

Storage Yard

Installation :

Project number :
Customer : CEF, Littlehampton
Processed by : Manish Kumar
Date : 10.02.2020

Project description:

Our design is based on the information provided.

We have aimed to achieve CIBSE SLL guidelines for 'General lighting of shipyard area, storage areas for prefabricated goods' and should achieve 20lx horizontal illuminance and 0.25 uniformity. Columns height assumed 10m.

Though there is no specific SLL guidelines for CCTV recording, please check with CCTV manufacture and advise in case any particular results (illuminance and uniformity) needs to be achieved.

In regards to lighting spillage, we have used asymmetrical lighting to minimize the lighting spillage and shown the results for horizontal spillage, nearby houses seems very close to the boundary so it is not possible to completely avoid the lighting spillage.

Please verify all dimensions, columns position, height, fittings mounting arrangement and headframe provisions for given fittings weights at design stage prior to ordering and do not hesitate to contact us if any alterations or additional details required

Emergency lighting is designed to BS 5266 Part 1, EN 1838 and EN 50172, however no allowance has been made for any high risk areas or any additional specific points of emphasis or minimum 2 fittings in each area, which may require additional emergency lighting. Risk assessments need to be undertaken by the client and if these are deemed necessary, then please let us know and we can amend the design accordingly.

Emergency exit signs allowed assuming clear line of sight, with the appropriate viewing distances for the product. If this line of sight is obstructed and/or the viewing distances exceeded, then additional signage may be required. Please note if all the lighting is LED based, then photoluminescent signs cannot be used, as they are not charged with LED lighting.

Any additional luminaires for the above will be subject to an additional cost.

If required, floodlight aiming angles and coordinates can be provided when an order has been placed.

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

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1 Luminaire data

1.1 BELL Lighting Limited, Skyline Elite 240W LED 4000K As... (!A 08859)

1.1.1 Data sheet

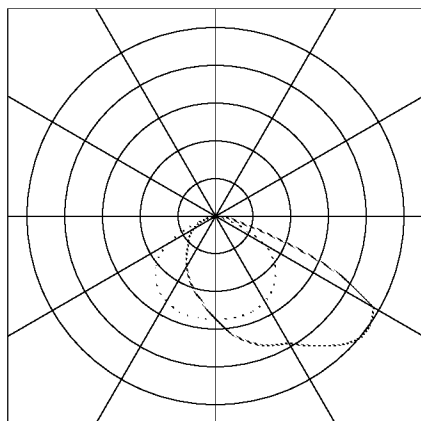
Manufacturer: BELL Lighting Limited

!A 08859 Skyline Elite 240W LED 4000K Asymmetric Floodlight

Luminaire data
Luminaire efficiency : 100%
Luminaire efficacy : 121.36 lm/W
Classification : A40 η 100.0% β 0.0%
CIE Flux Codes : 42 79 98 100 100
UGR 4H 8H : 38.3 / 30.9
Power : 237 W
Luminous flux : 28763 lm

