MOLONEYFOX
CONSULTING ENGINEERS

PROJECT NO. 21.2262

PUBLIC LIGHTING

REALITY LIGHTING REPORT

CLIFDEN

CO. GALWAY

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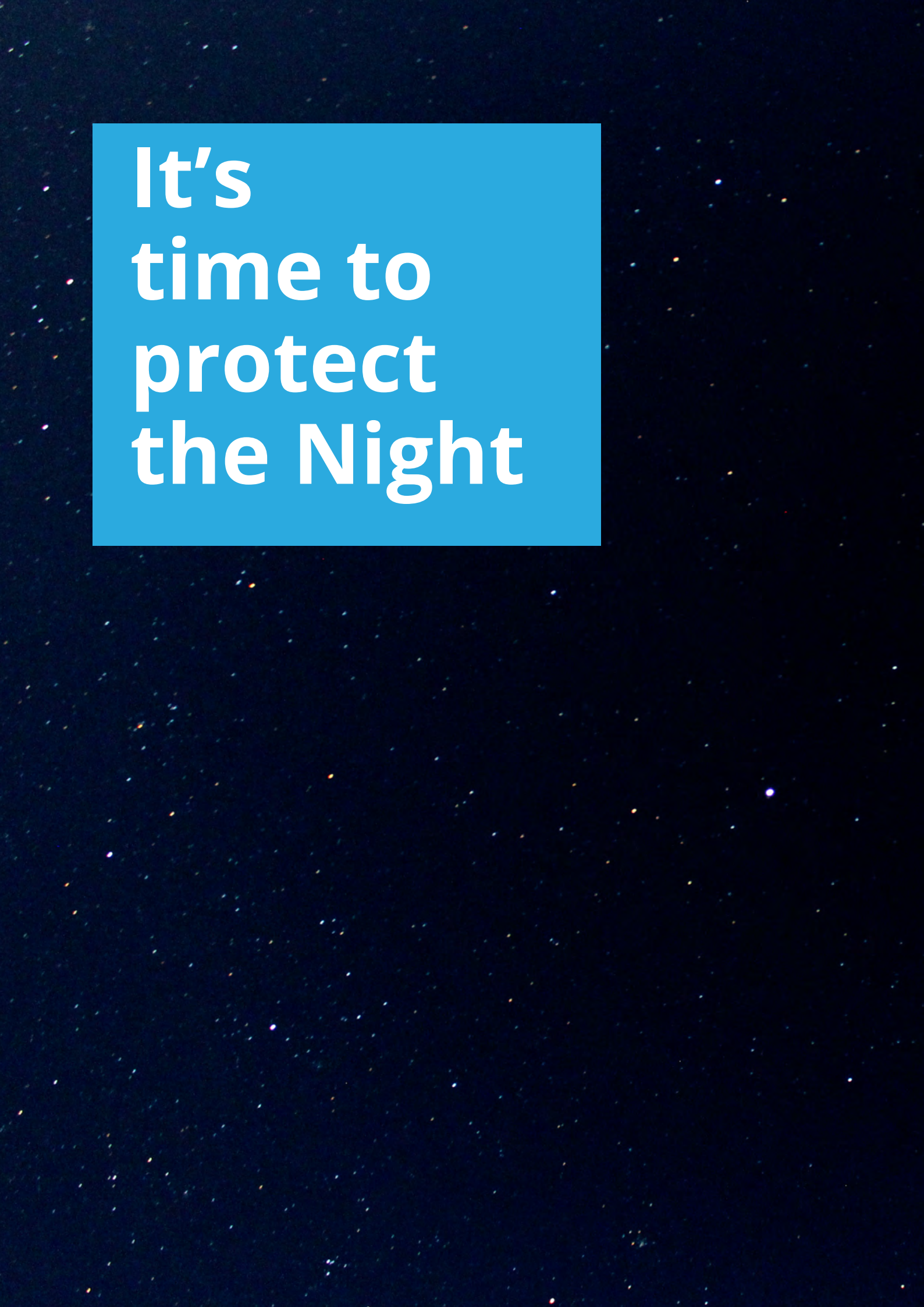

It’s
time to
protect
the Night

What is Light Pollution?

There is no doubt that artificial lighting has its place in our world and is invaluable to our businesses, homes, roads and recreation. However, when used inappropriately or excessively, artificial lighting can cause light pollution.

In broad terms, there are three types of light pollution:

skyglow

The pink or orange glow we see for miles around towns and cities, spreading into rural areas, caused by a scattering of artificial light by airborne dust and water droplets.

glare

The uncomfortable brightness of a light source when viewed directly.

light trespass

Light spilling beyond the boundary of the property on which a light is located, sometimes shining through windows and curtains of adjacent properties.

Why is it bad?

suppresses melatonin production

The impact of light pollution not only affects our view of starlight from above, but can interfere with our sleep patterns, circadian clock and melatonin production.

disappearing stars

In the UK over 80% of the population can no longer view The Milky Way from their home due to light pollution. In Ireland, over 45% of us have also lost sight of this natural night sky phenomenon and this figure is rising due to the increase in domestic, commercial and public lighting over recent years.

disruption of ecosystems

Wildlife, trees and insects are also affected by the interruption of our natural night and daylight cycles.

wasteful

Our nightscape is disappearing rapidly, yet it is a valuable asset; preserving it helps us save energy, enhances our biodiversity and benefits our mental and physical wellbeing.

Here in the West of Ireland, we have some naturally dark areas that are protected for future generations to enjoy. In 2016 Mayo International Dark Sky Park featuring Ballycroy National Park and Wild Nephin received a gold tier International award for the quality of the night skies, free from light pollution.

This project shows how artificial lighting is affecting county Mayo, **highlighting areas** of **quality dark skies** as well as **areas affected** by **light pollution**.

The good news is that light pollution is one of the easiest pollutants to address.

The first step is to raise awareness of this growing issue and identify where lighting improvements or adjustments could be made to reduce its impact.

Why does artificial lighting cause light pollution?

Public Lighting (Street lights)

Full cut-off (FCO) lighting fixtures prevent light being wasted into the sky and are becoming increasingly popular due to their efficiency and because they are better directed. By full cut-off we mean that light is not radiated above the horizontal at the light source. The effects of non-cut off streetlights are shown on the illustration.

LEDs (Light-emitting Diodes)

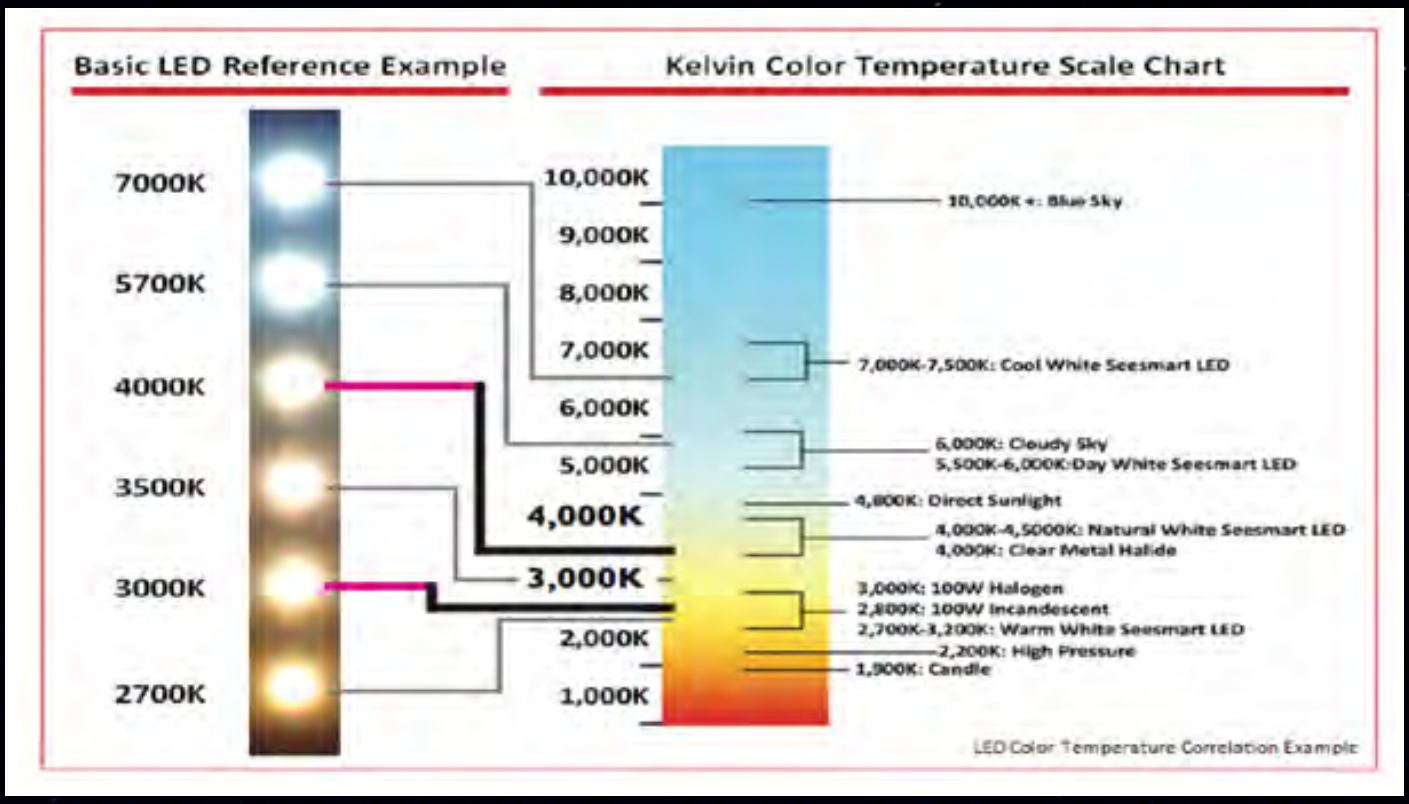
Artificial lighting is undergoing a radical worldwide change toward high intensity LEDs (Light-emitting Diodes). These appear to have many advantages: cheap, energy-efficient and easily controlled; however, there is an increasing body of research emerging that indicates a need for consideration and consultation before LEDs with a high colour temperature (more blue-rich) are widely installed.

Blue-rich Light

Many LEDs produce harsh blue-white light. This blue-white light reflects from grass and foliage and scatters high into the atmosphere, causing more than five times more sky-glow than previous warm orange (low colour-temperature) lights. The benefits of otherwise good downward direction of light may be negated by blue-richness, over-brightness and glare. In some cases, this causes light pollution with consequences for biodiversity and wellbeing.

Light colour

Light colour is normally given by the equivalent temperature a body would be heated to in order to provide the same colour. To avoid sky-glow, streetlights should have a colour temperature of 2700K or less as a default specification. New technology such as narrow-band amber lighting (as recommended by the National Optical Astronomy Observatory) are good alternatives for energy efficiency as well as lower ecological impact, such as their effect on nocturnal animals such as bats.



Environmental Zoning

There are many solutions available to local authorities for the management of light pollution. Many local authorities in the UK have adopted Environmental Zones to classify appropriate lighting levels for designated areas such as in the table below.

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	International Dark Sky areas, UNESCO Starlight Reserves - No Lighting
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty, etc
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town & City centres with high levels of night time activity

Why Ireland should take light pollution seriously in planning and policy for artificial lighting:

Light output from Ireland nearly doubled in the two decades to 2014.

95% of the country the night sky is degraded towards the horizon.

5% of the country which still has pristine skies should be protected as a resource, including for tourism.

84% of the country and **40%** of the population is under skies which are 1.5 times brighter than natural levels where even the sky directly overhead appears noticeably affected by light pollution.

45% of the population lives under skies 5 times brighter than normal, and where the Milky Way cannot be seen, even when directly overhead.

18% of the Irish population uses daytime (colour) vision at night due to light pollution.

Under overcast conditions, cities and towns with strong upward light pollution have a much higher level of light even in areas which are not directly lit. This is due to the reflection of upward-going radiation back to the ground.

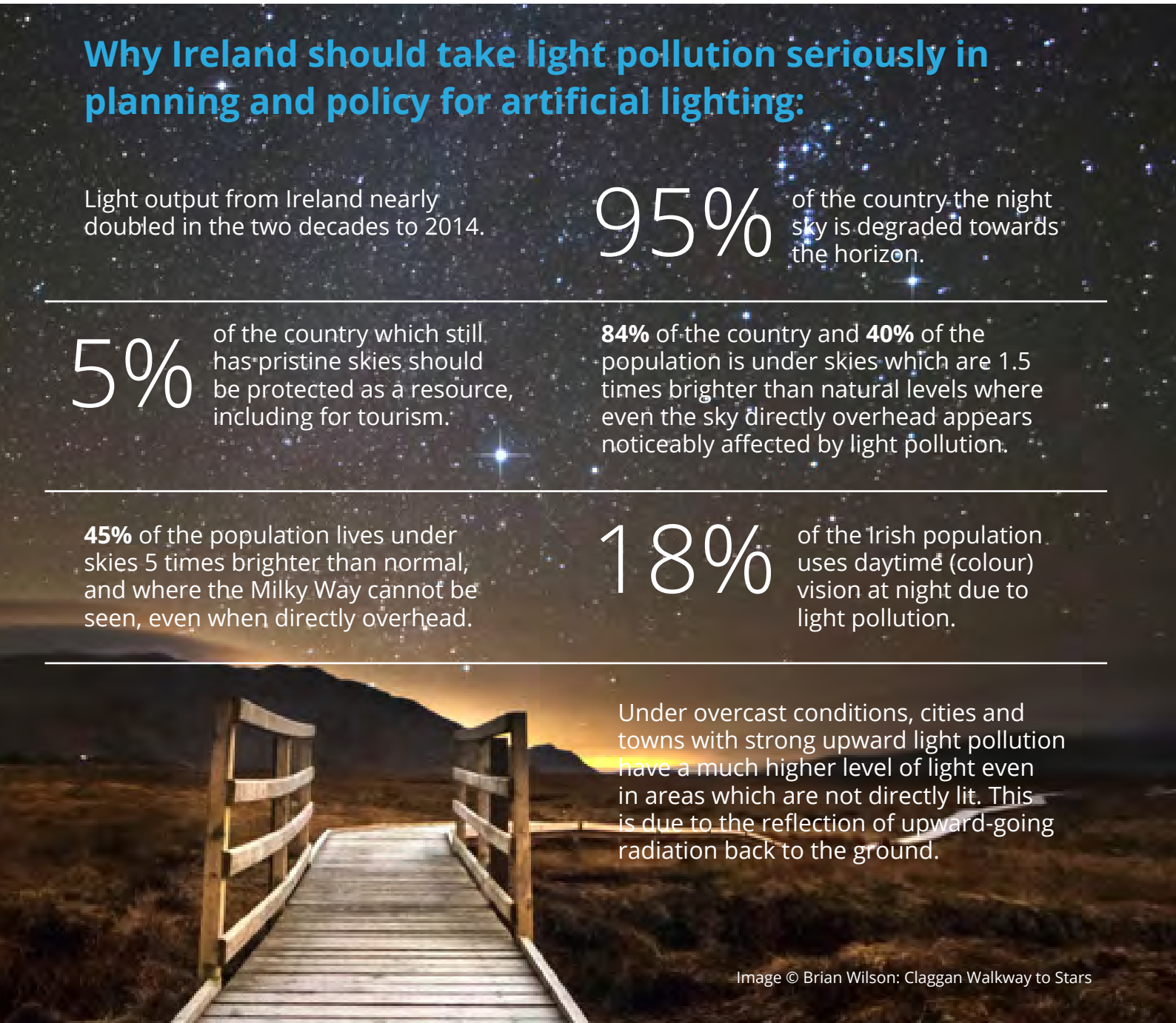


Image © Brian Wilson: Claggan Walkway to Stars

Image © Brian Wilson

Facts and Figures

In the Republic there are more than **420,000 public lights**, consuming **485 GWh** of primary energy annually*

Public lighting consumes up to

35%

of a Local Authority's total energy use *

Nearly all public lighting is on from dusk to dawn, and 98% of the electricity use is unmetered

Roughly

30%

of the energy used for public lighting is lost due to inefficiencies

Annual cost of public lighting is over

€56 million

accounting for

110,000 tonnes CO_2 produced*

In **county Mayo** approximately

€1 million

per annum is currently spent on unmetered street lighting

Recommendations for local authorities:

Preserving Dark Skies: Local authorities should not favour new lighting in existing dark areas, unless essential as part of a new development or clearly demonstrated for public safety.

