26th September 2025

Auckland City Council
Private Bag 92300
Victoria Street West
Auckland 1142

ELECTRICAL
CONSULTING
SERVICES LTD

Re: New Development Ambridge Rose Apartments at 147-153 Edgewater Drive, Pakuranga, Auckland

Please see attached the illumination design for the **proposed development at 147-153 Edgewater Drive, Pakuranga, Auckland.** This has been designed to comply with the **Auckland Unitary Plan (Operating in Part) Section E24 Lighting and Auckland Council Lighting Plan (Part 11)** requirements. Illumination predictions have been performed on Lighting Analysts Illumination Engineering Software (AGI32) Version 20.

Please refer to the following.

- Pages **One – Two** for Report
- Page **Three – Six** Proposed Exterior General Lighting and ISO-line
- Pages **Seven - Ten** for Obtrusive Lighting, ISO-line and Compliance Report
- Pages **Eleven Onwards** for Luminaire Spec sheets

Lighting calculations are subject to the accuracies and tolerances in accordance with AS/NZS 3827.1:1998 & AS/NZS 3827.2:1998. These accuracies and tolerances include variances in the building dimensions and obstructions, surface finishes, luminaire positioning and aiming, ambient temperature, atmospheric conditions, luminaire photometry, lamp output, lighting design software, electrical supply and instrument calibration. These predictions are offered as accurate calculation of an acceptable lighting design that complies with the above stated standard.

Yours Sincerely,

Brent Wilson
Electrical Engineer

ELECTRICAL AND BUILDING SERVICES ENGINEERS
Level 3 65 Upper Queen Street, Eden Terrace, Auckland 1010
PO Box 911140, Victoria Street West, Auckland 1142
New Zealand
T 09 309 0640 F 09 309 5410 E inquiries@ecservices.co.nz W www.ecservices.co.nz

Executive Summary

Supply of external lighting is to provide security and functional lighting of sufficient quality to enable the safe circulation of vehicles and personnel at night as required by Unitary Plan Section E27.6.3.7 for a site with more than 10 parking spaces planned.

The external lighting calculation has been developed to meet Unitary Plan Lighting Standard E24 and is suitable for a Housing Development of this scale while minimising adverse effects for

neighbouring residential properties.

The site is in a Residential - Mixed Housing Suburban Building Zone - So Unitary Plan Lighting Category 3 (medium brightness) applies.

External lighting is designed to meet AS/NZS 1158.3.1-2020

Driveways Paths and Carparks subcategories are selected from tables 2.1, 2.2 and 2.5 Respectfully under the following criteria:

- Night-time vehicle or pedestrian movements - low
- Risk of crime - medium

Luminaires comprise low level LED bollards and Wall mounted LED luminaires for pedestrian, vehicle circulation and car park areas.

This been calculated with reasonable care and diligence to the required standards and unitary plan. E24.6.1 Compliance items:

1. Lighting limits have been assessed to Standard AS 4282-1997.
2. A Maintenance Factor of 1.0 has been used in all Obtrusive and Spill Calculations.
3. Lighting category 3 (medium brightness) has been used for the site.
4. Noted regarding artificial light from nearby luminaires, this is not available nor considered applicable to this calculation.
5. Lighting Curfew time noted as commencing at 10.00pm each night until 7.00am the next day.
6. Added illuminance does not exceed 10 lux horizontal and vertical on the adjacent residential
7. Luminaires have been selected, located, aimed, and adjusted to be less than the luminous intensity limit of 1,000cd for the neighbouring residences.
8. Calculation methods have been noted and AGi software has been used to simulate conditions in accordance with AS 4282 Control of obtrusive effects of outdoor lighting.
9. Threshold Increment limits are not exceeded for traffic in both directions on Edgewater Drive based on adaption luminance of 15% based on 2 cd/m2.