Equipped with
Quantity : 1
Designation :
Colour :
Luminous flux : 28763 lm

Dimensions : 452 mm x 418 mm x 87 mm



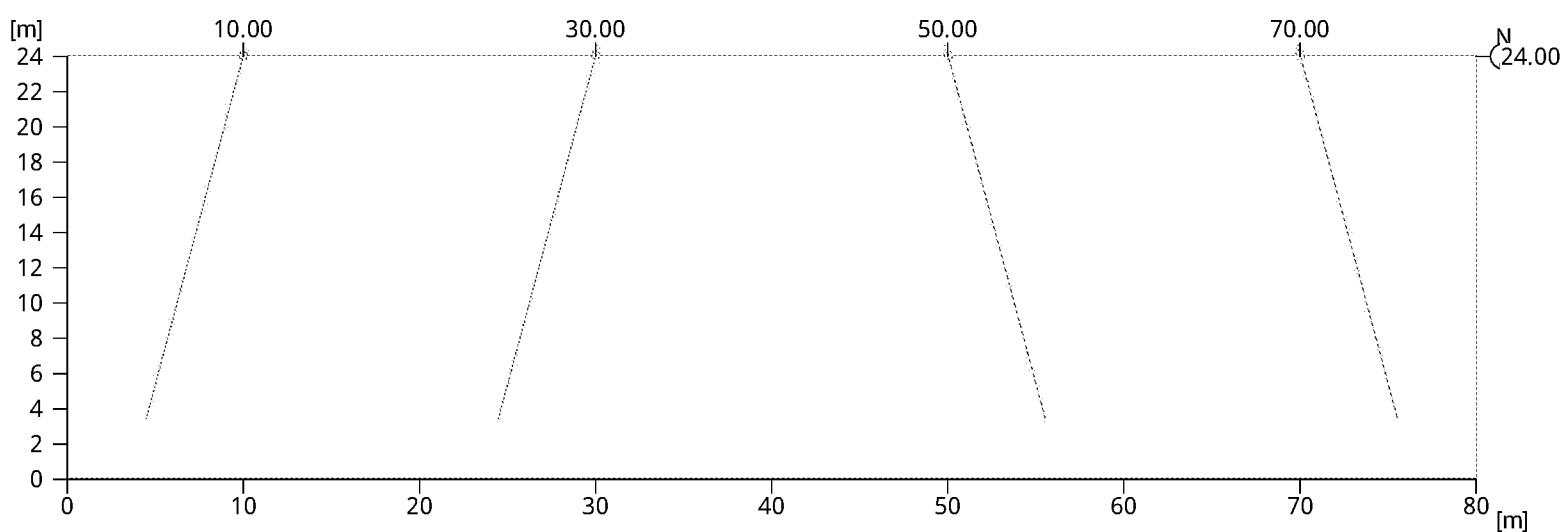
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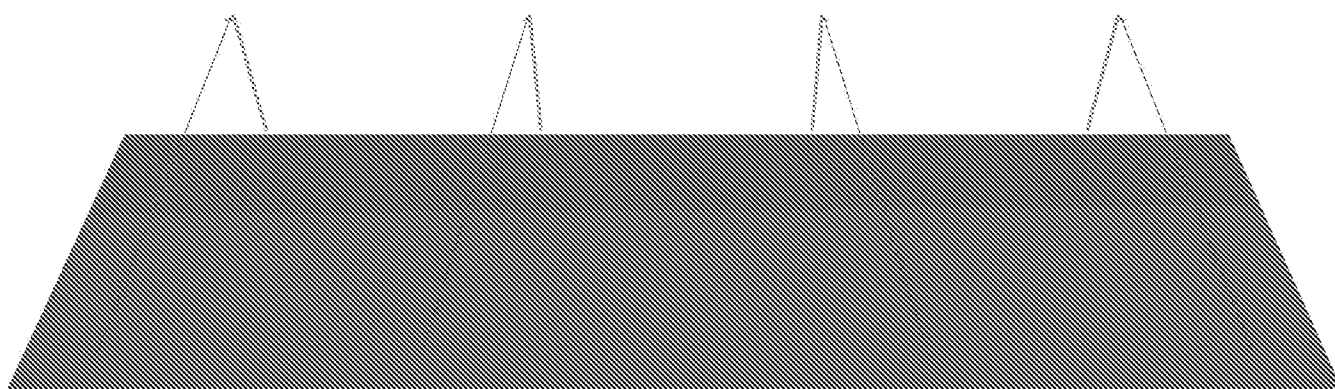
2.1 Description, Storage Yard

