



THE HONOURABLE SOCIETY OF GRAY'S INN

External Lighting Design Strategy Report WBS-REP-002_A01

February 2016

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Client Name: The Honourable Society of Gray's Inn
Document Reference: WBS-REP-002
Project Number: BSD11869 Grays Inn-External Lighting Design Strategy Report_A01

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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Comments A01 Issue

Comments



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Contents

1. INTRODUCTION	1
2. EXTERNAL LIGHTING DESIGN STRATEGY	2

Appendices

- A. Luminaires

1. INTRODUCTION

The honourable Society of Gray's Inn seek the office redevelopment located at 19-21 High Holborn comprising of 646Sqm of retail space and 2,901Sqm office accommodation respectively.

The objective of the redevelopment works is to provide energy efficient building meeting all the statutory requirements as a minimum and market expectations and demands for a speculative commercial office development.

The redevelopment works will be extended to provide external lighting to the following areas:

- The side and back of the building perimeters
- The passage to the private Gray's Inn private estate from High Holborn
- Part of the private road which leads to Gray's Inn Road.

2. EXTERNAL LIGHTING DESIGN STRATEGY

The existing 19-21 High Holborn has an existing external lighting in the form of wall mounted low bay flood lights that illuminates the through passage from High Holborn to the private estate security barrier.

The external lighting design strategy is to disconnect and remove the existing luminaires, and the installation of a new external lighting scheme, to provide functional and aesthetical illumination to the new office development and through passages to the private estate.

Luminaires will utilise LED 'lamp source' with colour rendering and high luminous efficacy characterises, providing a 'white light' source for improved security and enhance user comfort.

The new external lighting has been designed to an environmental E4 classification, as an Urban surrounding, with high district brightness in the local lighting environment.

The new lighting scheme amounts to a 10% upward light ratio in its entirety.

A site drawing is included within this report detailing the type of luminaires utilised and lux levels achieved and those are as follows:

- Light ref. B – Wall mounted 9W LED
- Light ref. EX1 – in-ground 36W LED.
- Light ref. EX2 – Wall recessed 12W LED
- Light ref. Ex3 – recessed 10W LED downlight.

Refer to 3D illuminance model for a visual representation of the scheme illuminance distribution result.