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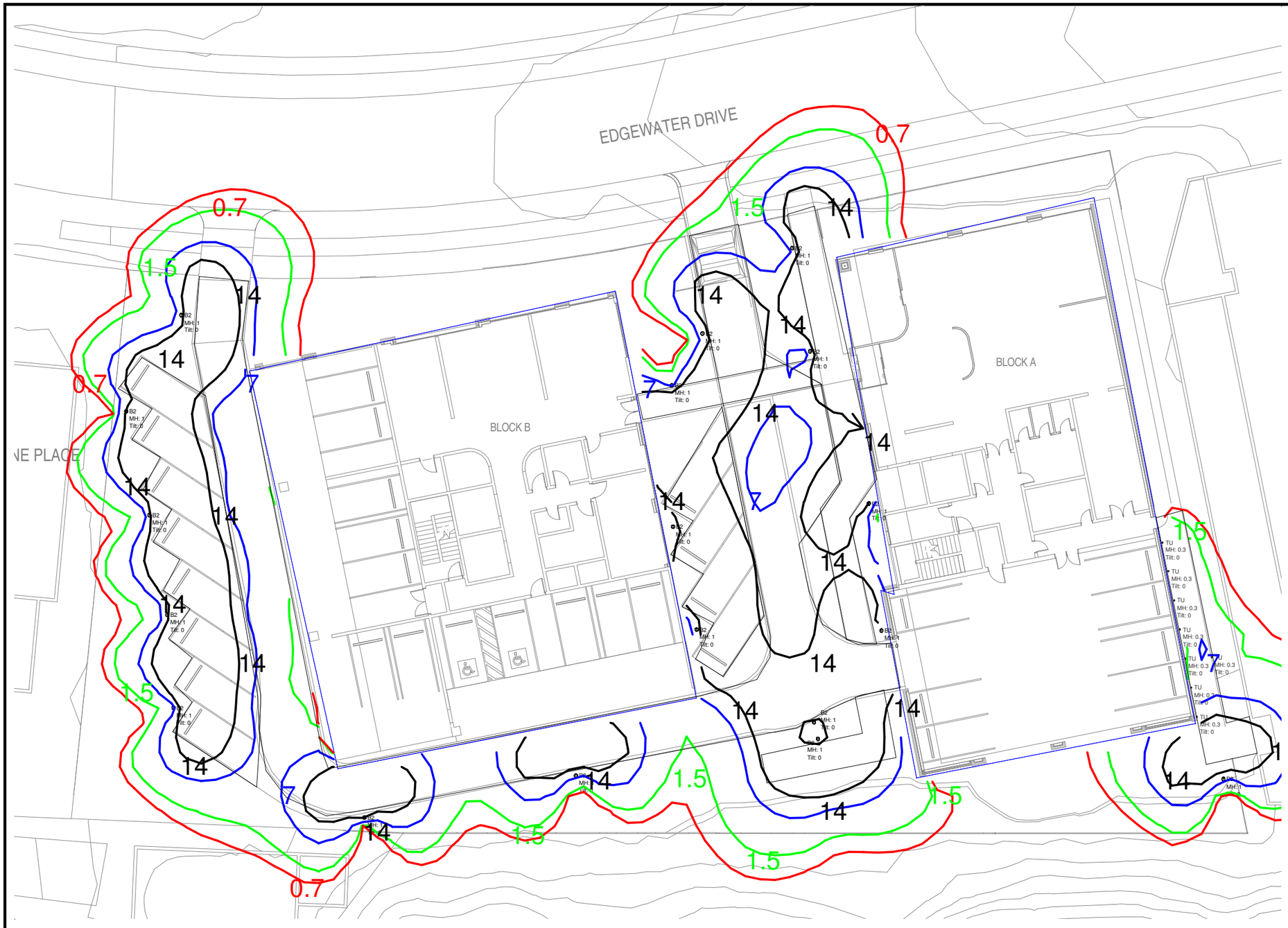

GENERAL NOTES:

1. Lighting calculations are based upon initial lamp lumens with a maintenance factor applied & derived in accordance with AS/NZS 1158 as shown below. When calculating Obtrusive and Spill Lighting, calculation is Initial Luminance - LLF 1.000

2. Isolux lines show illuminance values at grade.

3. Luminaires are mounted at the heights & tilts as indicated on the drawing.

4. All luminaires have 0deg upcast (flat glass).

5. All poles are CREE 'PS' Premium Steel, Crown-Weld,base plate mounted & Finished in Powedercoat Black.

6. Lighting calculations are subject to the accuracies & tolerances in accordance with AS/NZS 3827.1:1998 & AS/NZS 3827.2:1998. These accuracies & tolerances include variances in the building dimensions & obstructions, surface finishes, luminaire positioning & aiming, ambient temperature, atmospheric conditions, luminaire photometry, lamp output, lighting design software, electrical supply & instrument calibration.

MAINTENACE FACTOR (MF)

Lamp Lumen Maintenace Factor (LLMF)
* LED lamp lumen depreciation after 50,000 hours of operation
- Cree TD-13 data (in accordance with IESNA TM-21-11 & LM-80-08) utilised to obtain this value, 15degC average night time ambient

Luminaire Maintenance Factor (LMF)
* IP6X Luminaire IP rating
* Urban Environmental Zone
* Luminaire cleaning every 72 months
- Value obtained from table 3.2 of AS/NZS 1158.3.1:2020

Luminaire Schedule					
Symbol	Label	Qty	LLF	Arrangement	Description
⊕	TU	8	0.750	Single	ADLT Thunder 55 One Way 2W 3000K LED Wall Recessed Lumianire - Stainless Steel
⊕	B2	18	0.750	Single	ADLT Denver Elite Double Optics 23W 3000K LED Bollard 1m High - Black

LUX ISOLINE LEGEND

Illuminance (Lux)

Color	Value
	0.7
	1.5
	7
	14

MAINTAINED ISO

TITLE	147-153 EDGEWATER DRIVE PAKURANGA
CLIENT	AMBRIDGE ROSE APARTMENTS
PROJECT #	225421

Designed	B.W.
Checked	B.W.
Date	26-09-2025
Scale	N.T.S.