2.1.1 Floor plan



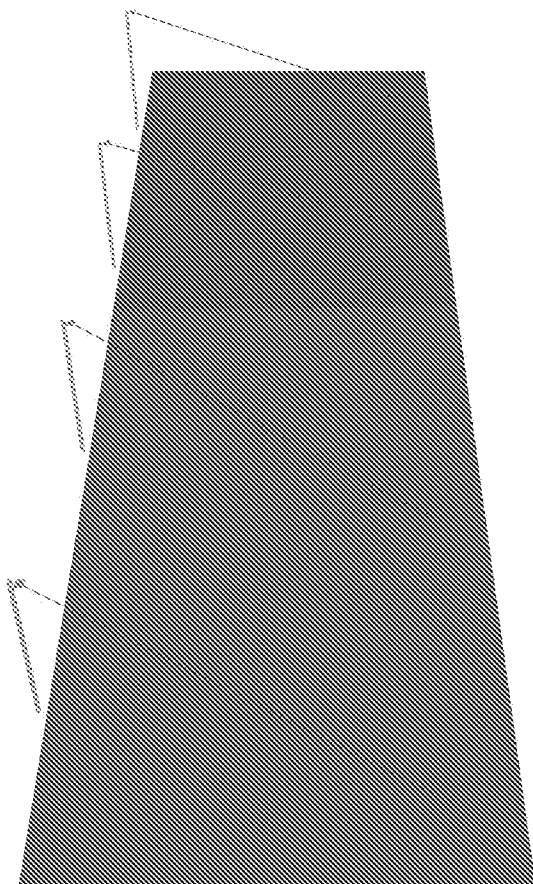
2.1 Description, Storage Yard

2.1.2 3D view, Visualisation A



2.1 Description, Storage Yard

2.1.3 3D view, Visualisation B



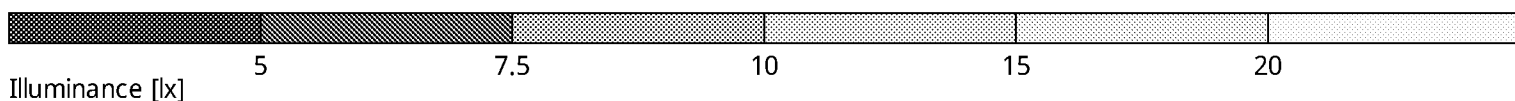
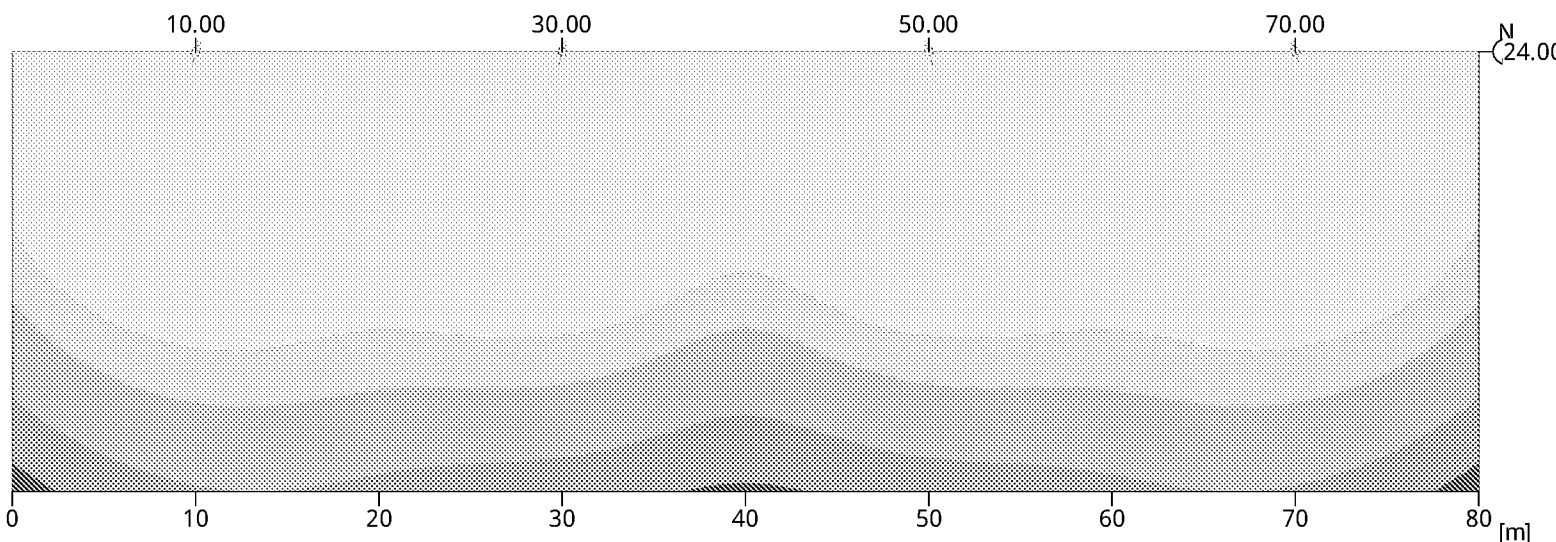
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2 Storage Yard

