic view of each data point and piece of documentation you may require.

Special Thanks

This publication wouldn't be possible without the ongoing support of our project partners, distributors and photographers who have assisted in providing content.

More Information

For additional technical information and to access our full library, visit **unios.com**. Our library contains a comprehensive database of BIM objects, IES files and product imagery.

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