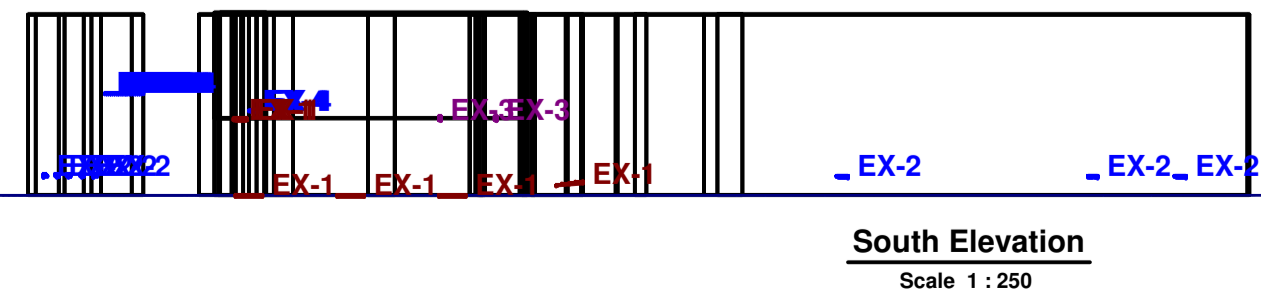
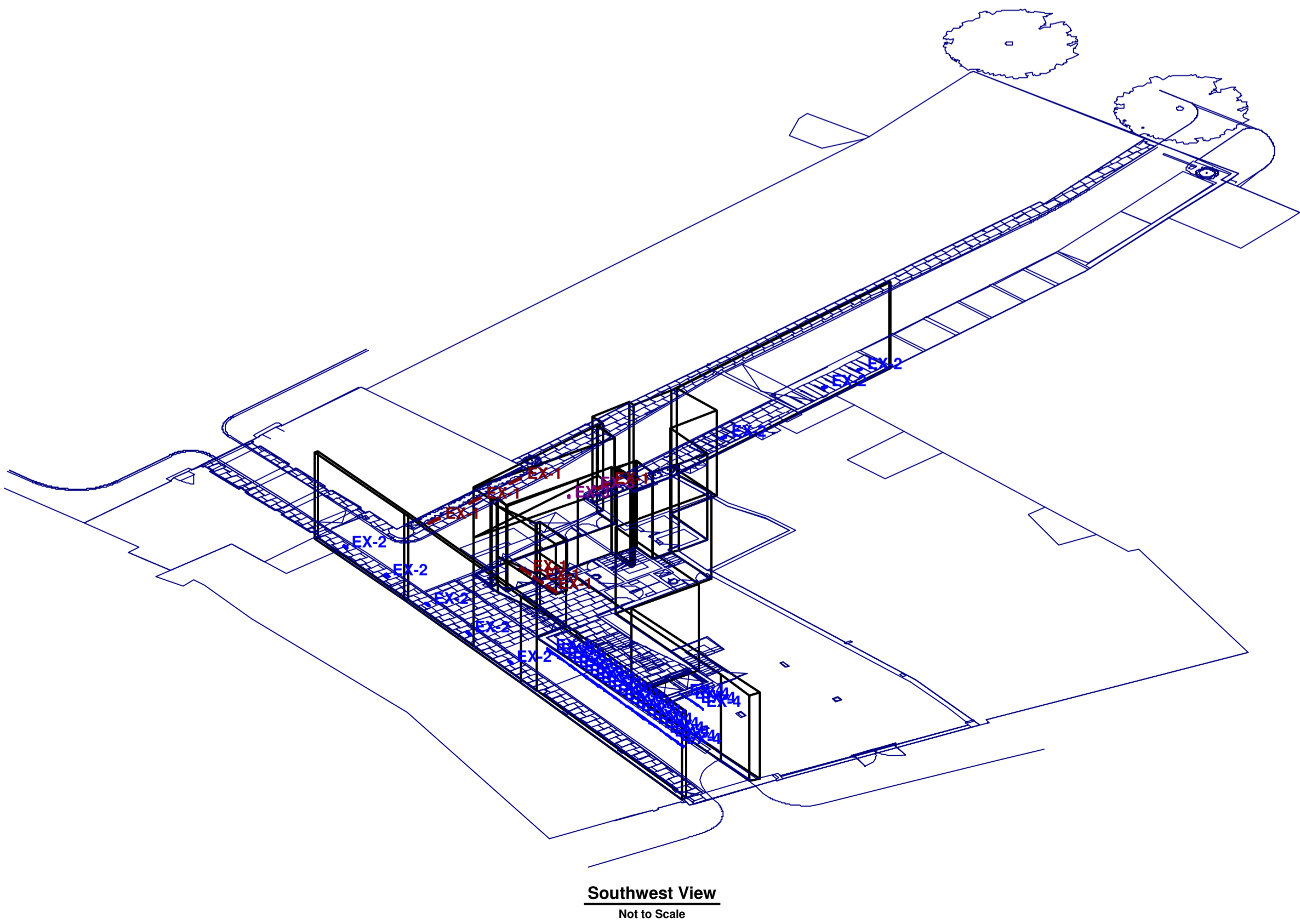
APPENDICES

A. Luminaires

LUMINAIRE SCHEDULE									
Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
EX-1	EX-1	7	8412618	Tetra incasso 900 36W (36 LED)		8412618.IES	4500	0.90	0
EX-2	EX-2	8	8413418	Tetra incasso 360 12W (12 LED)		8413418.IES	1500	0.90	0
EX-3	EX-3	2	8429611	1200 Incasso soffitto 10W (6 L)		8429611.IES	990	0.90	0
EX-4	EX-4	28	8486614	Esagono 600mm 10W (112 LED) 30		8486614.IES	390	0.90	0