2.2 Summary, Storage Yard

2.2.1 Result overview, Evaluation area 1



General
 Calculation algorithm used
 Height (phot. centre)
 Maintenance factor

Average indirect fraction
 9.96 m
 0.80

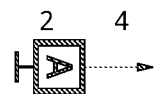
Total luminous flux of all lamps
 Total power
 Total power per area (1920.00 m²)

115052.00 lm
 948.0 W
 0.49 W/m² (1.83 W/m² / 100lx)

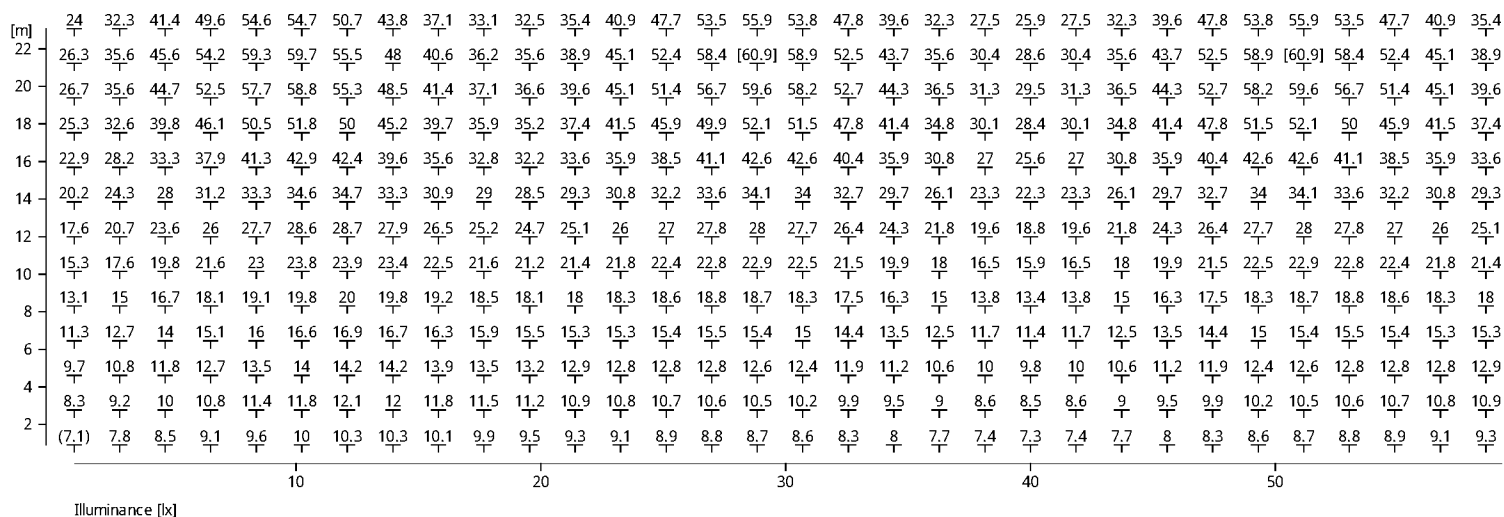
Evaluation area 1	Reference plane 1.1
	Horizontal
E _m	27 lx
E _{min}	7.1 lx
E _{min} /E _m (U _o)	0.26
E _{min} /E _{max} (U _d)	0.12
Upward light ratio (ULR)	0.01
Position	0.00 m