REVISION	#	DATE	DESCRIPTION

ELECTRICAL CONSULTING SERVICES LTD

TECHNICAL CALCULATION NOTES - (CATEGORY P LIGHTING)

TABLE 3.3 - VALUES OF LTP FOR ROADS IN LOCAL AREAS
- AS/NZS 1158.3.1:2020

1	2	3	4
Lighting Subcategory	Light Technical Parameters (LTP)		
	Average Horizontal Illuminance (a,b)	Point Horizontal Illuminance (a,b)	Illuminance (Horizontal) Uniformity (c) Cat. P
PR1	7	2	8
PR2	3.5	0.7	8
PR3 (e)	1.75	0.3	8
PR4 (d,e)	1.3	0.22	8
PR5 (d,e)	0.85	0.14	10
PR6 (d)	0.7	0.07	10

a These values are maintained.
b Conformance is achieved by being greater than or equal to the applicable table value.
c Conformance is achieved by being less than or equal to the applicable table value.
d See clause 3.2 pertaining to lumen derating values for non-white light source
e When luminaire are to be supported on exisitng electricity reticulation poles, the subcategories PR3, PR4 and PR5 may be reduced to the next lower subcategory PR4, PR5 and PR6 respectively.

TABLE 2.1 LIGHTING CATS FOR ROAD RESERVES IN LOCAL AREAS

Basic Operations	Activity	Fear of Crime	Need to Enhance	Applicable Lighting Cat.
Mixed Vehicle and Ped Traffic	N/A	High	N/A	PR1
	High	Medium	High	PR2
	Medium	Low	Medium	PR4
	Low	Low	Low	PR5
	N/A	N/A	N/A	PR6

Illuminance Calculation Summary						
Description	CalcType	Units	Average	Max	Minimum	Uniformity
Carpark East PC2	Illuminance	Lux	19.37	30.04	10.36	1.55
Carpark West PC2	Illuminance	Lux	19.63	33.74	6.57	1.72
Driveway PR3	Illuminance	Lux	11.34	33.51	0.86	2.96
Footpath East PP3	Illuminance	Lux	8.51	20.68	1.19	2.43
Footpath PP3	Illuminance	Lux	18.65	32.69	6.57	1.75
Footpath South PP3	Illuminance	Lux	19.90	27.16	9.95	1.36

TITLE	147-153 EDGEWATER DRIVE PAKURANGA	PROJECT #	225421
CLIENT	AMBRIDGE ROSE APARTMENTS		

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TECHNICAL CALCULATION NOTES - (CATEGORY P LIGHTING)

TABLE 3.4 - VALUES OF LTP FOR PATHWAYS AND CYCLIST PATHS
- AS/NZS 1158.3.1:2020

1	2	3	4	5
Lighting Subcategory	Light Technical Parameters (LTP)			
	Avereage Horizontal Illuminance (a,b)	Point Horizontal Illuminance (a,b,c)	Illuminance (Horizontal) Uniformity (c) Cat. P	Point Verticle Illuminance (a,b)
PP1	10	2	5	1
PP2	7	1	5	0.5
PP3	3	0.5	5	0.1
PP4	1.5	0.25	5	0.05 (e)
PP5	0.85	0.14	5	0.02 (e)

a These values are maintained. See Clause 3.2 pertaining to lumen derating values for non-white light sources.
b Conformance is achieved by being greater than or equal to the applicable table value.
c Conformance is achieved by being less than or equal to the applicable table value.
d Conformance of 50% of Eph shall also be demonstrated over and area of 5m either side of the pathway - where a verge exists - or up to any structure/fence/property boundary that forms the edge of the path, unless deemed otherwise by the relevant authorities (see Clause 3.1.3.5).
e For luminaires with mounting heights of 1.5m or less , the Epv values need not be applied.