STATISTICS						
Description	Symbol	Avg	Max	Min	Min/Max	Min/Avg
Central Area	X	10 lux	125 lux	1 lux	0.01	0.10
Doorways	◇	207 lux	382 lux	28 lux	0.07	0.14
Eastern Path	X	5 lux	63 lux	0 lux	0.00	0.00
Lower Steps	+	33 lux	133 lux	1 lux	0.01	0.03
Upper Steps	◇	16 lux	111 lux	0 lux	0.00	0.00
West Footpath	□	54 lux	137 lux	0 lux	0.00	0.00

- NOTES**
- Holophane Europe Ltd offer a Lighting Design Service in good faith and without charge, every effort is made to ensure we interpret the design specification accurately.
 - All illuminance values shown are the result of theoretical computer calculations; summated by luminaires positioned in a fixed relationship to each other and the statistical zone.
 - In practice the values may vary due to tolerances in column installation, luminaire orientation, surface reflectance and fluctuations in power supply (voltage).
 - Results provided within this design are derived from product specific photometry, the substitution of alternative luminaires will not produce comparable results.
 - Queries regarding this drawing should be addressed to David Goodchild on (07793) 041599 or dgoodchild@holophane.co.uk.
 - All calculations are maintained at 2,000 hours.
 - The contour lines on the 3-D view represent 5 lux from source.



Gray's Inn
Decorative Lighting As architect's plan
for Waterman

Designer
D Goodchild

Date
Dec 10 2015

Scale
As shown at A1

Drawing No.
P115-2494-02

Technical information

Class	II
Power	10
Intensity	945 lm
Optics	10°
Position of the Lamp	Adjustable ±10°
Breaking Strength	IK 10
Protection Rating	IP68 Full Dry
Weight	1,7 KG
Percentage of Light Output (upwards)	0
Power Supply	Electronic
Electrical Connection	220-240V 0/50/60Hz Triac dimmable



Light efficiency	"Source"	"Fitting"
Power	10	-
Luminous flux	945 lm	917,78 lm
Light efficiency	94,5	-

LED available on request in colour

IP68 Full Dry

Energy efficiency classification

A A+ A++

Colour code

04 (Stainless steel)

Features of the product

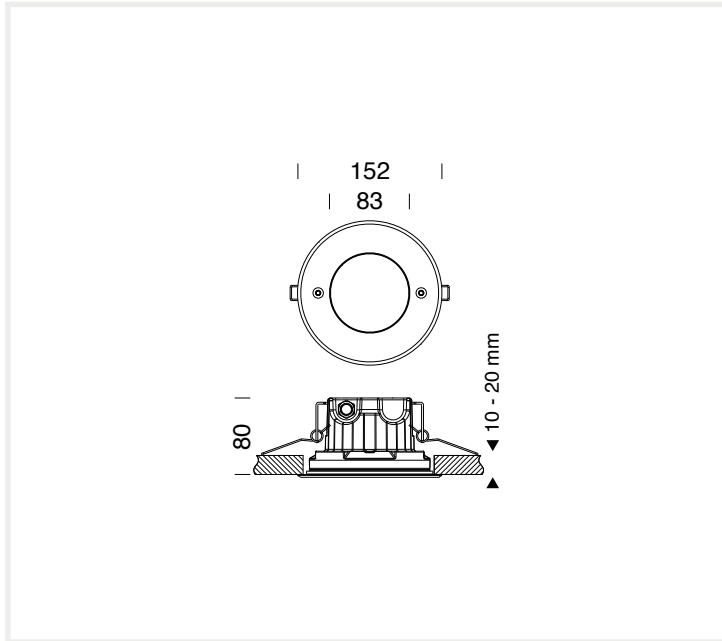
- Body made of die-cast EN 44100 aluminium alloy, corrosion resistant.
- Locking ring made of AISI 316L stainless steel.
- Protection by means of iridite, epoxy powder base coating and polyester painting.
- A4 stainless steel screws.
- IP68 protection rating with FULL DRY system preventing condensation inside the fitting.
- 140mm fixing hole diameter.
- 15mm extra-clear flat tempered glass cover.
- Product supplied with one power supply cable 1m in length.
- Fixing springs suitable from 10 up to 20mm thick ceilings.

