External Lighting

Installation : Ground Floor

Project number	:	P2152
Customer	:	Fusion Tower - Manchester
Processed by	:	Michael Houlding
Date	:	30.06.2025

Project description:
Fusion Tower - Manchester

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 Ansell Lighting, Wolf 19W WW (AWOLF/BLK)

1.1.1 Data sheet

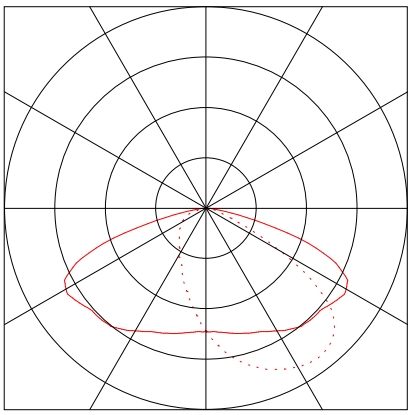
Manufacturer: Ansell Lighting

AWOLF/BLK **Wolf 19W WW**

Luminaire data		
Luminaire efficiency	:	100%
Luminaire efficacy	:	116.35 lm/W
Classification	:	A30 ↓100.0% ↑0.0%
CIE Flux Codes	:	40 76 97 100 100
Glare	:	G*5 / D6
Power	:	19.2 W
Luminous flux	:	2234 lm

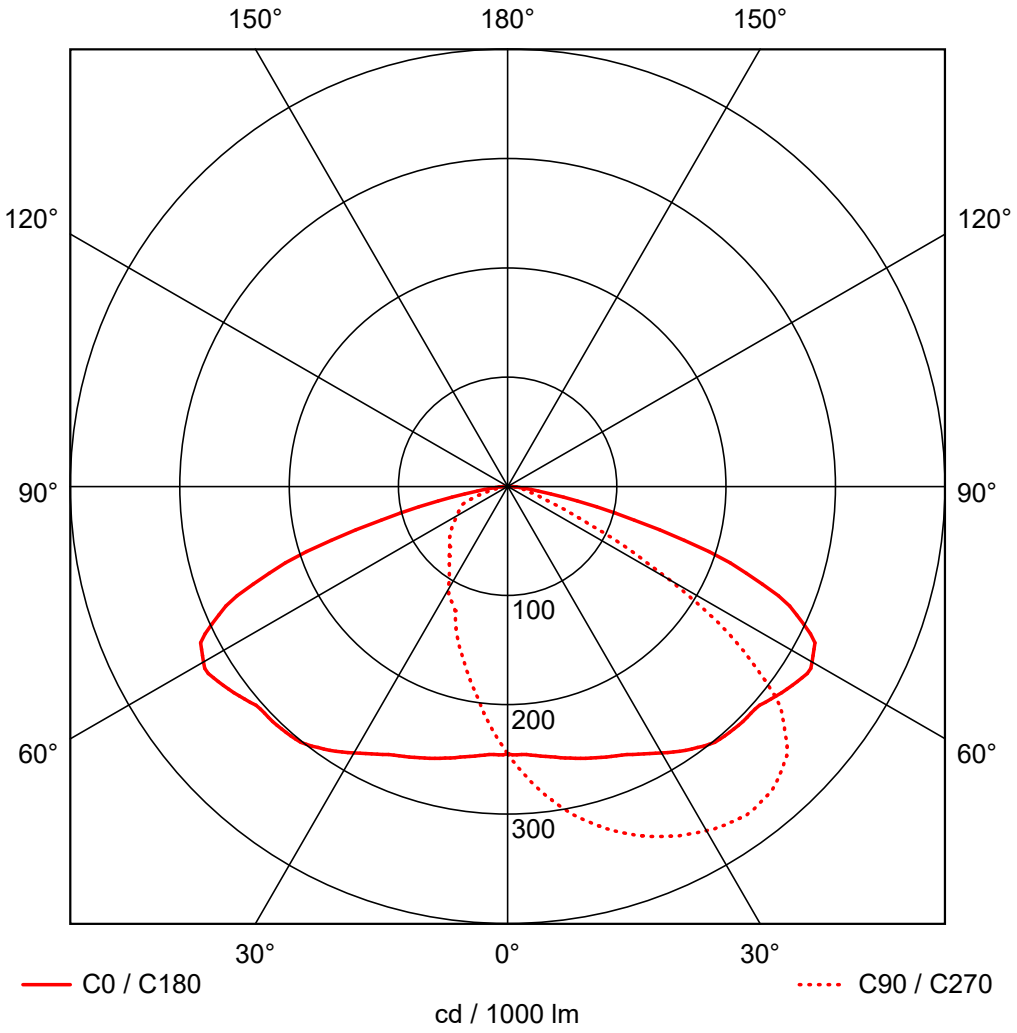
Equipped with		
Quantity	:	1
Designation	:	
Colour	:	3000
Luminous flux	:	2234 lm
Colour reproduction	:	82.9