Local authorities should give careful consideration to the type of LED (Light-Emitting Diodes) used in public lighting and the potential impacts that higher temperature **blue-rich lighting** has on ecology and on human health.

New street lighting should be **tested 'in situ'** before a lighting scheme is installed in a wider area to ensure that it is the minimum required for the task and does not cause a nuisance to residents.

We encourage local authorities to investigate how **part-night** lighting schemes (e.g. switching off between midnight and 5am) or dimming could work in their areas, including examining the cost, energy and carbon savings. This should be done in full consultation with the local community.

Local authorities should consider adopting **Environmental Lighting Zones** into their lighting policy to ensure that the appropriate lighting levels are used in each zone, with very strict requirements applying in identified dark areas.

Local authorities should lead by example and ensure all **public buildings** and car parks do not create light pollution or light trespass.

Local authorities should have a policy to control light pollution in their **Local Development Plan**. This policy should include identifying existing dark areas that need protecting.

Domestic and commercial Lighting

Floodlights are expensive to run and very inefficient, shining light over a wide area rather than just where it is required and, in some cases, creating dark shadows in the illuminated areas. Home security lights are often 10-20 times the power required in a typical domestic setting - 150w being more than sufficient in most cases.

Unshielded bulkhead lighting (wall packs) should be avoided, since the majority of the light actually shines into people's eyes, causing glare, which can actually make an area less visible and also light pollution and light trespass.

Brightness of bulb

Traditionally most people are used to buying light bulbs (lamps) with the light output graded in units of watts (W). Watts are a measure of electrical power, not light intensity, though in the days when most bulbs were of the incandescent (tungsten) variety it provided a means for comparison. With a larger range of lamp types, a better measure is the 'lumen' (lm) output of a bulb as provided by the manufacturer. This is a measure of the total amount of light emitted from a source that lies in the most sensitive part of our vision.

Dark Sky Friendly domestic lighting should be no more than 600 lumens.

The conversion table below identifies the approximate lumen output emitted from light sources of varying wattages. Note that more efficient lamps emit the same amount of light with less electricity used.

Approximate lumen output emitted from light sources of varying wattages

BRIGHTNESS (lumen)	220+	400+	700+	900+	1300+
Standard Bulb	25 W	40 W	60 W	75 W	100 W
Halogen Bulb	18 W	28 W	42 W	53 W	70 W
CFL Bulb	6 W	9 W	12 W	15 W	20 W
LED Bulb	4 W	6 W	10 W	13 W	18 W
Light Bulbs		<600 is better			

Irish Facts and Figures

16%

of residential electricity is used for lighting, equivalent to 195W or 20% of an electricity "unit" ≈ similar to the energy of a modern wide-screen tv

Domestic lighting costs

€233 million

annually, equivalent to

71k tonnes of CO_2

Per household costs for lighting are

€230/year, ≈5 kg CO_2

Recommendations for Domestic/Commercial Lighting:

Low wattage, well-directed lights save money and do a better job.

Home security lights – less than 600 lumens and maximum 150W (higher power creates more glare & dark shadows)

Shielded fixtures so light does not escape above the horizontal - Unshielded bulkhead lights, no matter their luminosity, should never be installed.

LED Lighting – chose warm colour tones e.g. “warm-white” (less than 2,700 kelvins)

Consider using a Passive Infra Red (PIR) motion sensor light to illuminate an area only when needed.

Angle the light downwards, make sure it only illuminates your property and does not trespass to your neighbour.

Do not “over” light. This is a major cause of obtrusive light and is a waste of energy.

Dim or switch off lights when the task is finished. Generally a lower level of lighting will enhance the night time scene required for safety and security.

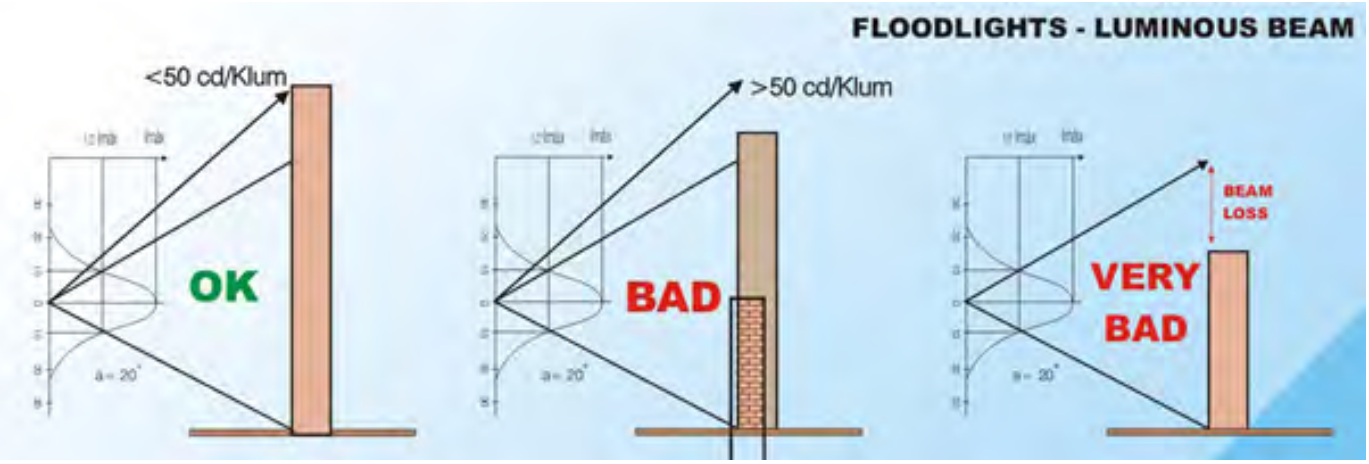
Ensure that fully-shielded outside lighting is used.

Heritage /Facade Lighting for Public buildings

The use of artificial lighting, particularly flood lighting, on historical heritage buildings can be excessive and a significant contributor to light pollution and light waste. In some cases the architectural beauty of the buildings design is literally overshadowed by excessive lighting and some poorly placed light fittings can have an adverse impact on wildlife and natural heritage.

Ornamental lighting of public buildings, monuments and public spaces must prevent light from falling beyond the area intended to be lit, and should never be directed skywards. Architecturally sensitive tones such as passive, warm coloured lights should be considered before blue-rich white lights, and only where deemed necessary.

Lights should be adapted to the size and location of the object intended to be lit. If necessary, visors, shields, deflectors and cowls should be installed to guarantee lighting is limited to only the area of focus (see illustration below).



Considerations for Lighting Heritage/Public Buildings:

Many heritage buildings were designed with natural light levels in mind. Consider the distance and general direction from which the object is observed.

Possible inconveniences to other users of the surrounding area (intrusive light, glare).

Consideration for Wild life (eg. Bats, Moths, Swifts, Fish and other species impacted by artificial lighting).

Ornamental lighting position, aiming and optics.

Lighting levels according to recommendations and the colour of the object to be lit.

Energy saving and installation switch-off.

It's time to protect the Night

Project Manager & Author:

Georgia MacMillan, Mayo Dark Skies Community Group

Data and statistics:

Prof. Brian Espey, School of Physics, Trinity College Dublin

Mapping and document presentation:

LUC (www.landuse.co.uk)

Mayo Dark Skies

Mayo Dark Skies is a member of Climate Ambassador Programme & Leave No Trace Ireland

CLIMATE AMBASSADOR

IRELAND leave no trace

This project has been funded by The Heritage Council

An Chomhairle Oidhreachta
The Heritage Council

For more information on citizen science projects on light pollution and for responsible lighting guidelines please contact:

@ mayodarksky@gmail.com

or

www.facebook.com/mayodarkskies

For more information on Mayo Dark Sky Park:

www.MayoDarkSkyPark.ie

Sources:

https://www.britastro.org/dark-skies/pdfs/CfDS1410_E_Good_Lighting_Guide.pdf

http://www.cpre.org.uk/resources/countryside/dark-skies/item/3776-shedding-light-leaflet

http://www.northumberlandnationalpark.org.uk/wp-content/uploads/2016/03/NNP-outside-lighting-guide.pdf

London Borough of Camden – Equality Impact Assessment (Change of LED Street Lighting) 2013

Practical Guide for Outdoor Lighting – Sky Quality Protection Technical Offices of Chile y Canarias

Falchi et al. 2016 "The New World Atlas of Artificial Night Sky Brightness" http://advances.sciencemag.org/content/2/6/e1600377.full

Statistics on light pollution levels and public lighting provided by Prof Brian Espey, School of Physics, Trinity College Dublin

* Public ligthing figures published by SEAI 2012 & 2017

DATE:	**21 November 2023**
DESIGNER:	**Dan Staunton**
PROJECT No:	**23-09-21-01A**
PROJECT NAME:	**Clifden Town Centre**

Clifden Town Centre Public Realm

IS EN 13201-2:2015 / BS 5489-1:2020
Arrival Zones 1, 2 & 3 - Roads : Class C1
Arrival Zones 1, 2 & 3 - Paths : Class P1 **
Market Street, R341, Bridge Street : Class C2
Market Street - Paths, R341 - Paths, Market Hill : Class P1
Path / Steps : Class P1 / C2
Beach Road - Class P2
Harbour Park Walkway - Class P4**

IS EN 12464-2:2014
Carpark - Medium Traffic

*** Exceeds maximum average of 1.5 x recommended value for lighting class.

Outdoor Lighting Report

Based on:
Lumen Output at 100,000 hours
Spot Lamp Replacement
Normal Environment
6 Year Cleaning Cycle
Ground is Level

PREPARED BY:

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Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Arrival Zone 1 - Road	509.23	356.04	62.74	78.49	1.49	1.48
2	Arrival Zone 2	663.89	445.06	53.23	58.69	1.48	1.47
3	Arrival Zone 3	758.06	287.88	77.14	74.08	1.48	1.48
4	Arrival Zone 1 - Paths	509.53	356.28	62.50	92.69	1.49	1.49
5	Market Street	572.02	285.24	186.18	119.47	1.49	1.49
6	Market Street Paths	571.88	290.14	282.36	124.62	1.49	1.48
7	R341	571.90	413.61	91.92	90.17	1.48	1.48
8	R341 - Paths	571.87	413.66	91.92	90.17	1.48	1.48
9	Arrival Zone 2 - Paths	663.93	445.08	53.39	58.84	1.48	1.47
10	Bridge Street	711.48	362.08	98.41	92.17	1.49	1.49
11	Market Hill	607.81	333.31	155.11	109.83	1.49	1.48
12	Path	690.63	205.86	72.35	104.03	1.48	1.49
13	Beach Road	12.12	10.77	171.84	257.54	1.49	1.50
14	Carpark	173.32	296.15	32.21	21.43	1.46	1.43
15	Harbour Park Walkway	184.59	248.91	160.27	139.41	1.50	1.50
16	Isolines	13.00	7.09	864.37	555.57	3.46	2.22
17	Seaview	443.61	364.25	65.77	55.14	1.49	1.49

Luminaires

Luminaire A Data

Supplier	
Type	Veelite Rys Projector 54w LED wide Beam Symmetric C12
Lamp(s)	2LED 4000K 700mA
Lamp Flux (klm)	5.38
File Name	5RYS27LGA-C12 - Rys 2LED 54w 4K Wide.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	44.0, 29.8, 0.0
No. in Project	30

Luminaire B Data

Supplier	
Type	Veelite Atina Series 136w LED Street Optic A10
Lamp(s)	64LED 4000K 700mA
Lamp Flux (klm)	17.48
File Name	5ATB16GLA-A10.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	754.6, 119.2, 0.0
No. in Project	7

Luminaire C Data

Supplier	
Type	Veelite Atina Series 136w LED Forward Throw Optic A14
Lamp(s)	64LED 4000K 700mA
Lamp Flux (klm)	17.49
File Name	5TCB15GLA-A14.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	520.3, 206.1, 0.0
No. in Project	24

Luminaire D Data

Supplier	
Type	Veelite Kassio Bollard 26w LED Asymmetric A13
Lamp(s)	16LED 4000K 500mA
Lamp Flux (klm)	3.27
File Name	5KAS00016-A13.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	609.4, 983.7, 81.9
No. in Project	10

Luminaires

Luminaire E Data

Supplier	
Type	Veelite Atina series 52w LED Street Optic A10
Lamp(s)	24LED 4000K 700mA
Lamp Flux (klm)	6.56
File Name	5ATA12GLA-A10.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	754.6, 119.2, 0.0
No. in Project	13

Luminaire F Data

Supplier	
Type	Veelite Atina Series 19w LED Street Optic A10
Lamp(s)	8LED 4000K 700mA
Lamp Flux (klm)	2.19
File Name	5TCA10GLA-A10.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	754.6, 119.2, 0.0
No. in Project	1

Luminaire G Data

Supplier	
Type	Veelite Kassio Bollard 19w LED Forward Throw Optic A14
Lamp(s)	8LED 4000K 700mA
Lamp Flux (klm)	2.19
File Name	5KAS00012-A14.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	464.2, 543.3, 322.5
No. in Project	4

Luminaire H Data

Supplier	
Type	Veelite Kassio Bollard 10w LED Asymmetric A13
Lamp(s)	8LED 4000K 350mA
Lamp Flux (klm)	1.19
File Name	5KAS00010-A13.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	609.4, 983.7, 81.9
No. in Project	22

Luminaire I Data

Supplier	
Type	Veelite Margen Wall 6w LED Symmetric 38° x 86°
Lamp(s)	LED 4000K
Lamp Flux (klm)	0.86
File Name	G6503.AHXA400 Margen Wall 6W LED 4K Sym.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	12.9, 3.9, 1.1
No. in Project	30

Luminaire J Data

Supplier	
Type	Veelite Atina Series 27w LED Street Optic A10
Lamp(s)	12LED 4000K 700mA
Lamp Flux (klm)	3.28
File Name	5ATA10GLA-A10.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	754.7, 119.2, 0.0
No. in Project	11

Luminaire K Data

Supplier	
Type	Veelite Sportslite 6 400w Optic A Asymmetric Wide Beam
Lamp(s)	5050 LED 5000K Ra70
Lamp Flux (klm)	57.38
File Name	5SBS00401-A.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	131.8, 13.8, 0.0
No. in Project	5

Layout

ID /Mast	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
1	A	545.54	394.92	9.50	124.00	25.00	0.00	0.00	100%			
2	A	545.57	394.54	9.00	216.00	20.00	0.00	0.00	100%			
3	A	545.90	395.38	8.50	85.00	20.00	0.00	0.00	100%			
4	A	546.34	395.02	8.00	32.00	20.00	0.00	0.00	100%			
5	A	529.12	408.01	9.50	5.00	20.00	0.00	0.00	100%			
6	A	528.79	407.63	9.00	311.00	20.00	0.00	0.00	100%			
7	A	528.65	408.14	8.50	37.00	20.00	0.00	0.00	100%			
8	A	528.22	407.37	8.00	257.00	20.00	0.00	0.00	100%			
9	A	546.17	394.51	7.50	353.00	20.00	0.00	0.00	100%			
10	B	601.85	376.75	10.00	234.00	0.00	0.00	0.60	100%			
11	A	528.26	407.76	7.50	286.00	20.00	0.00	0.00	100%			
12	C	581.96	448.49	10.00	294.00	0.00	0.00	0.60	100%			
13	C	508.56	386.94	10.00	97.00	0.00	0.00	0.60	100%			
14	C	550.97	376.86	10.00	82.00	0.00	0.00	0.60	100%			
15	C	572.87	371.82	10.00	61.00	0.00	0.00	0.60	100%			
16	C	569.83	420.58	10.00	119.00	0.00	0.00	0.60	100%			
17	B	535.20	427.40	10.00	36.00	0.00	0.00	0.60	100%			
18	C	616.85	445.09	10.00	112.00	0.00	0.00	0.60	100%			
19	A	682.98	470.39	9.50	74.00	20.00	0.00	0.00	100%			
20	A	683.31	470.20	9.00	55.00	20.00	0.00	0.00	100%			
21	A	683.38	469.82	8.50	339.00	20.00	0.00	0.00	100%			
22	A	682.55	470.35	8.00	130.00	20.00	0.00	0.00	100%			
23	A	682.75	469.84	7.50	158.00	20.00	0.00	0.00	100%			
24	B	694.27	455.98	10.00	47.00	20.00	0.00	0.60	100%			
25	A	699.61	490.20	9.50	74.00	20.00	0.00	0.00	100%			
26	A	699.70	489.82	9.00	0.00	20.00	0.00	0.00	100%			
27	A	699.21	489.93	8.50	223.00	20.00	0.00	0.00	100%			
28	A	699.32	489.41	8.00	215.00	20.00	0.00	0.00	100%			
29	A	698.70	489.97	7.50	231.00	20.00	0.00	0.00	100%			
30	C	660.64	460.57	10.00	112.00	0.00	0.00	0.60	100%			
31	C	716.17	480.57	10.00	112.00	0.00	0.00	0.60	100%			
32	C	711.53	441.57	10.00	55.00	0.00	0.00	0.60	100%			
33	A	794.47	314.78	9.50	0.00	20.00	0.00	0.00	100%			
34	A	794.47	315.44	9.00	99.00	20.00	0.00	0.00	100%			
35	A	794.54	314.29	8.50	325.00	20.00	0.00	0.00	100%			
36	A	794.03	315.21	8.00	144.00	20.00	0.00	0.00	100%			