Type No. Make

2	4	BELL Lighting Limited
Order No.	: !A 08859	
Luminaire name	: Skyline Elite 240W LED 4000K Asymmetric Floodlight	
Equipment	: 1 x 237 W / 28763 lm	



2.3.1 Table, Reference plane 1.1 (E)

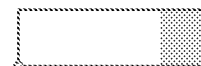


2 Storage Yard

2.3 Calculation results, Storage Yard

2.3.1 Table, Reference plane 1.1 (E)

32.6	33.1	37.1	43.8	50.7	54.7	54.5	49.6	41.4	32.3	24
35.6	36.2	40.6	48	55.5	59.7	59.3	54.2	45.6	35.6	26.3
36.6	37.1	41.4	48.5	55.3	58.8	57.7	52.5	44.7	35.6	26.7
35.2	35.9	39.7	45.2	50	51.8	50.5	46.1	39.8	32.6	25.3
32.2	32.8	35.6	39.6	42.4	42.8	41.3	37.9	33.3	28.2	22.9
28.5	29	30.9	33.3	34.7	34.6	33.3	31.2	28	24.3	20.2
24.7	25.2	26.5	27.9	28.7	28.6	27.7	26	23.6	20.7	17.6
21.2	21.6	22.5	23.4	23.9	23.8	22.9	21.6	19.8	17.6	15.3
18.1	18.5	19.2	19.8	20	19.8	19.1	18.1	16.7	15	13.1
15.5	15.9	16.3	16.7	16.9	16.6	16	15.1	14	12.7	11.3
13.2	13.5	13.9	14.2	14.2	14	13.5	12.7	11.8	10.8	9.7
11.2	11.5	11.8	12	12.1	11.8	11.4	10.8	10	9.2	8.3
9.5	9.9	10.1	10.3	10.3	10	9.6	9.1	8.5	7.8	(7.1)
60					70	[m]				

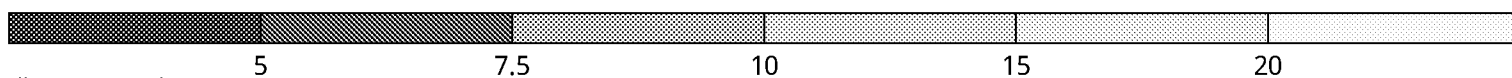
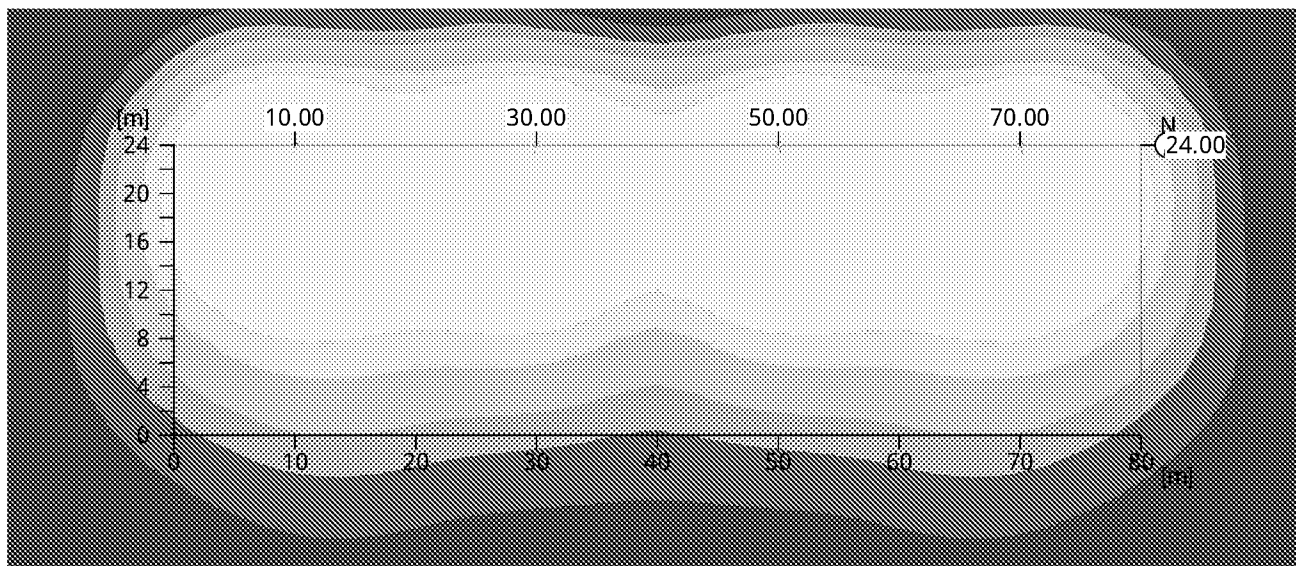