TABLE 2.2 LIGHTING CATS FOR PEDESTRIAN AND CYCLIST PATHS

Type of Pathway		Selection Criteria		Application Lighting Category
General description	Basis Operating Characteristics	Pedestrian/ cycle activity	Fear of crime	
Pedestrial or cycle orentated pathway, i.e. foorpaths, including those along local roads and arterial roads, walkways, lanes, park paths, cyclist paths.	Pedestrial and or cycle traffic only	N/A	High	PP1
		Low	Medium	PP2
		Medium	Medium	PP3
		Medium	Low	PP4
		Low	Low	PP5

Illuminance Calculation Summary						
Description	CalcType	Units	Average	Max	Minimum	Uniformity
Carpark East PC2	Illuminance	Lux	19.37	30.04	10.36	1.55
Carpark West PC2	Illuminance	Lux	19.63	33.74	6.57	1.72
Driveway PR3	Illuminance	Lux	11.34	33.51	0.86	2.96
Footpath East PP3	Illuminance	Lux	8.51	20.68	1.19	2.43
Footpath PP3	Illuminance	Lux	18.65	32.69	6.57	1.75
Footpath South PP3	Illuminance	Lux	19.90	27.16	9.95	1.36

TITLE	147-153 EDGEWATER DRIVE PAKURANGA	PROJECT #	225421
CLIENT	AMBRIDGE ROSE APARTMENTS		

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ELECTRICAL CONSULTING SERVICES LTD

TECHNICAL CALCULATION NOTES - (CATEGORY P LIGHTING)

TABLE 3.7 - VALUES OF LTP FOR OUTDOOR CARPARKS (INCLUDING ROOF-TOP CARPARKS) - AS/NZS 1158.3.1:2020				
1	2	3	4	5
Lighting Subcategory	Light Technical Parameters (LTP)			
	Avereage Horizontal Illuminance (a,b)	Point Horizontal Illuminance (a,b,c)	Illuminance (Horizontal) Uniformity (c) Cat. P	Point Verticle Illuminance (a,b)
PC1	14	3	8	3
PC2	7	1.5	8	1
PC3	3.5	0.7	8	-
PCD (d)	-	>14 and >(Eph) (d)	-	-
PCX (e)	21	5	8	-

a These values are maintained. See Clause 3.2 pertaining to lumen derating values for non-white light sources.
b Conformance is achieved by being greater than or equal to the applicable table value.
c Conformance is achieved by being less than or equal to the applicable table value.
d Conformance of 50% of Eph shall also be demonstrated over and area of 5m either side of the pathway - where a verge exists - or up to any structure/fence/property boundary that forms the edge of the path, unless deemed otherwise by the relevant authorities (see Clause 3.1.3.5).
e For luminaires with mounting heights of 1.5m or less , the Epv values need not be applied.

Table 2.5 LIGHTHING CATS FOR OUTDOOR CAR PARKS (INCLUDING ROOF-TOP CAR PARKS

Type of area	Selection Criteria		
	Night time vehicle and/or pedestrian movements	Fear or crime	
Parking spaces, aisles and circulation roadways	HIgh	HIgh	PC1
	Medium	Medium	PC2
	Low	Low	PC3
Designated parking spaces specifically intended for people with disabilities	N/A	N/A	PCD
Foe any designated areas for pedestrians to cross	N/A	N/A	PCX

Illuminance Calculation Summary						
Description	CalcType	Units	Average	Max	Minimum	Uniformity
Carpark East PC2	Illuminance	Lux	19.37	30.04	10.36	1.55
Carpark West PC2	Illuminance	Lux	19.63	33.74	6.57	1.72
Driveway PR3	Illuminance	Lux	11.34	33.51	0.86	2.96
Footpath East PP3	Illuminance	Lux	8.51	20.68	1.19	2.43
Footpath PP3	Illuminance	Lux	18.65	32.69	6.57	1.75
Footpath South PP3	Illuminance	Lux	19.90	27.16	9.95	1.36

TITLE	147-153 EDGEWATER DRIVE PAKURANGA
PROJECT #	225421
CLIENT	AMBRIDGE ROSE APARTMENTS

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Date	26-09-2025
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ELECTRICAL CONSULTING SERVICES LTD

GENERAL NOTES:

1. Lighting calculations are based upon initial lamp lumens with a maintenance factor applied & derived in accordance with AS/NZS 1158 as shown below. When calculating Obtrusive and Spill Lighting, calculation is Initial Luminance - LLF 1.000

2. Isolux lines show illuminance values at grade.

3. Luminaires are mounted at the heights & tilts as indicated on the drawing.

4. All luminaires have 0deg upcast (flat glass).

5. All poles are CREE 'PS' Premium Steel, Crown-Weld,base plate mounted & Finished in Powedercoat Black.

6. Lighting calculations are subject to the accuracies & tolerances in accordance with AS/NZS 3827.1:1998 & AS/NZS 3827.2:1998. These accuracies & tolerances include variances in the building dimensions & obstructions, surface finishes, luminaire positioning & aiming, ambient temperature, atmospheric conditions, luminaire photometry, lamp output, lighting design software, electrical supply & instrument calibration.