Layout Continued

ID /Mast	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
37	A	793.98	314.76	7.50	180.00	20.00	0.00	0.00	100%			
38	A	802.52	332.13	9.50	142.00	20.00	0.00	0.00	100%			
39	A	802.52	331.51	9.00	164.00	20.00	0.00	0.00	100%			
40	A	802.52	331.08	8.50	210.00	20.00	0.00	0.00	100%			
41	A	802.90	331.86	8.00	51.00	20.00	0.00	0.00	100%			
42	A	802.98	331.31	7.50	276.00	20.00	0.00	0.00	100%			
43	C	767.91	310.16	10.00	87.00	0.00	0.00	0.60	100%			
44	B	799.18	295.03	10.00	0.00	0.00	0.00	0.60	100%			
45	B	786.85	350.29	10.00	10.00	0.00	0.00	0.60	100%			
46	C	738.81	309.02	10.00	88.00	0.00	0.00	0.60	100%			
47	C	708.17	309.81	10.00	86.00	0.00	0.00	0.60	100%			
48	C	677.96	316.80	10.00	76.00	0.00	0.00	0.60	100%			
49	C	646.70	326.35	10.00	59.00	0.00	0.00	0.60	100%			
50	C	621.60	343.19	10.00	59.00	0.00	0.00	0.60	100%			
51	C	593.34	360.91	10.00	59.00	0.00	0.00	0.60	100%			
52	C	571.30	415.04	10.00	234.00	0.00	0.00	0.60	100%			
53	C	530.44	382.25	10.00	82.00	0.00	0.00	0.60	100%			
54	C	631.82	472.04	10.00	293.00	0.00	0.00	0.60	100%			
55	C	745.15	433.13	10.00	219.00	0.00	0.00	0.60	100%			
56	D	737.69	419.05	1.50	55.00	0.00	0.00	0.30	100%			
57	D	757.29	398.88	1.50	55.00	0.00	0.00	0.30	100%			
58	E	613.75	427.87	6.00	24.00	0.00	0.00	0.60	100%			
59	E	618.72	408.10	6.00	36.00	0.00	0.00	0.60	100%			
60	E	642.55	392.56	6.00	65.00	0.00	0.00	0.60	100%			
61	E	664.59	383.45	6.00	84.00	0.00	0.00	0.60	100%			
62	E	684.02	380.07	6.00	81.00	0.00	0.00	0.60	100%			
63	E	707.47	378.98	6.00	91.00	0.00	0.00	0.60	100%			
64	E	733.61	385.31	6.00	278.00	0.00	0.00	0.60	100%			
65	E	756.61	391.14	6.00	308.00	0.00	0.00	0.60	100%			
66	E	684.22	368.87	6.00	81.00	0.00	0.00	0.60	100%			
67	E	715.38	372.98	6.00	167.00	0.00	0.00	0.60	100%			
68	D	692.81	355.80	1.50	354.00	0.00	0.00	0.30	100%			
69	D	689.87	336.00	1.50	354.00	0.00	0.00	0.30	100%			
70	E	696.69	295.19	6.00	354.00	0.00	0.00	0.60	100%			
71	E	726.24	280.25	6.00	252.00	0.00	0.00	0.60	100%			
72	E	715.17	289.91	6.00	169.00	0.00	0.00	0.60	100%			

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Layout Continued

ID /Mast	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
73	D	714.72	271.19	1.50	354.00	0.00	0.00	0.30	100%			
74	D	717.32	260.44	1.50	213.00	0.00	0.00	0.30	100%			
75	D	727.84	248.80	1.50	213.00	0.00	0.00	0.30	100%			
76	D	736.72	240.10	1.50	213.00	0.00	0.00	0.30	100%			
77	D	745.31	228.13	1.50	231.00	0.00	0.00	0.30	100%			
78	D	757.35	222.46	1.50	217.00	0.00	0.00	0.30	100%			
79	C	677.79	486.56	10.00	297.00	0.00	0.00	0.60	100%			
80	B	797.72	401.74	10.00	237.00	0.00	0.00	0.60	100%			
81	B	782.30	388.52	10.00	353.00	0.00	0.00	0.60	100%			
82	C	767.28	417.60	10.00	237.00	0.00	0.00	0.60	100%			
83	G	180.95	315.18	1.50	274.00	0.00	0.00	0.30	100%			
84	G	196.31	298.84	1.50	87.00	0.00	0.00	0.30	100%			
85	G	191.86	315.76	1.50	273.00	0.00	0.00	0.30	100%			
86	H	214.67	296.44	1.50	90.00	0.00	0.00	0.30	100%			
87	H	210.37	316.77	1.50	1.00	0.00	0.00	0.30	100%			
88	G	186.50	298.51	1.50	90.00	0.00	0.00	0.30	100%			
89	F	204.63	307.85	6.00	184.00	0.00	0.00	0.50	100%			
90	H	231.63	351.19	1.50	292.00	0.00	0.00	0.30	100%			
91	H	263.74	364.99	1.50	292.00	0.00	0.00	0.30	100%			
92	H	238.29	292.76	1.50	90.00	0.00	0.00	0.30	100%			
93	H	260.88	299.00	1.50	121.00	0.00	0.00	0.30	100%			
94	H	278.33	306.60	1.50	117.00	0.00	0.00	0.30	100%			
95	H	297.80	316.38	1.50	126.00	0.00	0.00	0.30	100%			
96	H	308.81	336.57	1.50	171.00	0.00	0.00	0.30	100%			
97	H	315.78	353.89	1.50	137.00	0.00	0.00	0.30	100%			
98	I	277.38	368.64	0.30	273.00	90.00	0.00	0.00	100%			
99	H	247.52	358.06	1.50	292.00	0.00	0.00	0.30	100%			
100	I	280.97	368.60	0.30	270.00	90.00	0.00	0.00	100%			
101	I	284.13	368.16	0.30	251.00	90.00	0.00	0.00	100%			
102	I	273.38	368.02	0.30	273.00	90.00	0.00	0.00	100%			
103	I	287.43	367.43	0.30	256.00	90.00	0.00	0.00	100%			
104	I	290.49	366.37	0.30	236.00	90.00	0.00	0.00	100%			
105	I	293.51	364.82	0.30	231.00	90.00	0.00	0.00	100%			
106	I	295.90	363.42	0.30	241.00	90.00	0.00	0.00	100%			
107	I	298.50	361.93	0.30	248.00	90.00	0.00	0.00	100%			
108	I	301.97	361.82	0.30	282.00	90.00	0.00	0.00	100%			

Layout Continued

ID /Mast	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
109	I	303.53	363.53	0.30	339.00	90.00	0.00	0.00	100%			
110	I	303.79	367.48	0.30	350.00	90.00	0.00	0.00	100%			
111	I	305.30	370.96	0.30	297.00	90.00	0.00	0.00	100%			
112	I	309.32	373.67	0.30	273.00	90.00	0.00	0.00	100%			
113	I	313.91	373.64	0.30	259.00	90.00	0.00	0.00	100%			
114	I	317.92	370.66	0.30	225.00	90.00	0.00	0.00	100%			
115	I	319.34	366.20	0.30	172.00	90.00	0.00	0.00	100%			
116	I	320.70	365.33	0.30	334.00	90.00	0.00	0.00	100%			
117	I	320.50	368.59	0.30	358.00	90.00	0.00	0.00	100%			
118	I	319.24	371.35	0.30	44.00	90.00	0.00	0.00	100%			
119	I	317.22	373.51	0.30	50.00	90.00	0.00	0.00	100%			
120	I	314.42	374.97	0.30	66.00	90.00	0.00	0.00	100%			
121	I	311.05	375.43	0.30	90.00	90.00	0.00	0.00	100%			
122	I	307.28	374.46	0.30	111.00	90.00	0.00	0.00	100%			
123	I	304.52	372.36	0.30	125.00	90.00	0.00	0.00	100%			
124	I	302.02	369.63	0.30	129.00	90.00	0.00	0.00	100%			
125	I	297.83	367.61	0.30	93.00	90.00	0.00	0.00	100%			
126	I	293.39	368.56	0.30	61.00	90.00	0.00	0.00	100%			
127	I	291.03	370.71	0.30	32.00	90.00	0.00	0.00	100%			
128	I	289.66	373.82	0.30	25.00	90.00	0.00	0.00	100%			
129	H	222.93	284.79	1.50	10.00	0.00	0.00	0.30	100%			
130	H	228.16	264.76	1.50	37.00	0.00	0.00	0.30	100%			
131	H	248.78	261.92	1.50	125.00	0.00	0.00	0.30	100%			
132	H	263.83	274.15	1.50	125.00	0.00	0.00	0.30	100%			
133	H	278.91	285.75	1.50	125.00	0.00	0.00	0.30	100%			
134	H	293.07	295.14	1.50	125.00	0.00	0.00	0.30	100%			
135	H	300.24	307.26	1.50	172.00	0.00	0.00	0.30	100%			
136	J	174.14	267.37	6.00	191.00	0.00	0.00	0.60	100%			
137	J	174.53	247.37	6.00	162.00	0.00	0.00	0.60	100%			
138	J	166.00	227.63	6.00	139.00	0.00	0.00	0.60	100%			
139	J	153.82	212.71	6.00	139.00	0.00	0.00	0.60	100%			
140	J	138.80	195.48	6.00	139.00	0.00	0.00	0.60	100%			
141	J	122.76	176.63	6.00	139.00	0.00	0.00	0.60	100%			
142	J	106.85	157.62	6.00	139.00	0.00	0.00	0.60	100%			
143	J	98.35	147.89	6.00	153.00	0.00	0.00	0.60	100%			
144	J	79.50	116.64	6.00	159.00	0.00	0.00	0.60	100%			

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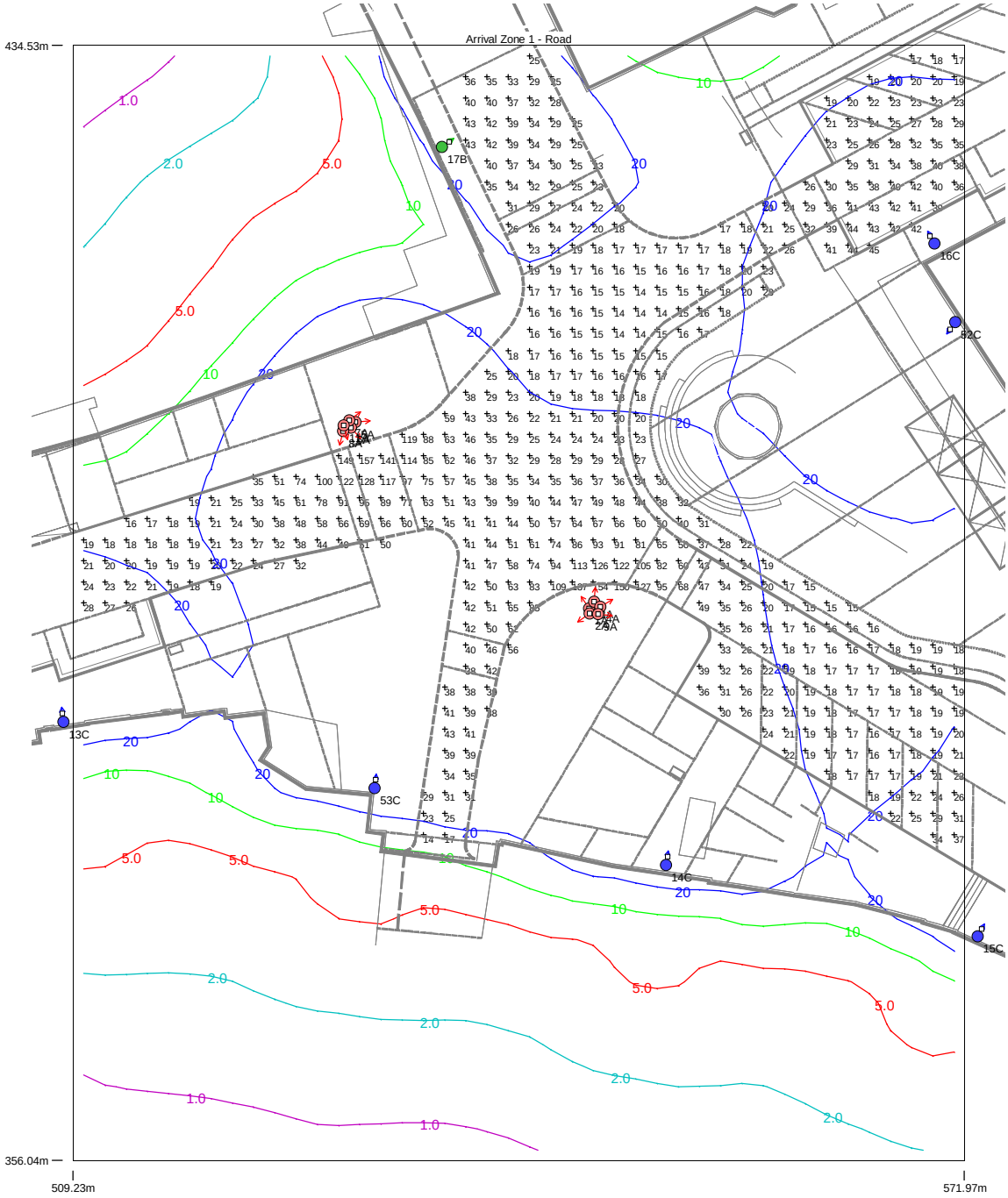
Layout Continued

ID /Mast	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
145	J	77.02	91.67	6.00	168.00	0.00	0.00	0.60	100%			
146	J	73.97	65.23	6.00	168.00	0.00	0.00	0.60	100%			
147	K	211.40	295.93	10.00	210.00	5.00	0.00	0.60	0%			
148	K	176.38	294.69	10.00	334.00	5.00	0.00	0.60	0%			
149	K	176.94	277.60	10.00	30.00	5.00	0.00	0.60	0%			
150	K	211.97	278.97	10.00	154.00	5.00	0.00	0.60	0%			
151	K	212.44	278.99	10.00	72.00	0.00	0.00	0.60	0%			
152/1	H	175.47	303.15	1.50	90.00	0.00	0.00	1.00	100%			
153/1	H	175.47	303.15	1.50	270.00	0.00	0.00	1.00	100%			
154/2	H	213.18	335.69	1.50	342.00	0.00	0.00	1.00	100%			
155/2	H	213.18	335.69	1.50	162.00	0.00	0.00	1.00	100%			
156	C	483.08	399.94	10.00	283.00	0.00	0.00	0.60	100%			
157	C	463.86	375.44	10.00	97.00	0.00	0.00	0.60	100%			

Horizontal Illuminance (lux)