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3 Storage Yard

3.1 Summary, Storage Yard

3.1.1 Result overview, Horizontal Spillage



Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Height (phot. centre) [m]:	9.96 m
Maintenance factor	0.80

Total luminous flux of all lamps	115052 lm
Total power	948 W
Total power per area (1920.00 m ²)	0.49 W/m ²
Upward light ratio (ULR)	0.01

Illuminance

Average illuminance	Em	15.9 lx
Minimum illuminance	Emin	0.7 lx
Maximum illuminance	Emax	58.9 lx
Uniformity Uo	Emin/Em	1:24 (0.04)
Diversity Ud	Emin/Emax	1:88.8 (0.01)

Type No. Make

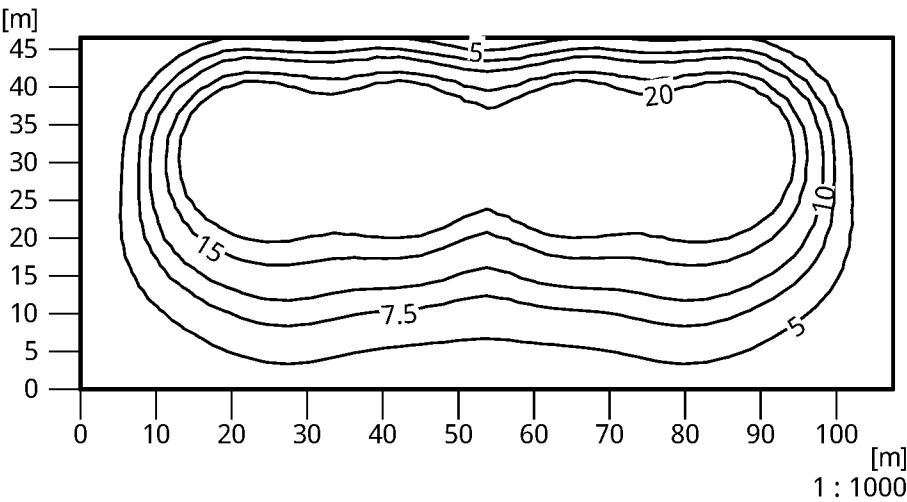
2	4	BELL Lighting Limited
Order No.	: !A 08859	
Luminaire name	: Skyline Elite 240W LED 4000K Asymmetric Floodlight	
Equipment	: 1 x 237 W / 28763 lm	

The ULR value has been calculated without obstruction by other objects.

3 Storage Yard

3.2 Calculation results, Storage Yard

3.2.1 Isolines representation, Horizontal Spillage (E)



Illuminance [lx]

Height reference plane		: 0.00 m
Average illuminance	Em	: 15.9 lx
Minimum illuminance	Emin	: 0.7 lx
Maximum illuminance	E max	: 58.9 lx
Uniformity Uo	Emin/Em	: 1 : 24.03 (0.04)
Diversity Ud	E min/E max	: 1 : 88.82 (0.01)