MAINTENACE FACTOR (MF)

Lamp Lumen Maintenace Factor (LLMF)
* LED lamp lumen depreciation after 50,000 hours of operation
- Cree TD-13 data (in accordance with IESNA TM-21-11 & LM-80-08) utilised to obtain this value, 15degC average night time ambient

Luminaire Maintenance Factor (LMF)
* IP6X Luminaire IP rating
* Urban Environmental Zone
* Luminaire cleaning every 72 months
- Value obtained from table 3.2 of AS/NZS 1158.3.1:2020

Calculation Summary			
Label	CalcType	Max	Units
Edgewater Drive Ti W	Obtrusive - TI	0	%
Edgewater Drive Ti E	Obtrusive - TI	0	%
Obtrusive SEG_Cd_Seg1	Obtrusive - Cd	51	N.A.
Obtrusive SEG_Cd_Seg2	Obtrusive - Cd	56	N.A.
Obtrusive SEG_Cd_Seg3	Obtrusive - Cd	55	N.A.
Obtrusive SEG_Cd_Seg4	Obtrusive - Cd	62	N.A.
Obtrusive SEG_Ill_Seg1	Obtrusive - Ill	0.41	Lux
Obtrusive SEG_Ill_Seg2	Obtrusive - Ill	0.59	Lux
Obtrusive SEG_Ill_Seg3	Obtrusive - Ill	0.96	Lux
Obtrusive SEG_Ill_Seg4	Obtrusive - Ill	0.10	Lux

Luminaire Schedule					
Symbol	Label	Qty	LLF	Arrangement	Description
⊕	TU	8	0.750	Single	ADLT Thunder 55 One Way 2W 3000K LED Wall Recessed Lumianire - Stainless Steel
⊕	B2	18	0.750	Single	ADLT Denver Elite Double Optics 23W 3000K LED Bollard 1m High - Black

LUX ISOLINE LEGEND

Illuminance (Lux)

Color	Value
	0.7
	1.5
	7
	14

OBTRUSIVE AND SPILL ISO

TITLE	147-153 EDGEWATER DRIVE PAKURANGA
PROJECT #	225421
CLIENT	AMBRIDGE ROSE APARTMENTS

Designed	B.W.
Checked	B.W.
Date	26-09-2025
Scale	N.T.S.

REVISION	#	DATE	DESCRIPTION

ELECTRICAL CONSULTING SERVICES LTD

LIGHTING CATEGORY CLASSIFICATIONS
AUCKLAND UNITARY PLAN TABLE E24.6.1.1

ZONE	Lighting category 1 (Intrinsically dark)	Lighting category 2 (Low brightness)	Lighting category 3 (Medium brightness)	Lighting category 4 (High brightness)
Residential – Terrace Housing and Apartment Buildings Zone			X	

Table E24.6.1.2 Horizontal and vertical illuminance at a boundary

Time	
Pre-curfew	**100 lux above the background level**
Curfew	**10 lux above the background level**

Table E24.6.1.3 Vertical illuminance at a window

Time	Vertical illuminance limit for each lighting category			
	Lighting Category 1	**Lighting Category 2**	**Lighting Category 3**	**Lighting Category 4**
Pre-curfew	2 lux	10 lux	10 lux	25 lux
Curfew	0 lux (Except Public Road LIghting)	1 lux	2 lux	4 lux

Table E24.6.1.4 Threshold increment

Light Technical Parameter	Threshold increment limit for each lighting category			
	Lighting Category 1	**Lighting Category 2**	**Lighting Category 3**	**Lighting Category 4**
Threshold Increment (TI)	15 per cent (based on adaption luminance of 0.1 cd/m2)	15 per cent (based on adaption luminance of 1 cd/m2)	15 per cent (based on adaption luminance of 2 cd/m2)	15 per cent (based on adaption luminance of 10 cd/m2)

Table E24.6.1.5 Pre-curfew luminous intensity limits

Intentionally illuminated area		Pre-curfew luminous intensity limit for each lighting category			
Size of area (based on the controlling dimension)	**Controlling dimension** (refer to Note 1)	**Lighting Category 1**	**Lighting Category 2**	**Lighting Category 3**	**Lighting Category 4**
Large	>75m	2,500 cd	7,500 cd	10,000 cd	25,000 cd
Medium	>25-<75	2,500 cd	7,500 cd	10,000 cd	25,000 cd
Small	<25m	2,500 cd	2,500 cd	7,500 cd	25,000 cd

Note 1 The controlling dimension is the maximum dimension from any light source to the furthest point of the intentionally illuminated area in the direction of maximum intensity.