Arrival Zone 1 - Road



Results

Eav	34.22
Emin	13.97
Emax	157.11
Emin/Emax	0.09
Emin/Eav	0.41

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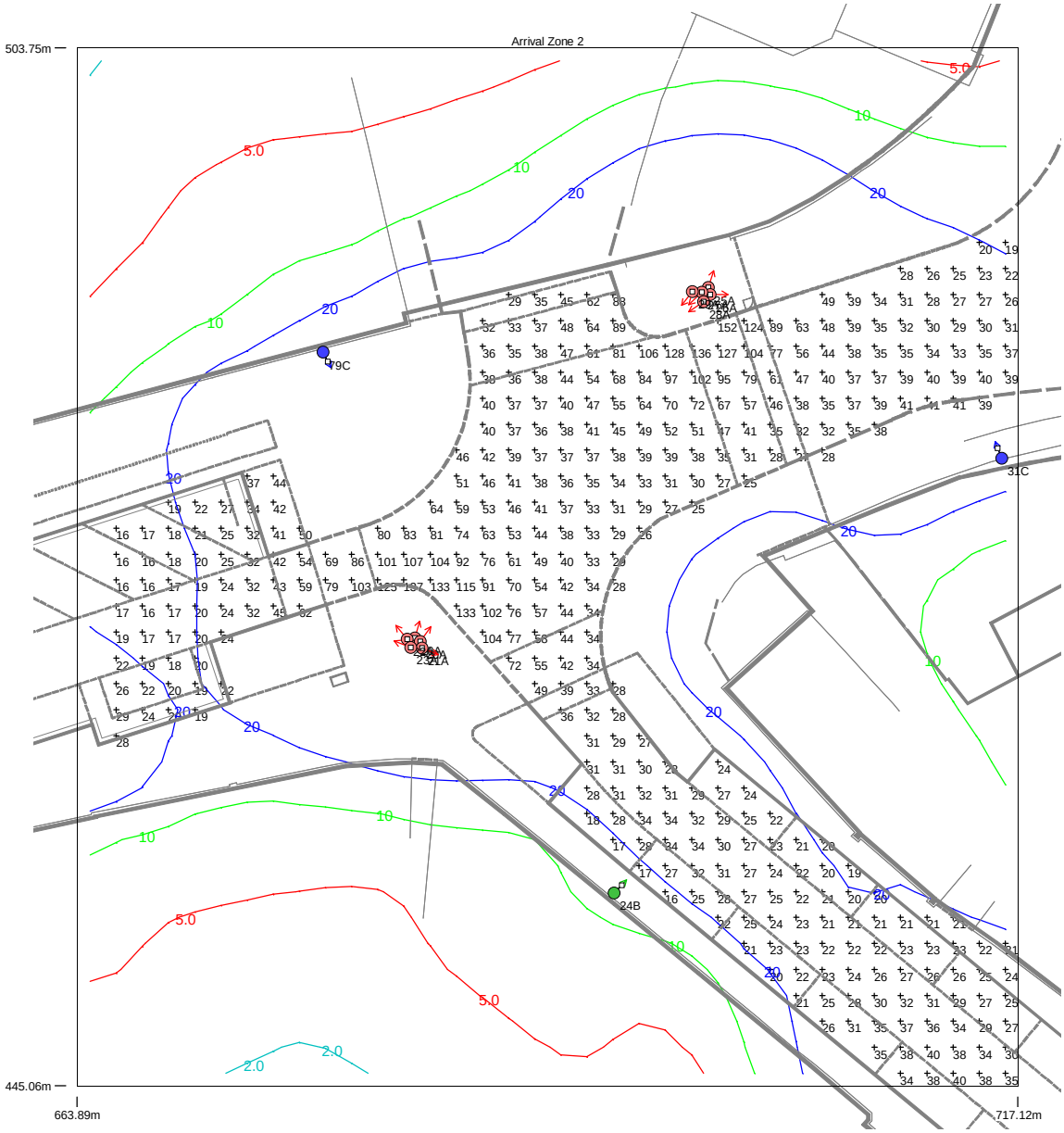
Horizontal Illuminance (lux)

Arrival Zone 2

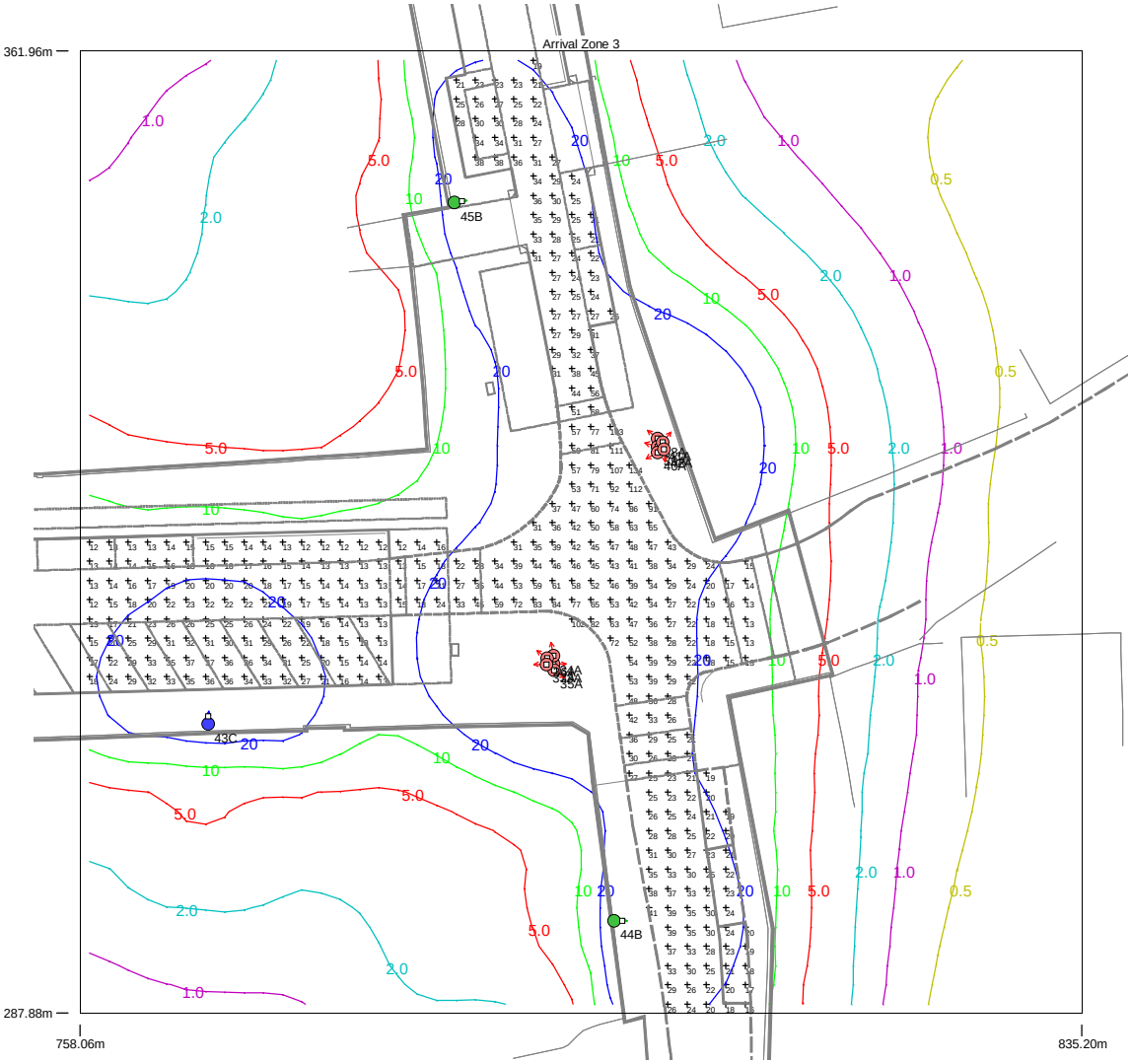


Results

Eav	40.47
Emin	16.01
Emax	152.03
Emin/Emax	0.11
Emin/Eav	0.40

Horizontal Illuminance (lux)

Arrival Zone 3

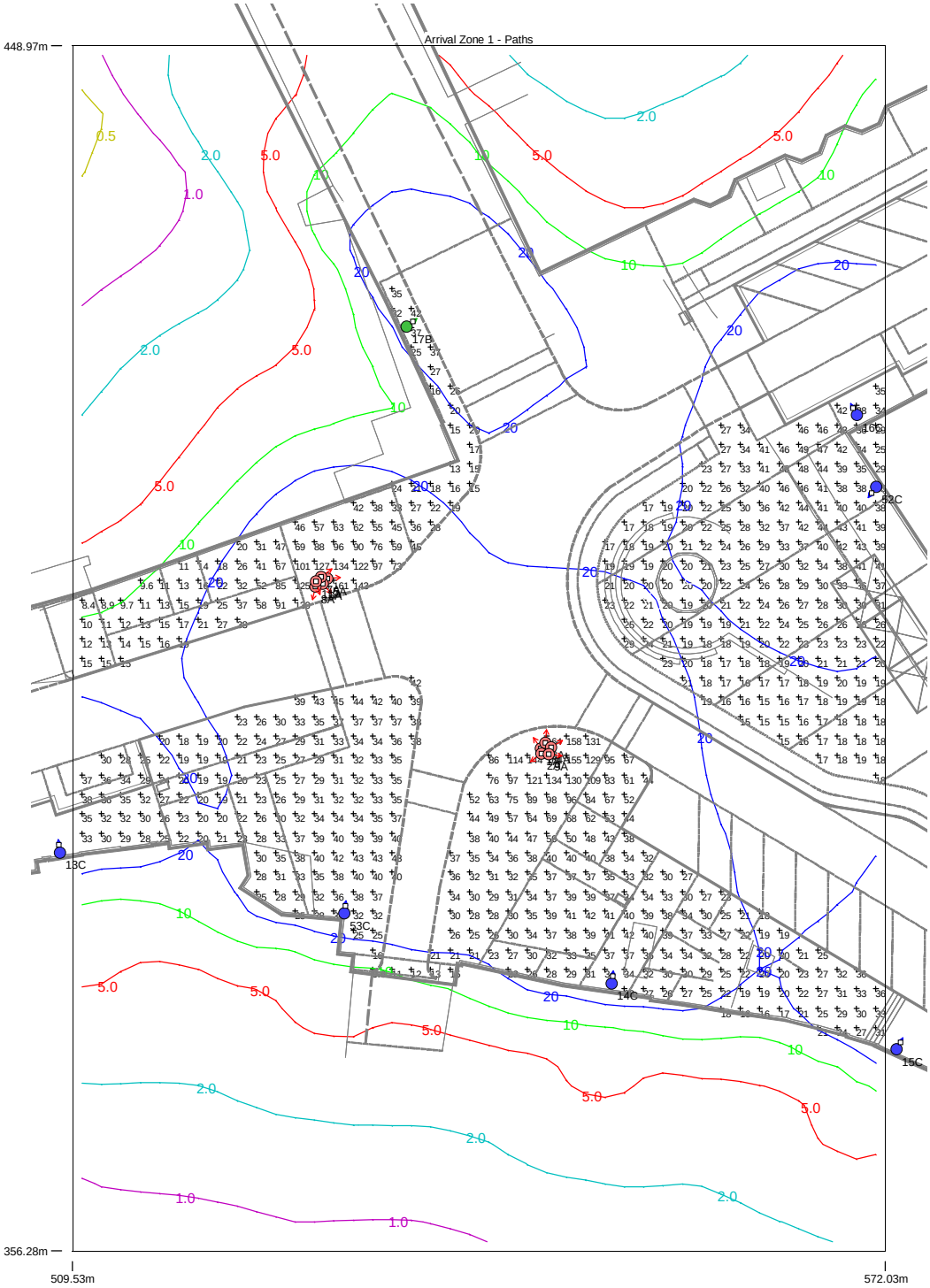


Results

Eav	30.41
Emin	12.07
Emax	134.42
Emin/Emax	0.09
Emin/Eav	0.40

Horizontal Illuminance (lux)

Arrival Zone 1 - Paths



Results

Eav	34.36
Emin	8.36
Emax	164.42
Emin/Emax	0.05
Emin/Eav	0.24

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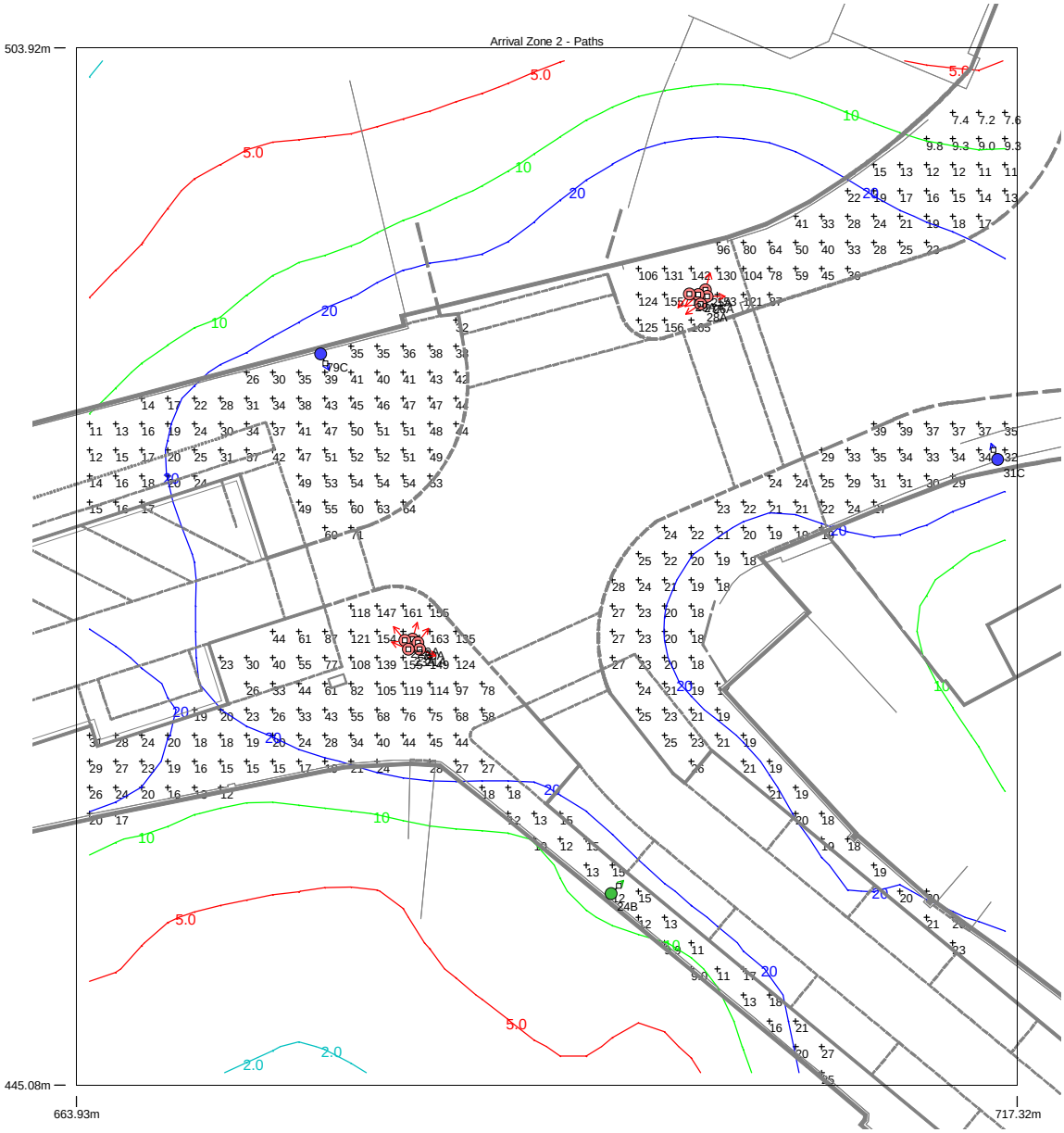
Horizontal Illuminance (lux)