Notes

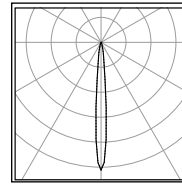
- 1-Spring fixing system suitable for false ceilings from 10 up to 20 mm
- 2-Gasket with holder for coloured, sandblasted and elliptical filters
- 3-AISI 316 stainless steel closing ring
- 4-IP68 Full Dry
- 5-Product supplied with 1m cable



Technical drawing

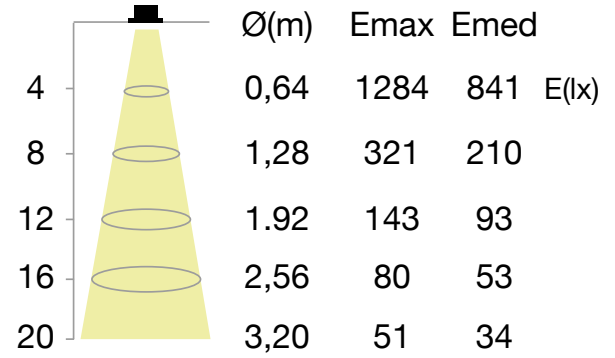


Photometric data



8429611
10°
20443,17 cd/klm

Isolux curves



Values related to 4000K version. The values for 3000K version are -8,7% lower

Accessories



8918750
Ellipsoidal filter



8918755
Sandblasted filter



8917000
IP67 quick connector,
suitable for 5 - 13 mm Ø
cables, max.3 x 1,5 mm²



8917004
IP68 gel connector, suitable
for 9,5 - 12 mm Ø cables,
max.3 x 4 mm²



8917006
IP68 gel connector, suitable
for 4,8 - 6 mm Ø cables, max
2 x 0,75 mm²



Technical information

Class	I
Power	9
Intensity	1.159 lm
Optics	50°
Breaking Strength	IK 10
Protection Rating	IP65
Weight	6 KG
Percentage of Light Output (upwards)	0
Power Supply	Electronic
Electrical Connection	220-240V 50/60Hz

Light efficiency	"Source"	"Fitting"
Power	9	-
Luminous flux	1.159 lm	934,71 lm
Light efficiency	128,78	-

LED available on request in colour

IP65

Energy efficiency classification

A A+ A++

Colour code

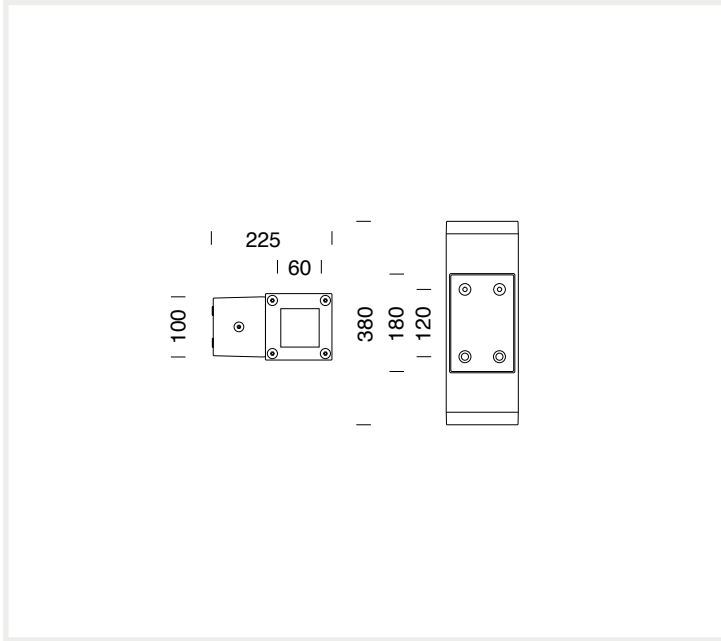
 06 (Goffered grey)

Notes

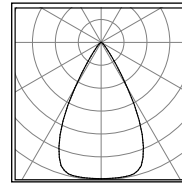
Features of the product

Body made of extruded aluminium alloy, corrosion resistant.
 Die-cast aluminium locking flange and wall fixing part, corrosion resistant.
 Protection by means of iridite, epoxy powder base coating and polyester painting.
 Wired by means of a quick connector, to simplify assembling operations.
 A4 stainless steel screws.
 12mm flat tempered glass cover.