Table E24.6.6 Curfew luminous intensity limits

Curfew Luminous Intensity Limit for each lighting category	Lighting Category 1	Lighting Category 2	Lighting Category 3	Lighting Category 4
	0 cd	500 cd	1,000 cd	2,500 cd

The average surface luminance measured in candelas per square metre (cd/m2) for an intentionally artificially lit building façade shall not exceed any one of the following:

	Lighting Category 1	Lighting Category 2	Lighting Category 3	Lighting Category 4
	0 cd/m2	5 cd/m2	10 cd/m2	25 cd/m2

TITLE	147-153 EDGEWATER DRIVE PAKURANGA	PROJECT # 225421	
CLIENT	AMBRIDGE ROSE APARTMENTS		

Designed	B.W.
Checked	B.W.
Date	26-09-2025
Scale	N.T.S

Obtrusive Light - Compliance Report

AUP E24 Report Residential Mixed Housing Suburban Zone Cat 3 (medium brightness) Pre Curfew
Filename: 147-153 Edgewater Drive Pakuranga - Obtrusive
26/09/2025 2:17:24 pm

Illuminance

Maximum Allowable Value: 100 Lux

Calculations Tested (4):

Calculation Label	Test Results	Max. Illum.
Obtrusive SEG_Ill_Seg1	**PASS**	0.41
Obtrusive SEG_Ill_Seg2	**PASS**	0.59
Obtrusive SEG_Ill_Seg3	**PASS**	0.96
Obtrusive SEG_Ill_Seg4	**PASS**	0.10

Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 1000 Cd
Control Angle: 83 Degrees

Luminaire Locations Tested (26)
Test Results: **PASS**

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 7500 Cd

Calculations Tested (4):

Calculation Label	Test Results
Obtrusive SEG_Cd_Seg1	**PASS**
Obtrusive SEG_Cd_Seg2	**PASS**
Obtrusive SEG_Cd_Seg3	**PASS**
Obtrusive SEG_Cd_Seg4	**PASS**

Threshold Increment (TI)

Maximum Allowable Value: 15 %

Calculations Tested (2):

Calculation Label	Adaptation Luminance	Test Results
Edgewater Drive Ti W	2	**PASS**
Edgewater Drive Ti E	2	**PASS**

Upward Waste Light Ratio (UWLR)

Maximum Allowable Value: 20.0 %

Calculated UWLR: 9.2 %
Test Results: **PASS**

Obtrusive Light - Compliance Report

AUP E24 Report Residential Mixed Housing Suburban Zone Cat 3 (medium brightness) Post Curfew
Filename: 147-153 Edgewater Drive Pakuranga - Obtrusive
26/09/2025 2:18:17 pm

Illuminance

Maximum Allowable Value: 10 Lux

Calculations Tested (4):

Calculation Label	Test Results	Max. Illum.
Obtrusive SEG_Ill_Seg1	**PASS**	0.41
Obtrusive SEG_Ill_Seg2	**PASS**	0.59
Obtrusive SEG_Ill_Seg3	**PASS**	0.96
Obtrusive SEG_Ill_Seg4	**PASS**	0.10

Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 1000 Cd
Control Angle: 83 Degrees

Luminaire Locations Tested (26)
Test Results: **PASS**

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 1000 Cd

Calculations Tested (4):

Calculation Label	Test Results
Obtrusive SEG_Cd_Seg1	**PASS**
Obtrusive SEG_Cd_Seg2	**PASS**
Obtrusive SEG_Cd_Seg3	**PASS**
Obtrusive SEG_Cd_Seg4	**PASS**

Threshold Increment (TI)

Maximum Allowable Value: 15 %

Calculations Tested (2):

Calculation Label	Adaptation Luminance	Test Results
Edgewater Drive Ti W	2	**PASS**
Edgewater Drive Ti E	2	**PASS**

Upward Waste Light Ratio (UWLR)

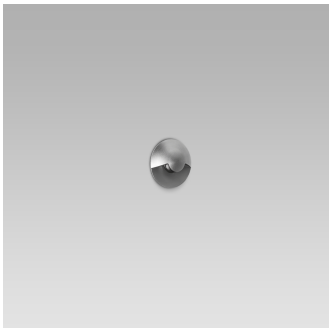
Maximum Allowable Value: 20.0 %

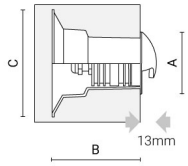
Calculated UWLR: 9.2 %
Test Results: **PASS**

THUNDER55

oneway

Arcluce Code	**0576015C-830-30**
Ex Code	
Code EAN	**8054378356131**





Technical information

Light source:	LED, 3000K, CRI>80
Luminaire efficacy:	23lm/W
Luminaire:	2W , 45lm
LED life time:	> 60000h - L80 - B20 (Ta 25°C)
High colour consistency:	< 3 SDCM
Power supply:	CC 700mA/3V
Wiring:	REM-D
Optics:	one way
Color:	Stainless Steel - 30
Weight:	0.41 kg
Size:	A: Ø 64mm B: 95mm C: 110mm

CE

IP68
1m

IK08

III

Appliance

- AISI 316L stainless steel body and trim.
- Silicone rubber gaskets.
- PMMA lenses for LEDs.
- PMMA transparent screen or in 5mm thermal-shock resistant tempered glass.
- High quality LED sources characterized according to IES TM-30, with high color consistency <3SDCM and long useful life >60000 hours at L80.