Arrival Zone 2 - Paths

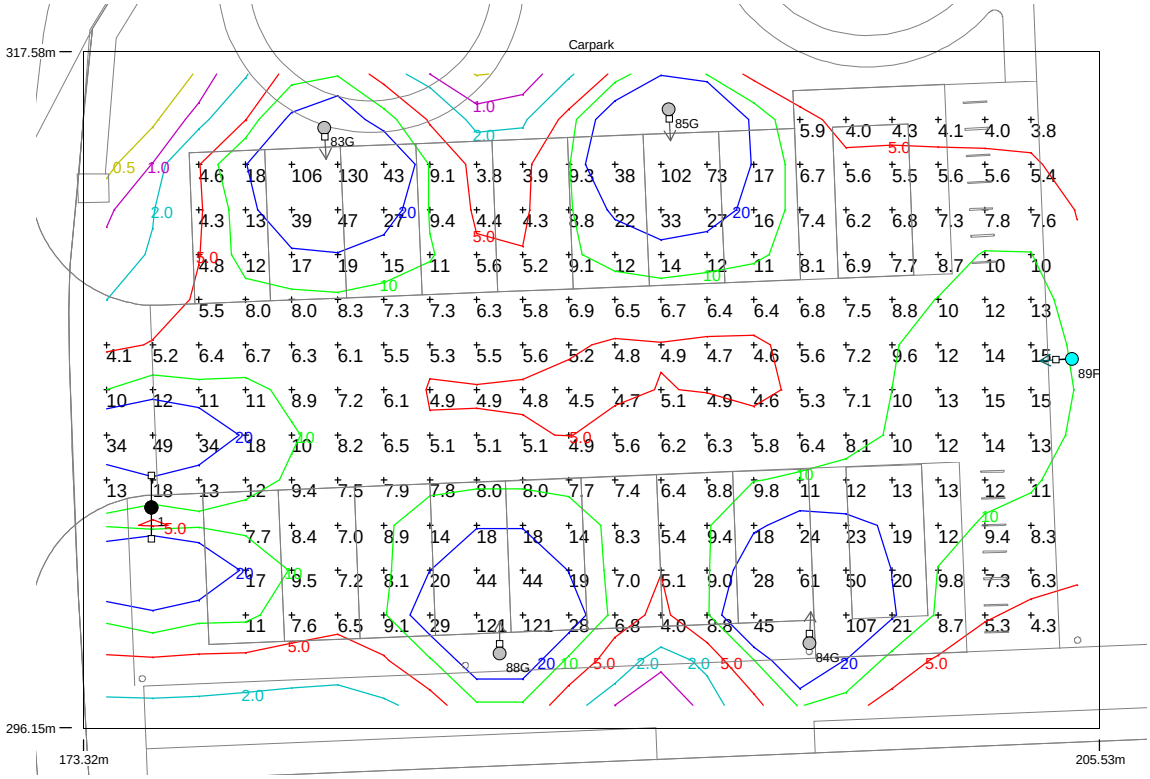


Results

Eav	39.80
Emin	7.20
Emax	171.16
Emin/Emax	0.04
Emin/Eav	0.18

Horizontal Illuminance (lux)

Carpark

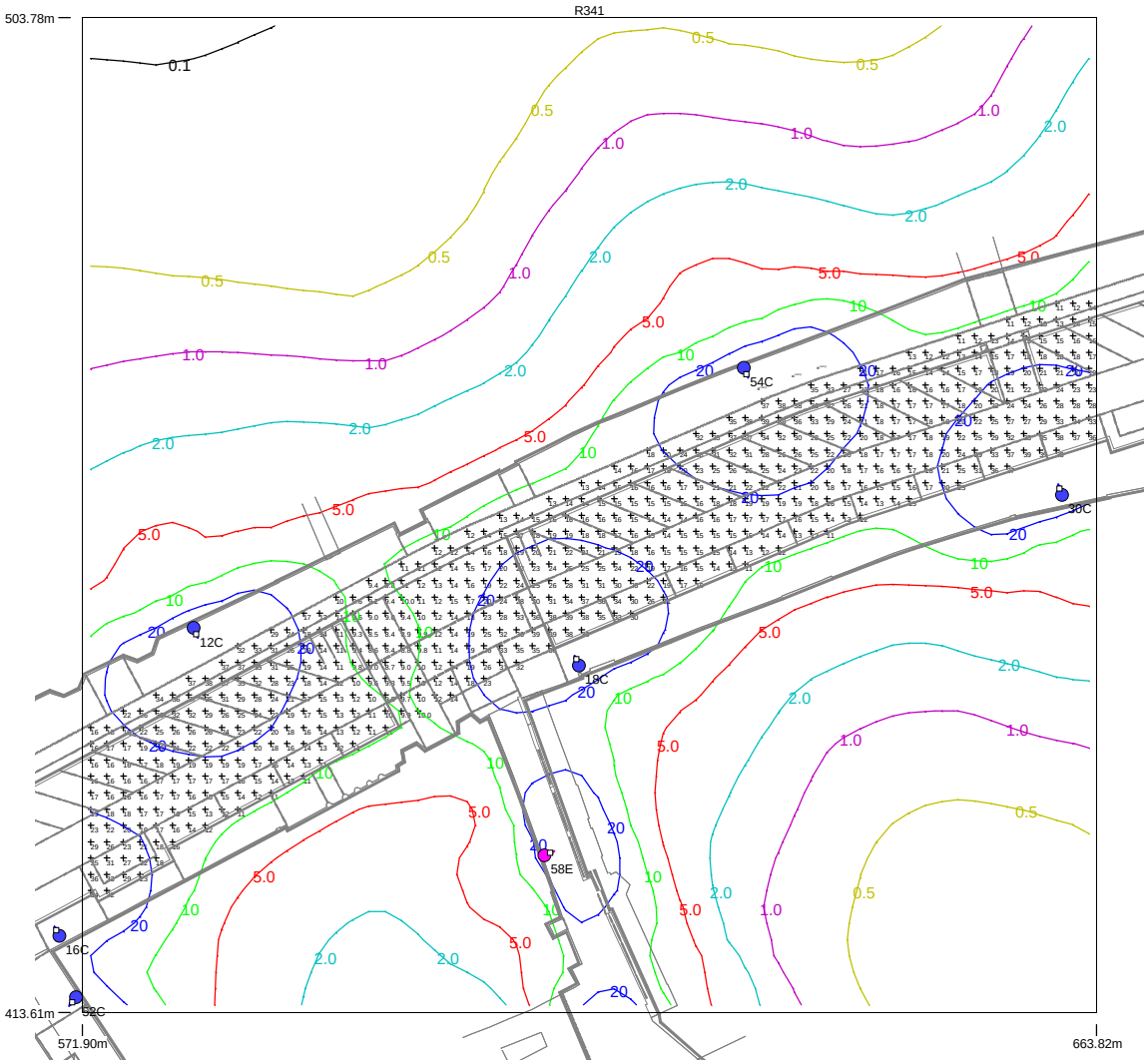


Results

Eav	14.65
Emin	3.79
Emax	130.48
Emin/Emax	0.03
Emin/Eav	0.26

Horizontal Illuminance (lux)

R341

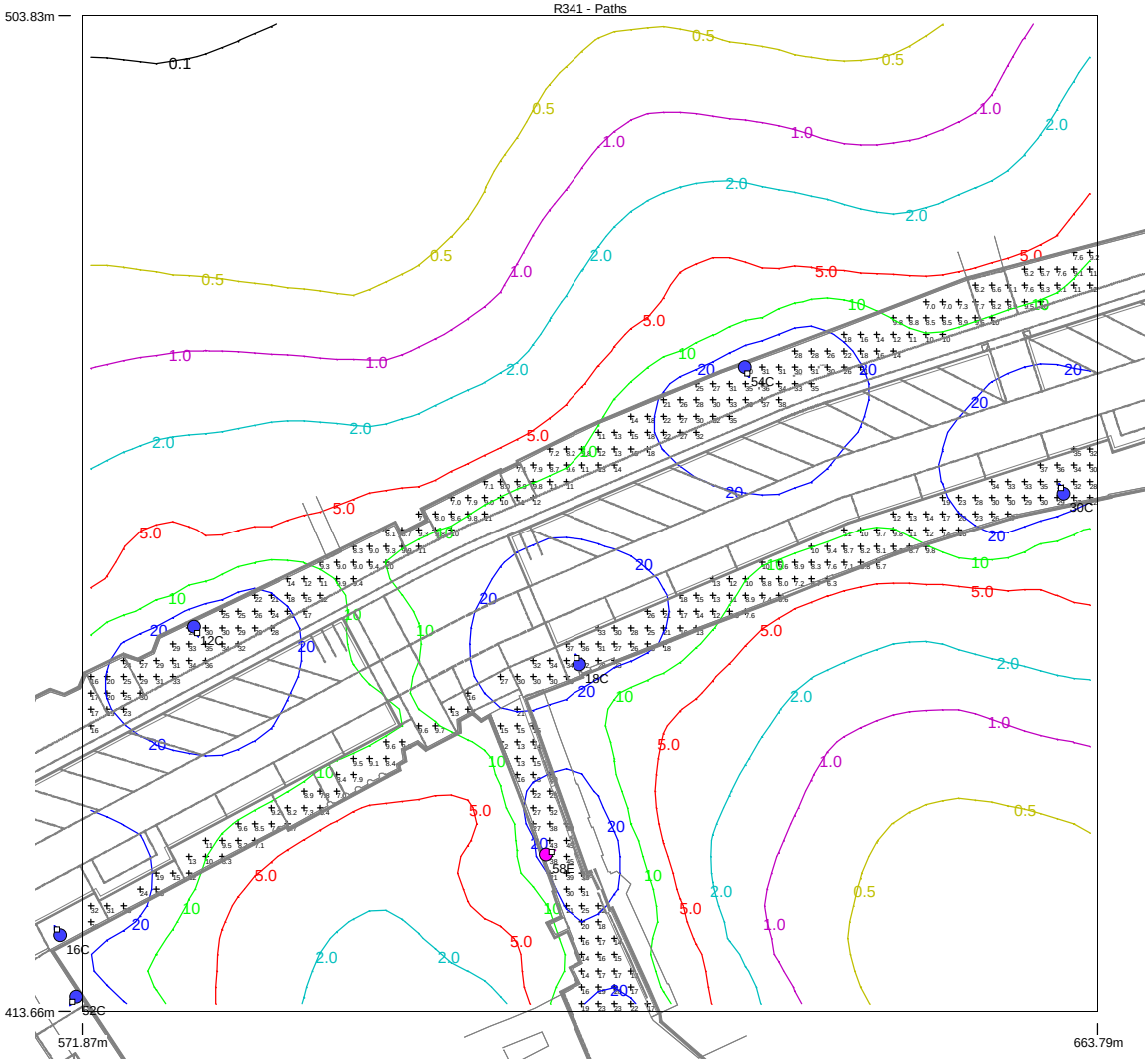


Results

Eav	20.06
Emin	8.40
Emax	39.48
Emin/Emax	0.21
Emin/Eav	0.42

Horizontal Illuminance (lux)

R341 - Paths



Results

Eav	18.52
Emin	6.17
Emax	45.36
Emin/Emax	0.14
Emin/Eav	0.33

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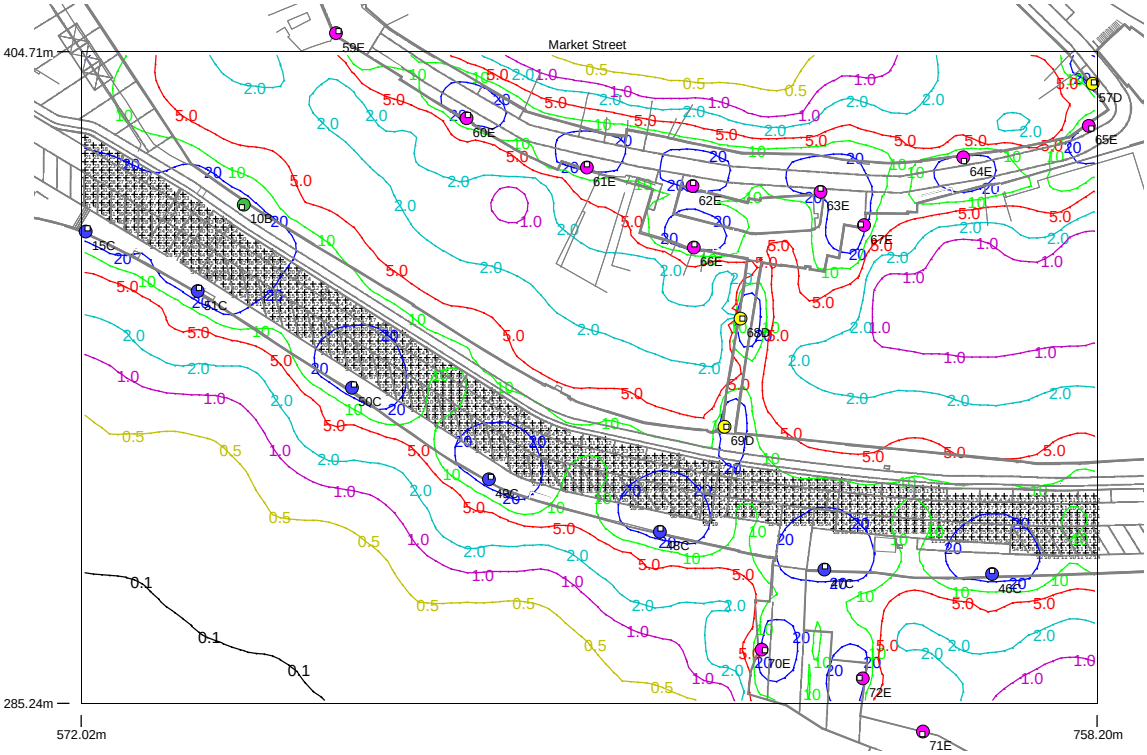
Horizontal Illuminance (lux)

Market Street

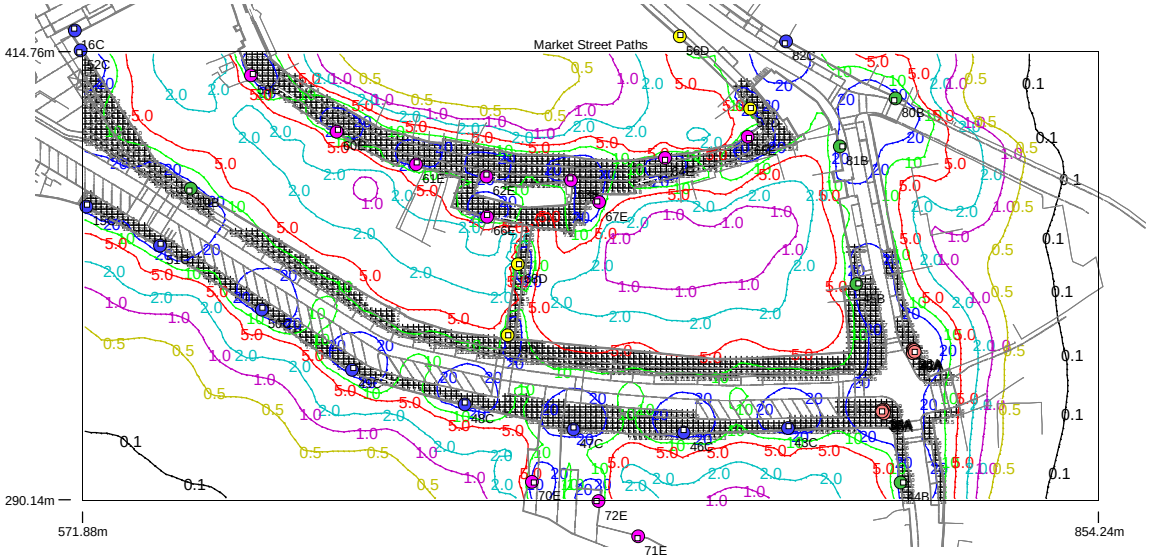


Results

Eav	20.26
Emin	8.09
Emax	53.75
Emin/Emax	0.15
Emin/Eav	0.40

Horizontal Illuminance (lux)