Technical drawing



Photometric data



8436368
50°
1191,16 cd/klm

Isolux curves

Accessories



Technical information

Class	I
Category EN 60598-2-13	C5
Power	12
Intensity	1.411 lm
Optics	50°
Position of the Lamp	Fixed
Breaking Strength	IK 10
Protection Rating	IP67
Roll-over weight	500
Weight	2 KG
Glass Temperature	37°
Percentage of Light Output (upwards)	100
Power Supply	Electronic
Electrical Connection	220-240V 50/60Hz

Light efficiency	"Source"	"Fitting"
Power	12	-
Luminous flux	1.411 lm	856,24 lm
Light efficiency	117,58	-

LED available on request in colour

IP67

Energy efficiency classification

A A+ A++

Colour code

04 (Stainless steel)

Features of the product

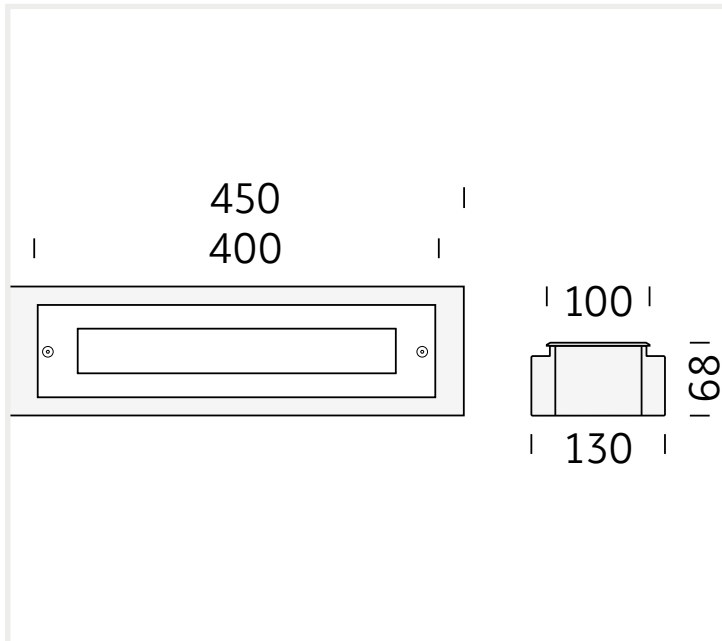
- Body made of extruded aluminium alloy, corrosion resistant.
- Locking ring made of AISI 316L stainless steel.
- Protection by means of iridite, epoxy powder base coating and polyester painting.
- A4 stainless steel screws.
- Product supplied with one power supply cable 1m in length.
- 8mm flat tempered glass cover.
- AISI 430 stainless steel sleeve to be ordered separately.
- Installation in sleeve set in concrete, with a 20-30 cm gravel drain bed.
- It is possible to install fitting in wall.
- Gore-Tex valve to prevent condensation inside the fitting.

Notes

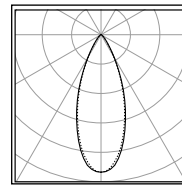
- 1-Stainless steel sleeve
- 2-Asymmetrical version with serigraphed glass for high visual comfort
- 3-AISI 316 stainless steel closing ring
- 4-Side maintenance
- 5-Product supplied with 1 m cable
- 6-Gore-Tex valve to prevent condensation inside the product