Installation

- Recessed installation.
- Supplied with recessed installation box made of engineering plastic.
- Other recessed installation boxes made of engineering plastic or of AISI 316L stainless steel available.
- Supplied with power cable (3m).

Note

- Available versions with Casambi and other modern control systems, for more information see "Light controls" section.

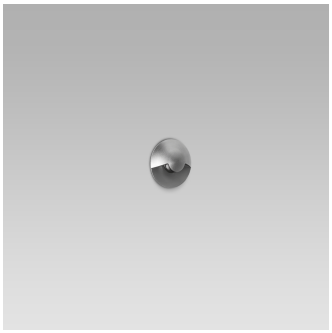
Norm

- It complies with standards EN 60598-1 and EN 60598-2-2.

THUNDER55

oneway

Arcluce Code	**0576015C-830-30**
Ex Code	
Code EAN	**8054378356131**



Specifications

The recessed wall luminaire for functional and scenographic outdoor lighting, featuring a small size, high versatility of use and excellent lighting performance. THUNDER55 is the perfect steplight for creating light paths in passageways and stairways.
AISI 316L stainless steel body and trim. Silicone rubber gaskets. PMMA lenses for LEDs. PMMA transparent screen or in 5mm thermal-shock resistant tempered glass. High quality LED sources characterized according to IES TM-30, with high color consistency <3SDCM and long useful life >60000 hours at L80.
It complies with standards EN 60598-1 and EN 60598-2-2.
LED sources available in color temperatures 3000K
High color consistency < 3 SDCM and LED life time > 60000h - L80 - B20 (Ta 25°C).
System effectiveness, minimum 23lm/W
Luminaire in insulation class III.
REMOTE DRIVER, NOT INCLUDED.
Recessed installation. Supplied with recessed installation box made of engineering plastic. Other recessed installation boxes made of engineering plastic or of AISI 316L stainless steel available.
Supplied with power cable (3m).
Available versions with Casambi and other modern control systems, for more information see "Light controls" section.
Brand ARCLUCE mod. THUNDER55

HOLOPHANE

Denver Elite Bollard Series

PRODUCT DESCRIPTION

The Denver™ Elite bollard combines a palette of design variables, which include aesthetic appeal, quality, durability and performance. The Denver™ Elite bollard is a modern aesthetic design that incorporate LED technology. Despite its stylised design the prismatic optical performance of the bollard is still industry leading offering a choice of distributions. The trilobe design profile with patent pending decorative light line membrane is a progression of everything we've learnt from our existing bollard whilst taking new technologies and environmental issues into consideration.

FEATURES & BENEFITS

Contemporary styling
Unique 'registered' tri-lobe design giving an aesthetic appeal that complements today's modern architecture

High Quality Construction
Durable and robust design via three securing rods and nuts. Fully weather sealed.

Single, Double or Triple lens
Unique lens layout that is suitable for a wide range of applications.

Cool to touch.
Product complies to BS ENISO, 13732-1

Available in 2 heights
Vandal resistent
Robust styling and build process. Patented tri-lobe design enables stability

IP Rated 659

05/02/2019

website: www.adlt.co.nz
phone: 07 579 0163
address: 8 Boeing Place, Mount Maunganui