Market Street Paths

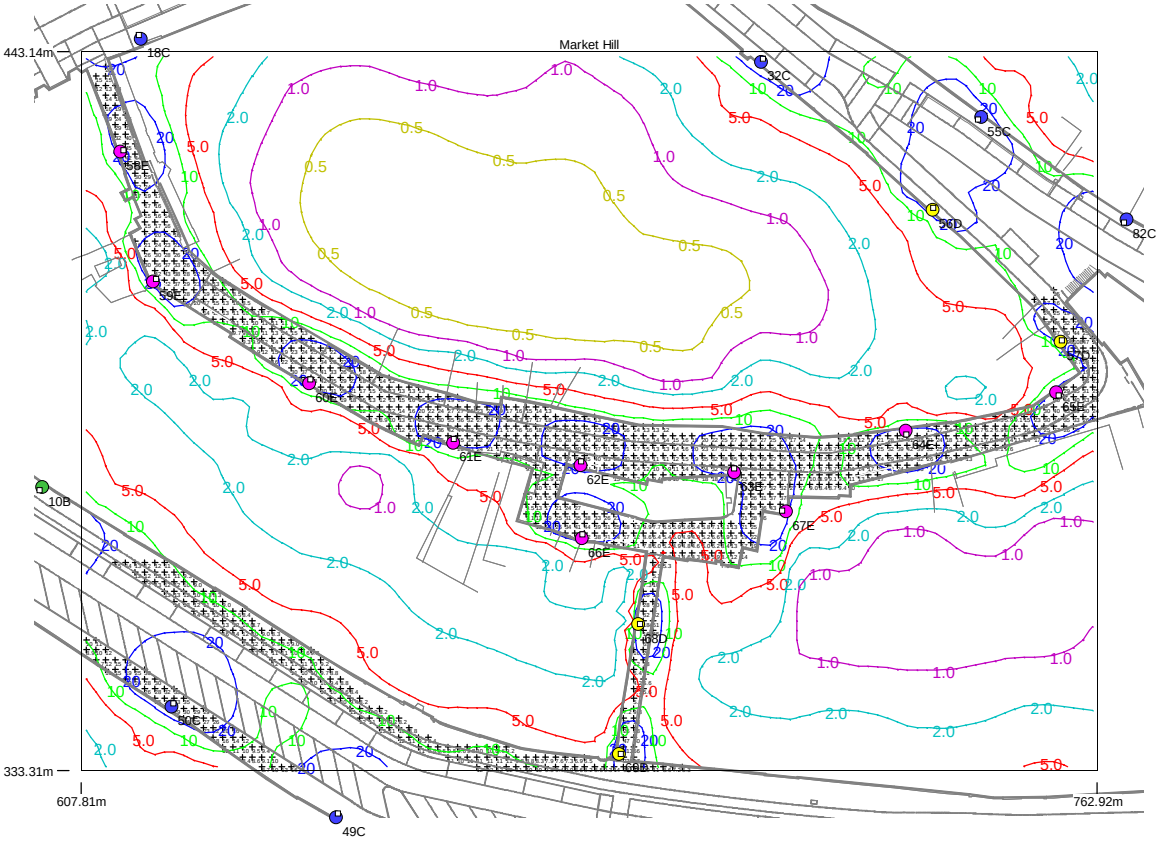


Results

Eav	21.91
Emin	4.13
Emax	228.01
Emin/Emax	0.02
Emin/Eav	0.19

Horizontal Illuminance (lux)

Market Hill

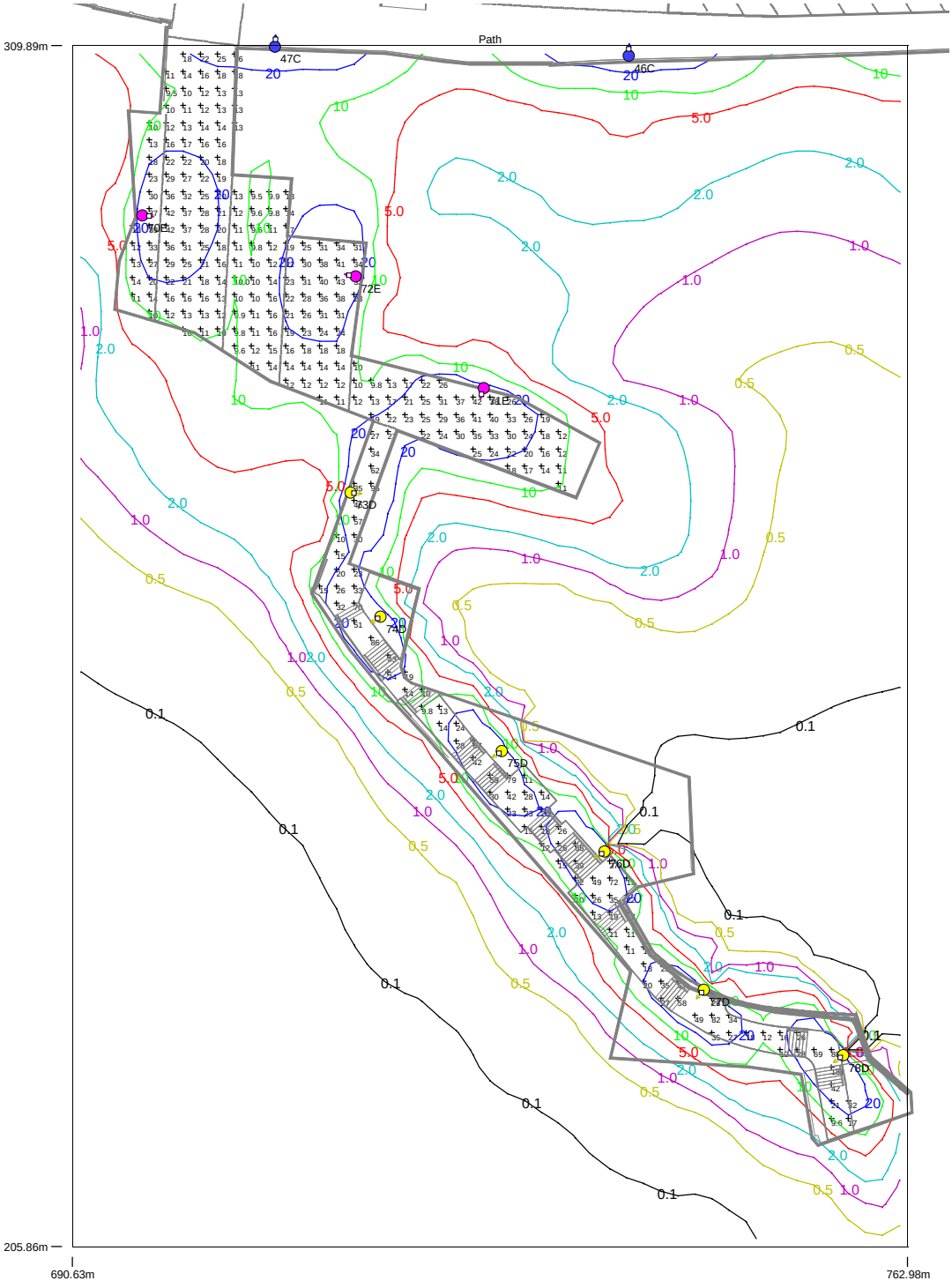


Results

Eav	20.45
Emin	4.05
Emax	235.86
Emin/Emax	0.02
Emin/Eav	0.20

Horizontal Illuminance (lux)

Path



Results

Eav	23.96
Emin	9.48
Emax	181.14
Emin/Emax	0.05
Emin/Eav	0.40

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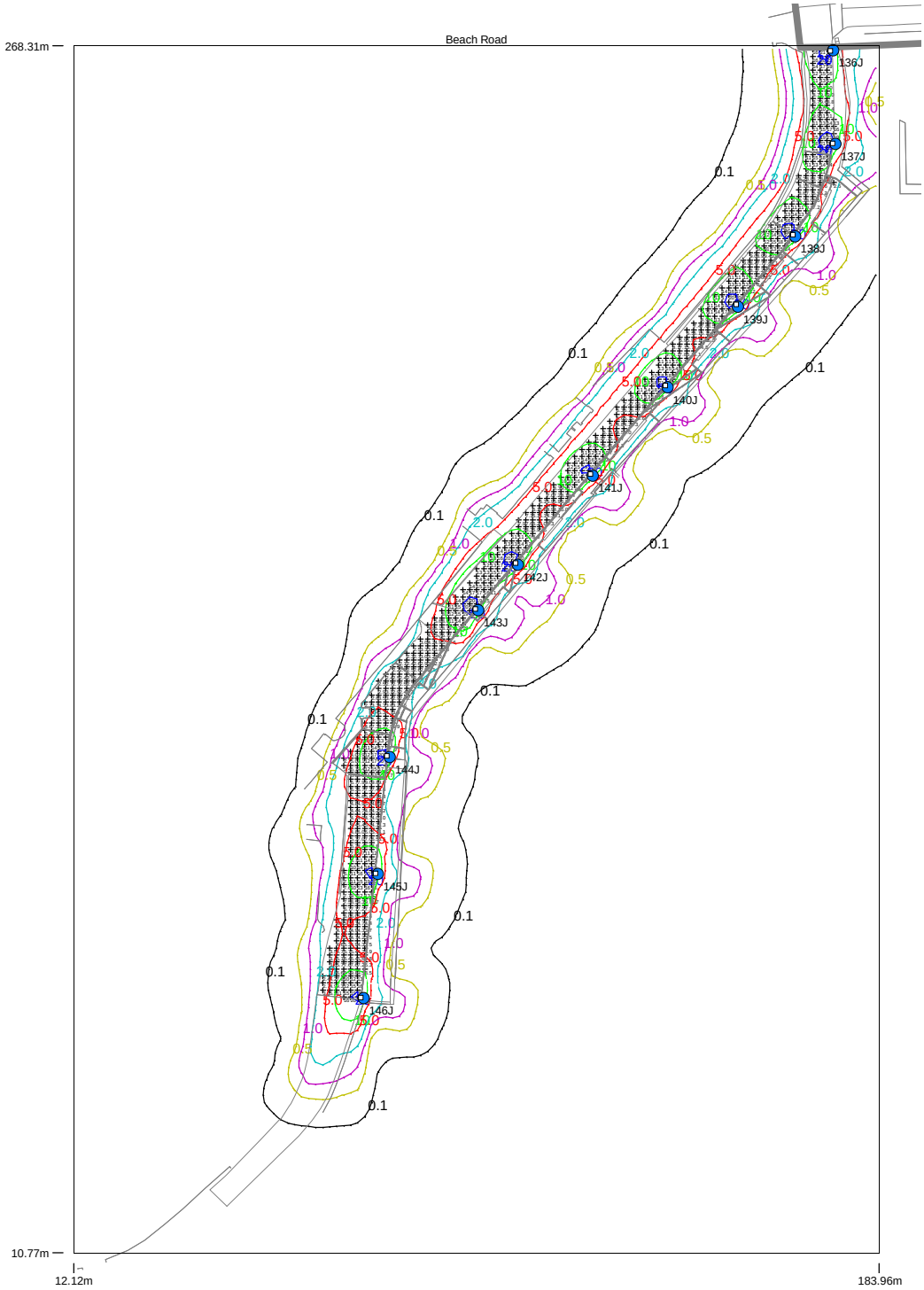
Horizontal Illuminance (lux)

Beach Road

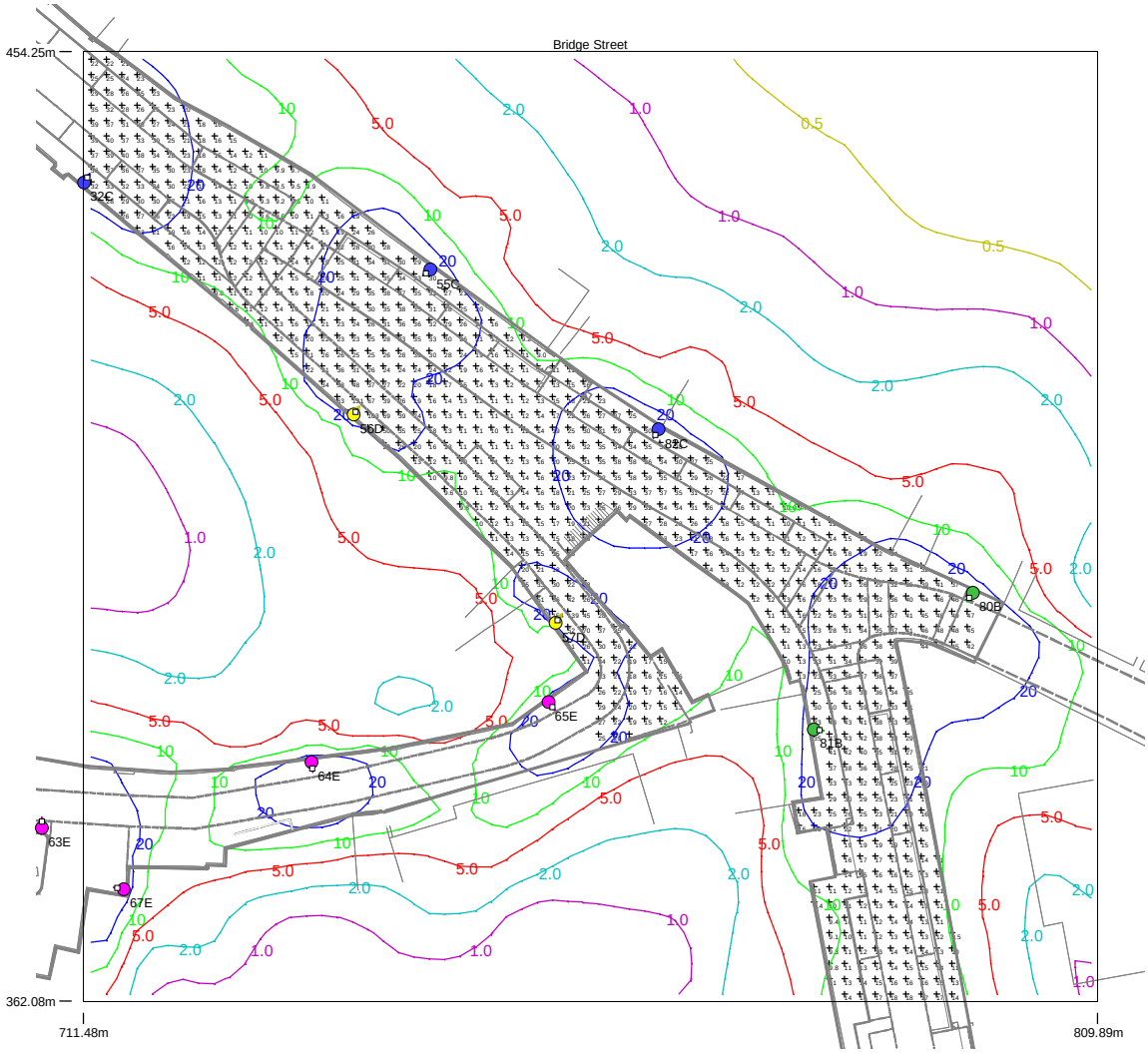


Results

Eav	10.00
Emin	2.12
Emax	23.18
Emin/Emax	0.09
Emin/Eav	0.21

Horizontal Illuminance (lux)

Bridge Street



Results

Eav	22.69
Emin	9.00
Emax	162.76
Emin/Emax	0.06
Emin/Eav	0.40

Horizontal Illuminance (lux)