Technical drawing



Photometric data



8413418
50°
1869,62 cd/klm

Isolux curves

Values related to 4000K version. The values for 3000K version are -8,7% lower

Accessories



8945060
AISI 430 stainless steel sleeve
(Tetra incasso 360)



8917000
IP67 quick connector,
suitable for 5 - 13 mm Ø
cables, max.3 x 1,5 mm²



8917004
IP68 gel connector, suitable
for 9,5 - 12 mm Ø cables,
max.3 x 4 mm²

Technical information

Class	I
Category EN 60598-2-13	C4
Power	36
Intensity	4.234 lm
Optics	50°
Position of the Lamp	Fixed
Breaking Strength	IK 10
Protection Rating	IP67
Roll-over weight	2000
Weight	6,3 KG
Glass Temperature	37°
Percentage of Light Output (upwards)	100
Power Supply	Electronic
Electrical Connection	220-240V 50/60Hz



Light efficiency	"Source"	"Fitting"
Power	36	-
Luminous flux	4.234 lm	2.569,87 lm
Light efficiency	117,61	-

LED available on request in colour

IP67

Energy efficiency classification



Colour code

04 (Stainless steel)

Features of the product

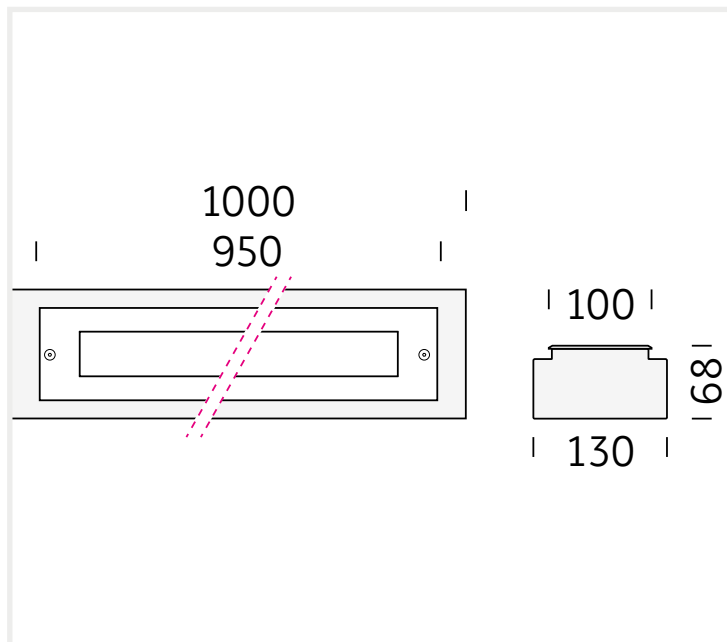
- Body made of extruded aluminium alloy, corrosion resistant.
- Locking ring made of AISI 316L stainless steel.
- Protection by means of iridite, epoxy powder base coating and polyester painting.
- A4 stainless steel screws.
- Product supplied with one power supply cable 1m in length.
- 8mm flat tempered glass cover.
- AISI 430 stainless steel sleeve to be ordered separately.
- Installation in sleeve set in concrete, with a 20-30 cm gravel drain bed.
- It is possible to install fitting in wall.
- Gore-Tex valve to prevent condensation inside the fitting.

Notes

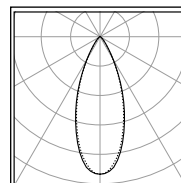
- 1-Stainless steel sleeve
- 2-Low installation depth, 72 mm
- 3-Asymmetrical version with serigraphed glass for high visual comfort
- 4-AISI 316 stainless steel closing ring
- 5-Side maintenance
- 6-Product supplied with 1 m cable



Technical drawing



Photometric data



8412618
50°
1869,62 cd/klm

Isolux curves

Values related to 4000K version. The values for 3000K version are -8,7% lower

Accessories



8945065

AISI 430 stainless steel sleeve
(Tetra incasso 900)



8917000

IP67 quick connector,
suitable for 5 - 13 mm Ø
cables, max.3 x 1,5 mm²



8917004

IP68 gel connector, suitable
for 9,5 - 12 mm Ø cables,
max.3 x 4 mm²

UK and Ireland Office Locations