Advanced LIGHTING TECHNOLOGIES

HOLOPHANE

Denver Elite Bollard Series

ORDERING INFORMATION

Code										
DEB	Denver™ Elite Bollard									
	Code	**Lamp Type** (required)								
	.L014	LED light engine producing c.1,000 lm with a nominal 4000K								
	.L024	LED light engine producing c.2,000 lm with a nominal 4000K								
		Code	**Distribution**							
		.PAY	Asymmetrical Distribution							
			Code	**Optical Enclosure**						
			.SU	Single Sided Asymmetric Distribution						
			.DO	Double Sided Bisymmetric Distribution						
			.TR	Triple Sided Symmetric Distribution						
				Code	**Head / Height**					
				.H75	750mm High					
				.H100	1000mm High					
					Code	**Colour** (required)				
					.C1	Smooth White (RAL 9016)				
					.C4	Textured Graphite (RAL 7011)				
					.C6	Smooth Grey (RAL 7035)				
					.C7	Black (RAL 9005)				
					.C9	Metallic Silver (RAL 9006)				
				.	RAL****	RAL Colour (customer choice)				
						Code	**Paint Finish**			
						.C	Enhanced Paint Finish			
							Code	**Cut Outs**		
							.MCB	Mini circuit breaker		
								Code	**Auxiliary Circuits**	
								.TW	Through Wiring option	
									Code	**Emergency**
									.ME1	3hr maintained emergency IP65
										Code **Screws**
										.V1 Vandal-resistant screws
Example	DEB	.26PL4	.LYA	.DO	.H75	.C9	.C	.MCB	.TW	.ME1	.V1

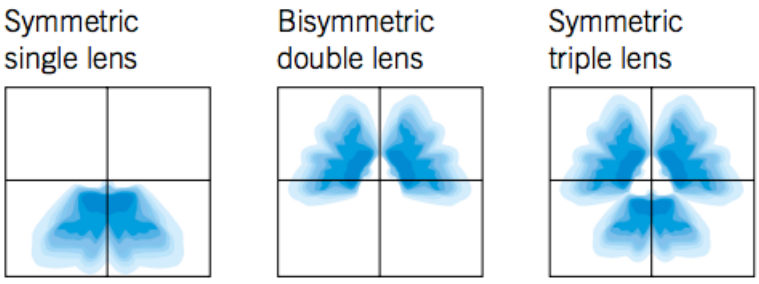
Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.

luminaire accessories

Code	
DBL.FT	Set of 3 Bolts M10 x 100mm for Flange Base Fixing
DEB.ROOT	Root Mounting Spike to fit Flange Base Denver™ Elite Bollard
DBL.VK	Vandal key for Denver™ Elite Bollard

DEnver Elite Bollard Series

LIGHT DISTRIBUTION



single lens | double lens | triple lens

SPECIFICATION

The luminaire shall consist of an extruded aluminium body, housing integral control gear for LED technology. The optical arrangement shall consist of a prismatic lens or prismatic lens with louvre.

The top tri-lobe gasket enabling the bollard to achieve EN60598-1 (patent pending) is secured between the top cap and body via three stainless steel nuts. Root mounted option available. The luminaire complies to EN60598 with a range of options and accessories.

TYPICAL LUMINAIRE PERFORMANCE

Configuration	Delivered Lumens	Power Consumption
DEB.L014	1000 lm	12W
DEB.L024	2000 lm	23W

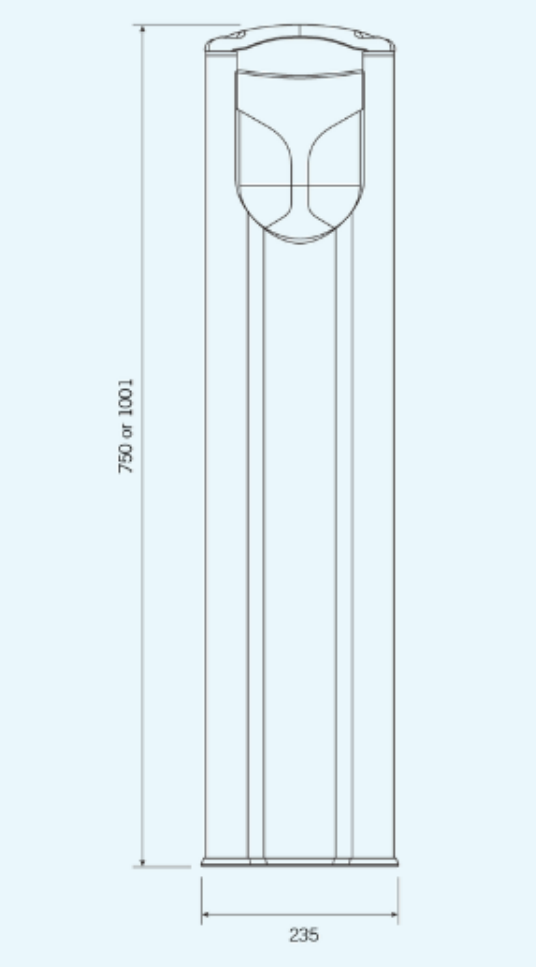
Note: Data is correct at time of print

LUMEN MAINTENANCE FACTORS

Ambient	Wattage	Initial LMF	25K hour projected[2] LMF	50K hour projected[2] LMF	75K hour projected[2] LMF	100K hour calculated[3] LMF
25°C	12W	1.0	0.98	0.95	0.92	0.88
	23W	1.0	0.95	0.88	0.84	0.78

Note: Data is correct at time of print

DIMENSIONS



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