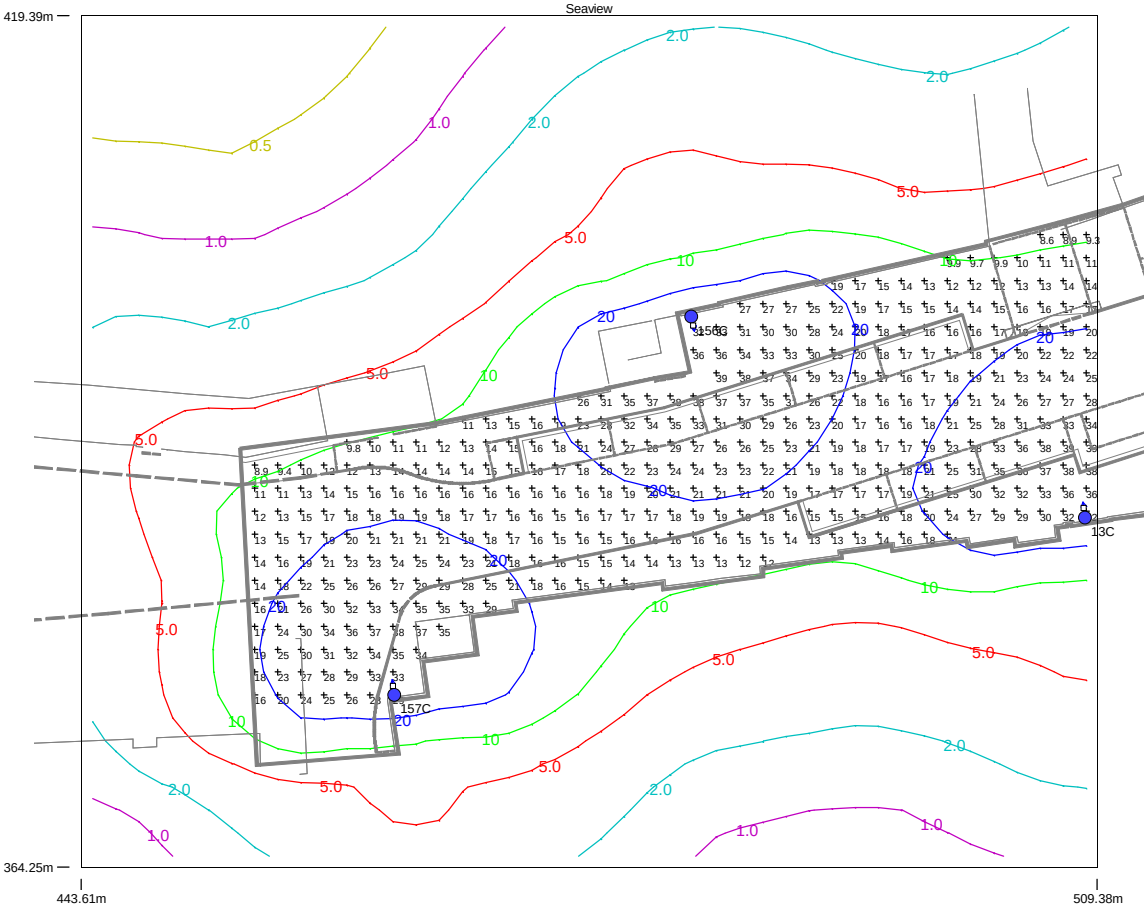
Harbour Park Walkway

Results

Eav	10.96
Emin	1.00
Emax	86.98
Emin/Emax	0.01
Emin/Eav	0.09

Horizontal Illuminance (lux)

Seaview



Results

Eav	21.53
Emin	8.55
Emax	39.03
Emin/Emax	0.22
Emin/Eav	0.40

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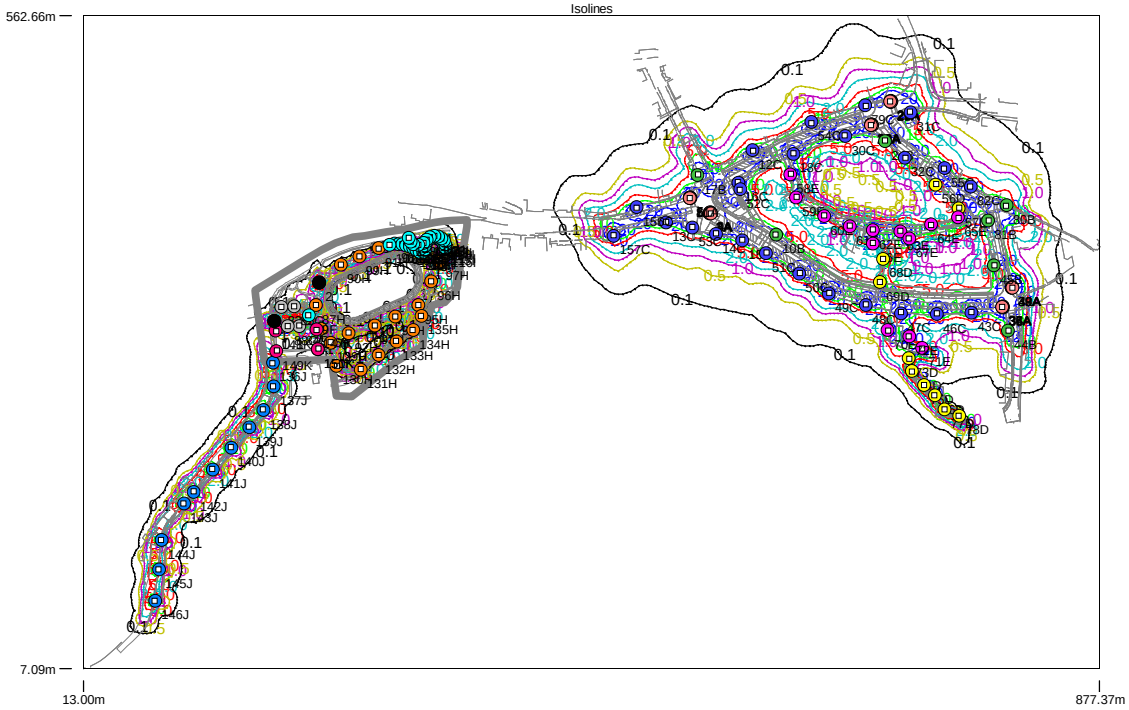
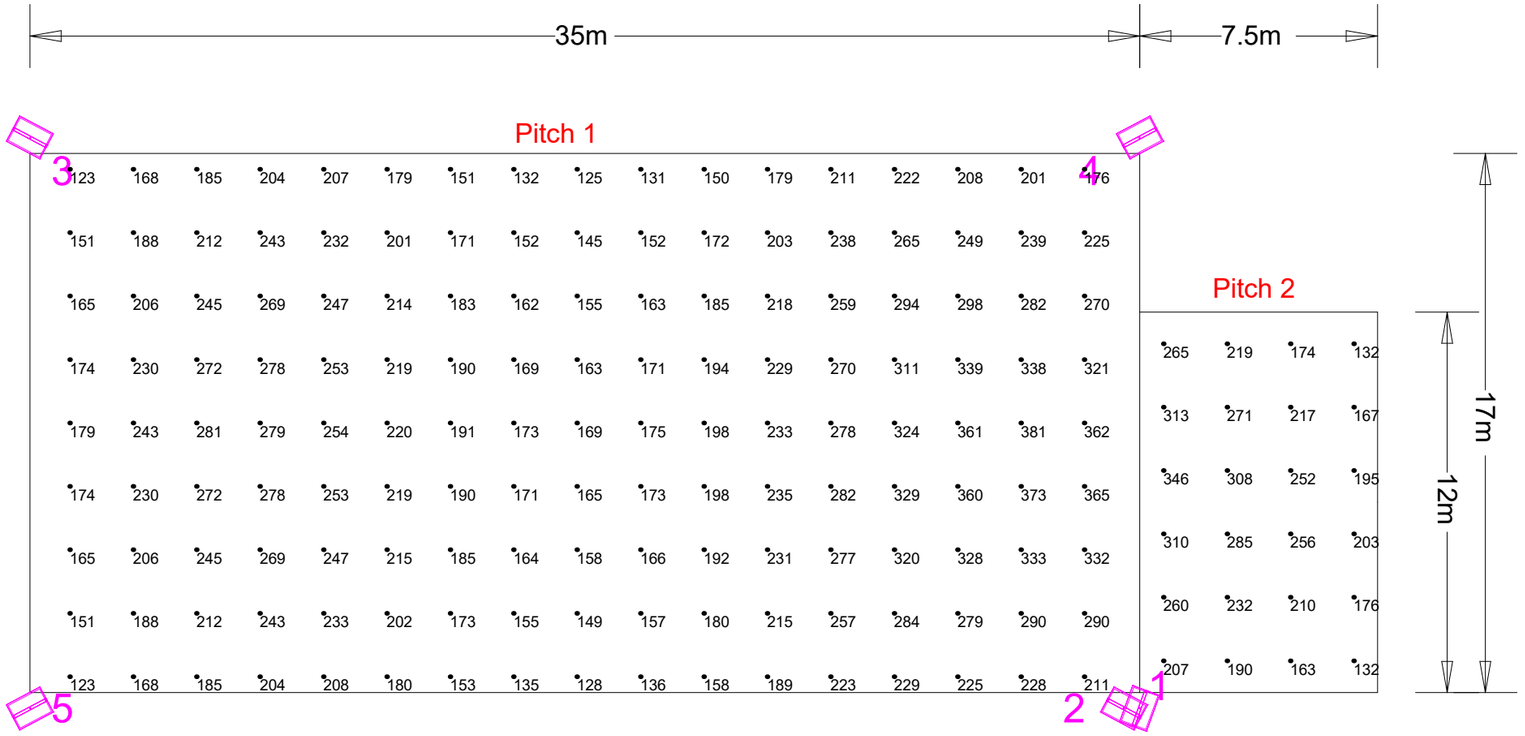
Horizontal Illuminance (lux)

Isolines





NOTE:
Actual results achieved may vary from predicted values due to normal deviation in luminaire installation, electrical supply, equipment tolerances, obstructions including poles, brackets and mounting arms, reflectances etc.

This design is for general guidance only & its use is subject to conditions (available on request).

Based On
Lumen Output at 10000 Hours,
Spot Lamp Replacement,
Normal Environment,
Annual Cleaning,
Ground is Level.

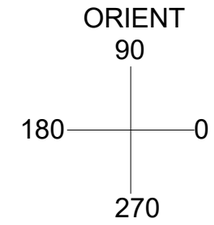
VeeLite

Project:
Clifden Public Realm
Astro Pitch

Client:
Moloney Fox Consulting Engineers

Project No:	Drawing No:	Drawn By:
23-09-21	23-09-21-01A	DS
Date: 21/11/2023	Scale: As shown	REV NO: A

23-09-21-01A.AGI



Luminaire Location Summary

LumNo	Label	X	Y	Z	Orient	Tilt
1	SL6-4A	17.5	-9	10	70	0
2	SL6-4A	17	-9	10	152	5
3	SL6-4A	-17.5	9	10	332	5
4	SL6-4A	17.5	9	10	208	5
5	SL6-4A	-17.5	-9	10	28	5

Total Quantity: 5

Calculation Summary

Description	Avg	Max	Min	Min/Avg	Min/Max	Units	PtSpcLr	PtSpcTb	# Pts
Pitch 1	220.05	381	123	0.56	0.32	Lux	2	2	153
Pitch 2	228.46	346	132	0.58	0.38	Lux	2	2	24

UWLR = 0.000

Luminaire Schedule

Symbol	Qty	Label	Lum. Lumens	MF	Description	Filename
	5	SL6-4A	57116	0.900	Sportslite 6, 400w LED 5000K Optic A Asymmetric Wide Beam	5SBS00601-A.ies

Atina

External Lighting

Modern decorative LED luminaire, available in 2 sizes. Ideal for roadway applications.

Construction: Die-cast aluminium with integrated heat sink. IP66. IK08 as standard, IK10 on request.

Lens: Tempered glass as standard.

Installation: 3 mounting options:
A - Side entry (60 mm) - Standard
B - Post-top
C - Bracket mounted
(see application images).

Finish: Grey RAL 9006 as standard. Other RAL colours on request.

LED: 10w to 172w available. 4000K as standard, 3000K or other CCT on request. Asymmetric street optic A10 as standard. LED Lifetime: L80 B10 >100,000 hours. (at 25°C).

LED Driver: 220-240V AC 50/60 Hz. Internal Driver.

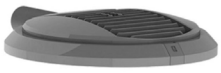
Mains Surge Protection: 10kV device included as standard.

Options: Various Optics, DALI, 1-10V, Programmable Dimming, Constant Lumen Output (CLO), Various Mounting Options.

Manufactured: EU.

Product Compliance: EN 60598; CE.

VeeLite



Side entry version

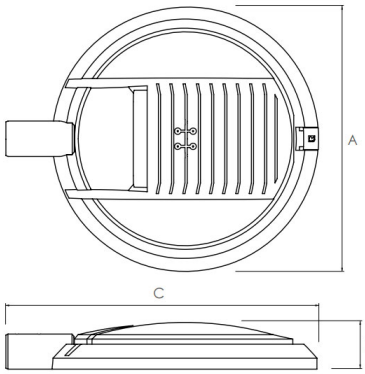
Post-top version

Alyra Bracket
Size 2 Only

Cyfer bracket

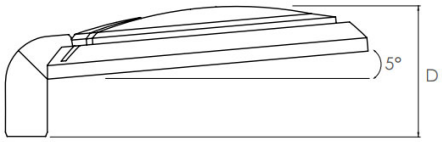
DIMENSIONS

Side Entry Version



60mm spigot

Post-Top Version

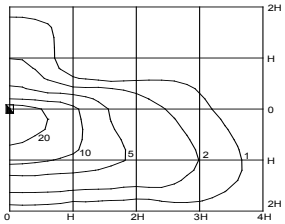


60mm spigot

Dimensions in mm	A	B	C	D	Weight:	EPA:
Size 1	480	92	585	220	7 kg	0.04m²
Size 2	600	129	706	239	13 kg	0.06m²

APPLICATION GUIDE

Atina Size 1 - Street Optic A10
36w LED 4K
Height 6m
Contours in Lux
M. Factor = 0.90



ORDERING CODE

Wattage	Type	Size	Code	Details	Optic	Option	Lumens
14w	8LED	1	5ATA09GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	1633 lm
19w	8LED	1	5ATA09GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	2186 lm
20w	12LED	1	5ATA10GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	2449 lm
27w	12LED	1	5ATA10GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	3278 lm
19w	16LED	1	5ATA11GLC	Atina with 350mA driver, Side Entry, 4K	A10	A11-A14, C6	2379 lm
26w	16LED	1	5ATA11GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	3265 lm
36w	16LED	1	5ATA11GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	4372 lm
38w	24LED	1	5ATA12GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	4898 lm
52w	24LED	1	5ATA12GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	6557 lm
49w	32LED	1	5ATA13GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	6531 lm
69w	32LED	1	5ATA13GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	8743 lm
73w	48LED	1	5ATA14GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	9796 lm
103w	48LED	1	5ATA14GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	13115 lm
49w	32 LED	2	5ATB13GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	6531 lm
69w	32LED	2	5ATB13GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	8743 lm
73w	48LED	2	5ATB14GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	9796 lm
103w	48LED	2	5ATB14GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	13115 lm
96w	64LED	2	5ATB16GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	13062 lm
136w	64LED	2	5ATB16GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	17485 lm
120w	80LED	2	5ATB17GLB	Atina with 500mA driver, Side Entry, 4K	A10	A11-A14, C6	16327 lm
172w	80LED	2	5ATB17GLA	Atina with 700mA driver, Side Entry, 4K	A10	A11-A14, C6	21858 lm

OPTIONS

RAL: PIs Specify
PT: Post-top version (D60)
PC: Mini Photocell
DALI: DALI Dimmable
1-10V: 1-10V Dimmable
CLO: Constant Lumen Output
PRO: Programmed Dimming
A11: Street Optic A11
A12: Street Optic A12
A13: Street Optic Wide A13
A14: Forward Throw Optic A14
C6: Symmetric Optic C6
3K: 3000K, Warm White
2.7K: 2700K, Warm White
MRN: Marine Finish
IK10: IK 10 Protection

Kassio Bollard

External lighting

LED Bollard with simple design shape offered in 3 heights suitable for paths, gardens or plaza areas.

Construction: Cast Aluminium Head, IP66, IK10.
Galvanised Steel Shaft. 900mm high as standard. Height 1.2M or 1.5M on request.

Installation: Flanged as standard. Access Door on rear of Shaft.

LED: 10w (8 LED) to 26w (16 LED). CRI > 70. 4K as standard. 3K on request. Life L80 B10 > 100,000 hours.

Optics: Asymmetric (A13) as standard to light pathways. Symmetric (C6 optic) on request but note light is blocked behind bollard unless twin head ordered.

Driver: 220V -240V AC 50/60Hz Internal LED driver.

Finish: Black RAL 9005 as standard. Other RALs on request including Wooden Effect Finish on Shaft.

Options: Twin head, Symmetric/ Asymmetric, Different Heights, Wooden Effect Finish, DALI.

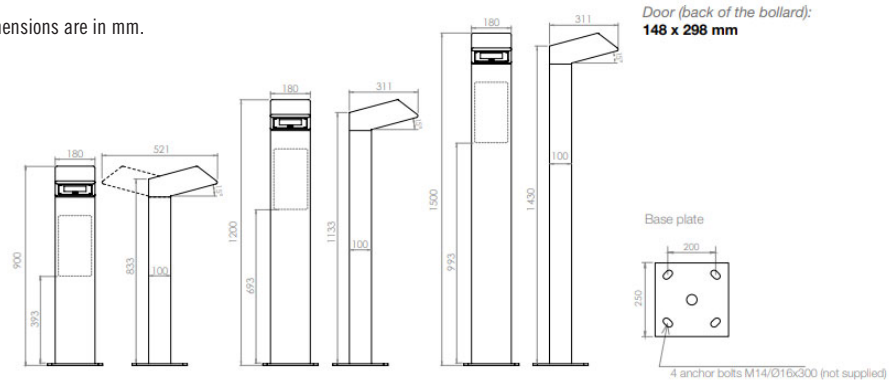
Manufactured: EU.

Product Compliance: EN 60598, CE.

VeeLite

DIMENSIONS

All Dimensions are in mm.



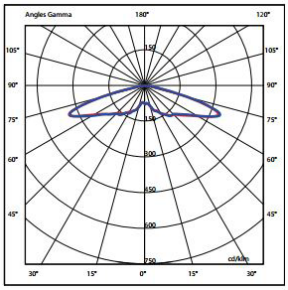
Weight: 20 / 25 / 30 Kgs. - One Head version

Weight: 23 / 28 / 33 Kgs. - Two Head version

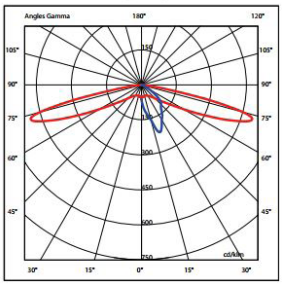
SIZES & FINISH EXAMPLES

OPTICS

Symmetric - C6



Asymmetric - A13



ORDERING CODE

Wattage*	Type	Code - Single	Code - Twin	Details	Optic	Option	Lumens*
10w	8LED	5KAS00010	5KAS00210	Flanged Bollard 900mm, 350mA Driver, 4K	A13	C6	1150
14w	8LED	5KAS00011	5KAS00211	Flanged Bollard 900mm, 500mA Driver, 4K	A13	C6	1560
19w	8LED	5KAS00012	5KAS00212	Flanged Bollard 900mm, 700mA Driver, 4K	A13	C6	2050
19w	16LED	5KAS00015	5KAS00215	Flanged Bollard 900mm, 350mA Driver, 4K	A13	C6	2300
26w	16LED	5KAS00016	5KAS00216	Flanged Bollard 900mm, 500mA Driver, 4K	A13	C6	3120

*Per Single Head version. (Twin Head version will be double).

OPTIONS

RAL: Pls specify
1.2m: Height 1.2m
1.5m: Height 1.5m
DALI: DALI Dimmable
1-10V: 1-10V Dimmable
CLO: Constant Lumen Output
PRO: Programmed Dimming
C6: Symmetric Optic Wide (C6)
3K: 3000K, Warm White
MRN: Marine Finish

Single Version Twin Version

RYS

Floodlighting

Architectural Floodlight available in 2 sizes with multiple beam options. Also available in mast version (see separate leaflet).

Construction: Die Cast Aluminium housing. IP66. IK08.

Lens: Clear tempered glass as standard.

Finish: Grey RAL 9006 as standard. Other RAL colours on request.

LED: Available in 15w-56w LED. 4000K as standard, 3000K or other CCT on request. Wide beam Symmetric as standard. Narrow or medium beam on request.

Driver: Internal LED driver.

Options: 3 beam options, cowl/shield. Surge Protector (not available in Mini)

Manufactured: EU.

Product Compliance: EN 60598; CE.

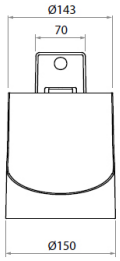
VeeLite

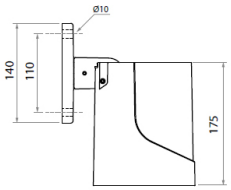
Rys Mini

DIMENSIONS

Rys Mini

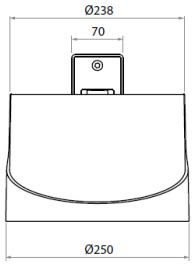
Weight: 3.6kg EPA: 0.021m²

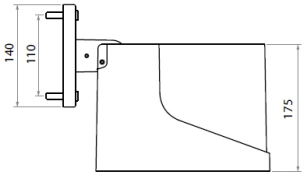




Rys Standard

Weight: 6kg EPA: 0.031m²





All dimensions in mm.

ORDERING CODE

Wattage	Type	Code Std	Code Mini	Description	Lumens
15w	1LED	5RYS13LGA	5RYM13LGA	Rys Floodlight with 350mA driver, Wide beam Symmetric, 4K	1476 lm
20w	1LED	5RYS15LGA	5RYM15LGA	Rys Floodlight with 500mA driver, Wide beam Symmetric, 4K	2022 lm
29w	1LED	5RYS17LGA	5RYM17LGA	Rys Floodlight with 700mA driver, Wide beam Symmetric, 4K	2689 lm
27w	2LED	5RYS23LGA	-	Rys Floodlight with 350mA driver, Wide beam Symmetric, 4K	2952 lm
38w	2LED	5RYS25LGA	-	Rys Floodlight with 500mA driver, Wide beam Symmetric, 4K	4044 lm
54w	2LED	5RYS27LGA	-	Rys Floodlight with 700mA driver, Wide beam Symmetric, 4K	5379 lm
39w	3LED	5RYS33LGA	-	Rys Floodlight with 350mA driver, Wide beam Symmetric, 4K	4428 lm
56w	3LED	5RYS35LGA	-	Rys Floodlight with 500mA driver, Wide beam Symmetric, 4K	6066 lm

OPTIONS

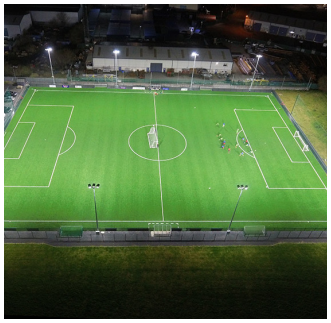
NB: Narrow Beam
MB: Medium Beam
3K: 3000K, Colour Temperature
CWL: Cowl
SHD: Full Shield
2.7K: 2700K, Colour Temperature
2.2K: 2200K, Colour Temperature
RAL: Please Specify

Cowl

Full Shield

Sportslite 6

External Lighting



LED floodlight with asymmetric beam, 200w to 1200w LED designed for the illumination of sports pitches and large areas.

Construction: Aluminium housing with Polycarbonate Lens. IP66, IK08.

Mounting: Via Adjustable U bracket.

Finish: Black as standard.

LED: 200w to 1200w (each LED panel is 200w), 5000K Ra70 as standard. 4000K on request. Asymmetric Wide Beam A as standard. Various other beam angles on request. Operating Temperature -30°C to 50°C

Expected Life: L90 = 55,000 hours @ 25°C.

Driver: 220-240V AC, 50/60 Hz. Driver is integrated for 200w and 400w and remote as standard for 600w and above. Remote gear is supplied on a gear tray which should installed in a weather proof location at bottom of pole for easy access. Integrated or remote driver on request for all wattages.

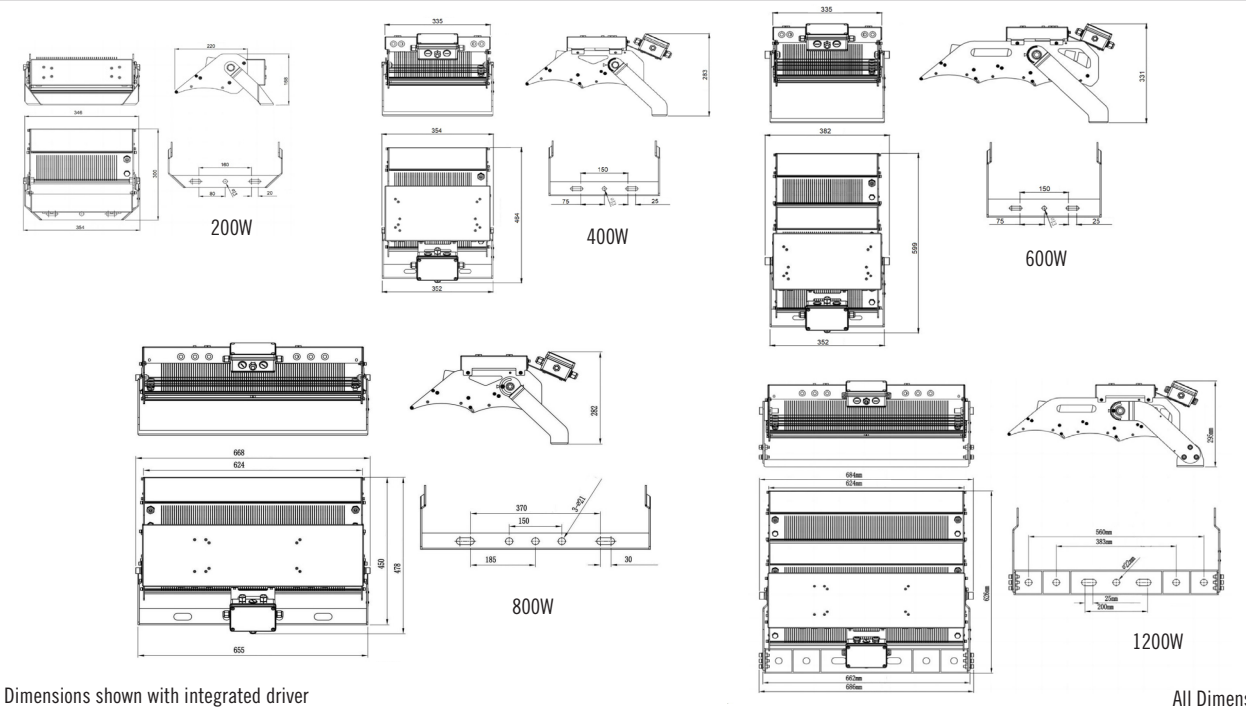
Mains Surge Protection: 20kV Line-Earth, 10kV Line-Line.

Options: DALI, Beam Options, CCT, remote or integrated driver, Laser Sight for precision aiming on site.

Product Compliance: EN 60598, CE.

VeeLite

DIMENSIONS - Luminaire

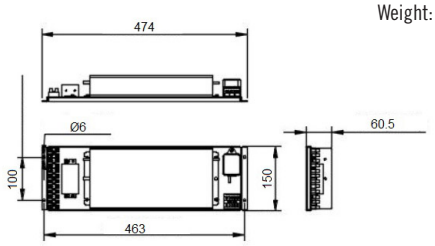


Dimensions shown with integrated driver

All Dimensions in mm

DIMENSIONS - Remote Driver Tray

Weight: 6 kg



EPA/Wind Loading - Driver Integrated Version

EPA (m^2)	200W	400W	600W	800W	1200W
0° Tilt	0.04	0.05	0.08	0.11	0.16
30° Tilt	0.05	0.10	0.12	0.20	0.24
60° Tilt	0.08	0.12	0.18	0.25	0.36
90° Tilt	0.09	0.15	0.21	0.30	0.40
Weight (kg)	6.0	11.0	17.0	19.5	28.0

ORDERING CODE - FLOODLIGHT

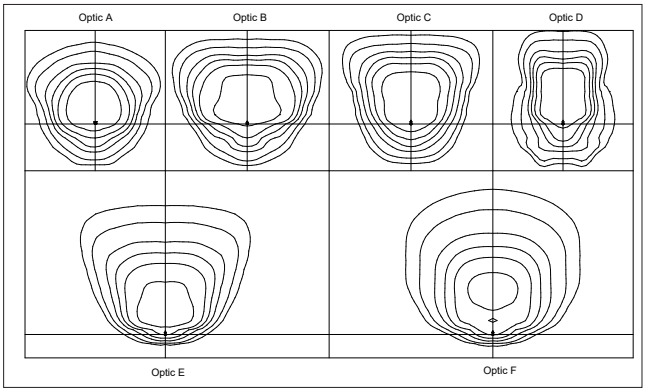
Watt	Code	Description	Lumens*
200w	5SBS00201	Sportslite 6, 5K, Asymmetric Beam A with Integrated Driver	28,000 lm
400w	5SBS00401	Sportslite 6, 5K, Asymmetric Beam A with Integrated Driver	57,000 lm
600w	5SBS00601	Sportslite 6, 5K, Asymmetric Beam A with Remote Driver	85,000 lm
800w	5SBS00801	Sportslite 6, 5K, Asymmetric Beam A with Remote Driver	113,000 lm
1200w	5SBS01201	Sportslite 6, 5K, Asymmetric Beam A with Remote Driver	168,000 lm

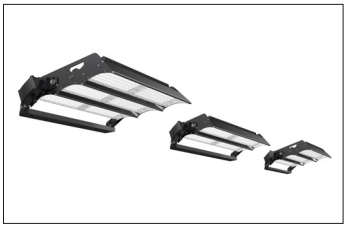
* Luminaire lumens for Asymmetric Wide Beam A. Lumen output will vary depending on the optic used.

OPTIONS

RD: Remote Driver Tray
ID: Integrated Driver
OP-A: A Wide Beam Asymmetric
OP-B: Medium Beam Asymmetric
OP-C: Medium Beam Asymmetric
OP-D: Narrow Beam Asymmetric
OP-E: Asymmetric, Reduced Backlight+
OP-F: Asymmetric, Reduced Backlight+
LS: Laser Sight
4K: 4000K Colour Temperature

+ Reduced Backlight fittings have different dimensions - available on request.



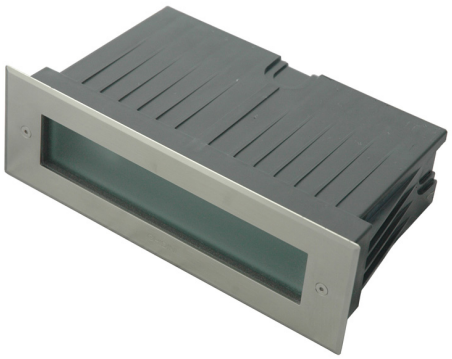


Further info on request · email: veelite.com · www.veelite.com

Specifications may change without prior notification. Ref: 647

VeeLite

10/23



Margen Series

Recessed Wall lights

Wall recessed luminaire suitable for pathways, driveways or similar applications.

Construction: Die-cast Aluminium with tempered glass lens. IP66.
IK06 - Size 1&2, IK07 - Size 3.

Lens: Frosted glass lens 4mm (Size 1 &2), 5mm (Size 3).

Installation: External wall recessed with separate installation frame.

Finish: Stainless Steel Trim as standard, except Size 2 (Grill), which is available Light Grey RAL 9006, or Dark Grey.

LED: 6w to 18w LED. 4000K as standard, 3000K on request.

Driver: 220-240V AC 50/60 Hz. Internal.

Options: DALI, Finish

Manufactured: EU.

Product Compliance: EN 60598, CE, UKCA.

VeeLite

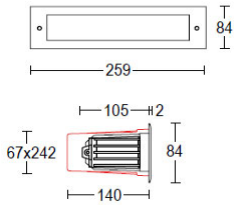
Size 1

Size 2

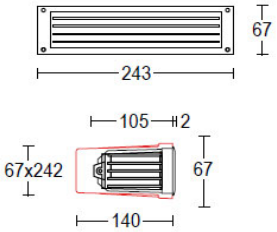
Size 3

DIMENSIONS

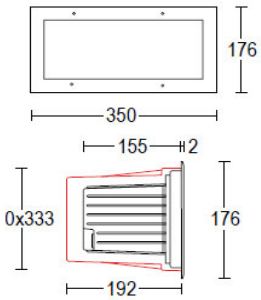
Size 1



Size 2



Size 3



All dimensions in mm

OPTIONS

3K: 3000K, Warm White
.05: Dark Grey Finish
.19: Light Grey Finish

ORDERING CODE

Wattage	Type	Size	Code	Details	+Frame	Lumens*
6w	LED	1	G6503.AHXA400	Recessed Wall Light, 4000K, with SS Trim	GAC022	864 lm
6w	LED	2	G6507.AHXA400	Recessed Wall Light, with grill, 4000K[+]	GAC022	864 lm
12w	LED	3	G5629.BRAT400	Recessed Wall Light, Asymmetric 4000K with SS Trim	GAC024	1556 lm
13w	LED	3	G5629.BRXA400	Recessed Wall Light, 4000K with SS Trim	GAC024	2140 lm
18w	LED	3	G5629.BUAT400	Recessed Wall Light, Asymmetric 4000K with SS Trim	GAC024	2100 lm

*Source lumens
[+] Choose Finish