Dimensions : 240 mm x 340 mm x 200 mm



1.1 Ansell Lighting, Wolf 19W WW (AWOLF/BLK)

1.1.2 LDC



	C90	C180	C270
0°	245	245	245
5°	274	247	215
10°	300	252	186
15°	322	258	161
20°	339	263	138
25°	353	271	119
30°	364	282	109
35°	370	293	93
40°	369	302	83
45°	358	304	76
50°	328	307	69
55°	264	318	61
60°	170	321	54
65°	85	299	49
70°	39	232	39
75°	22	120	19
80°	14	40	10
85°	8	8	5
90°	3	2	2

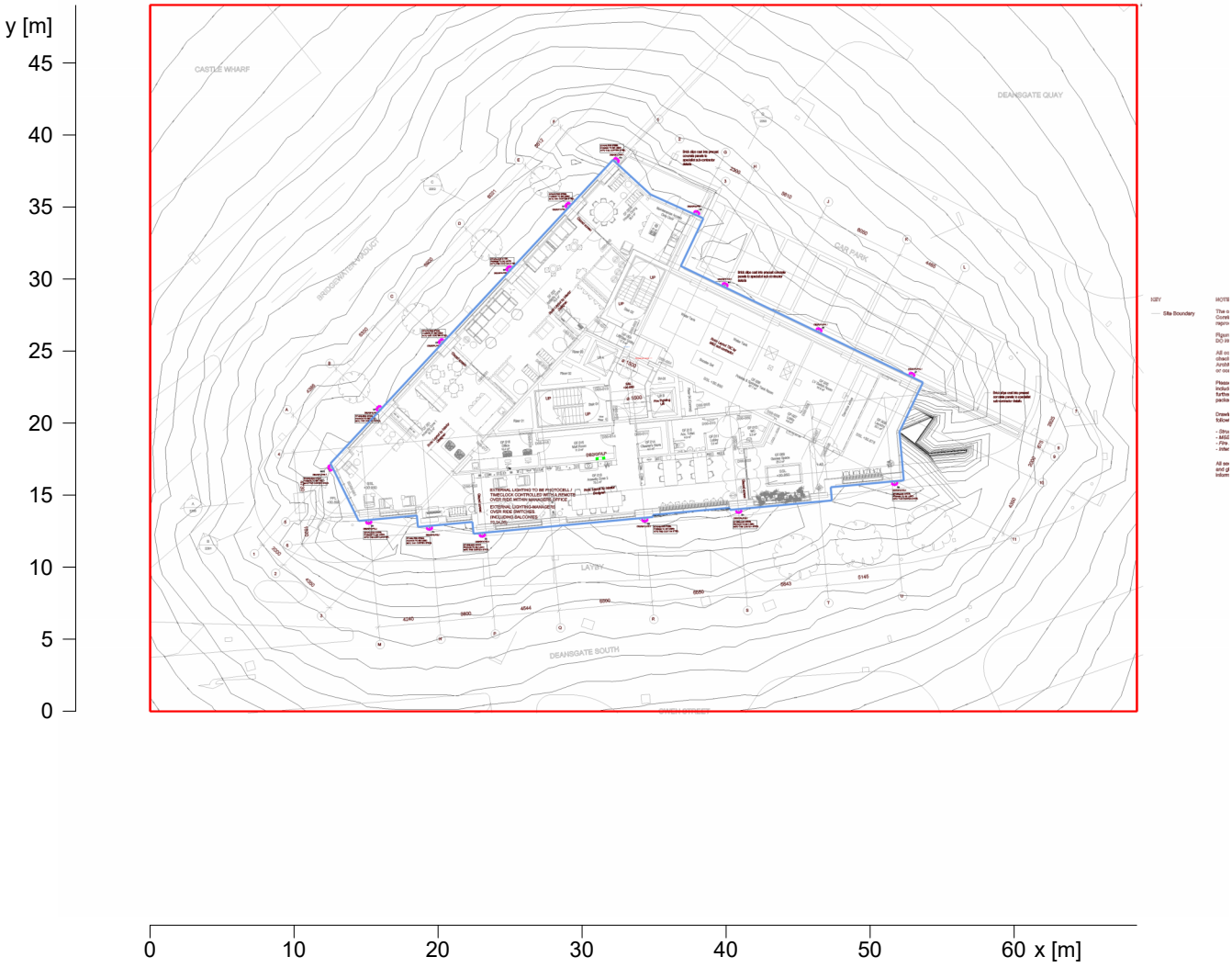
cd / 1000 lm

Manufacturer	: Ansell Lighting	Efficiency factor	: 100%
Order number	: AWOLF/BLK	Luminaire efficacy	: 116.35 lm/W (A30)
Luminaire name	: Wolf 19W WW	Light distribution	: sym. to C90-C270
Equipment	: 1 x 19.2 W / 2234 lm	Beam Angle	: 144.1° C0-C180
Dimensions	: L 240 mm x W 340 mm x H 200 mm		58.9° C90
File name	: Wolf 19W WW.ldt		8.6° C270

2 External Lighting

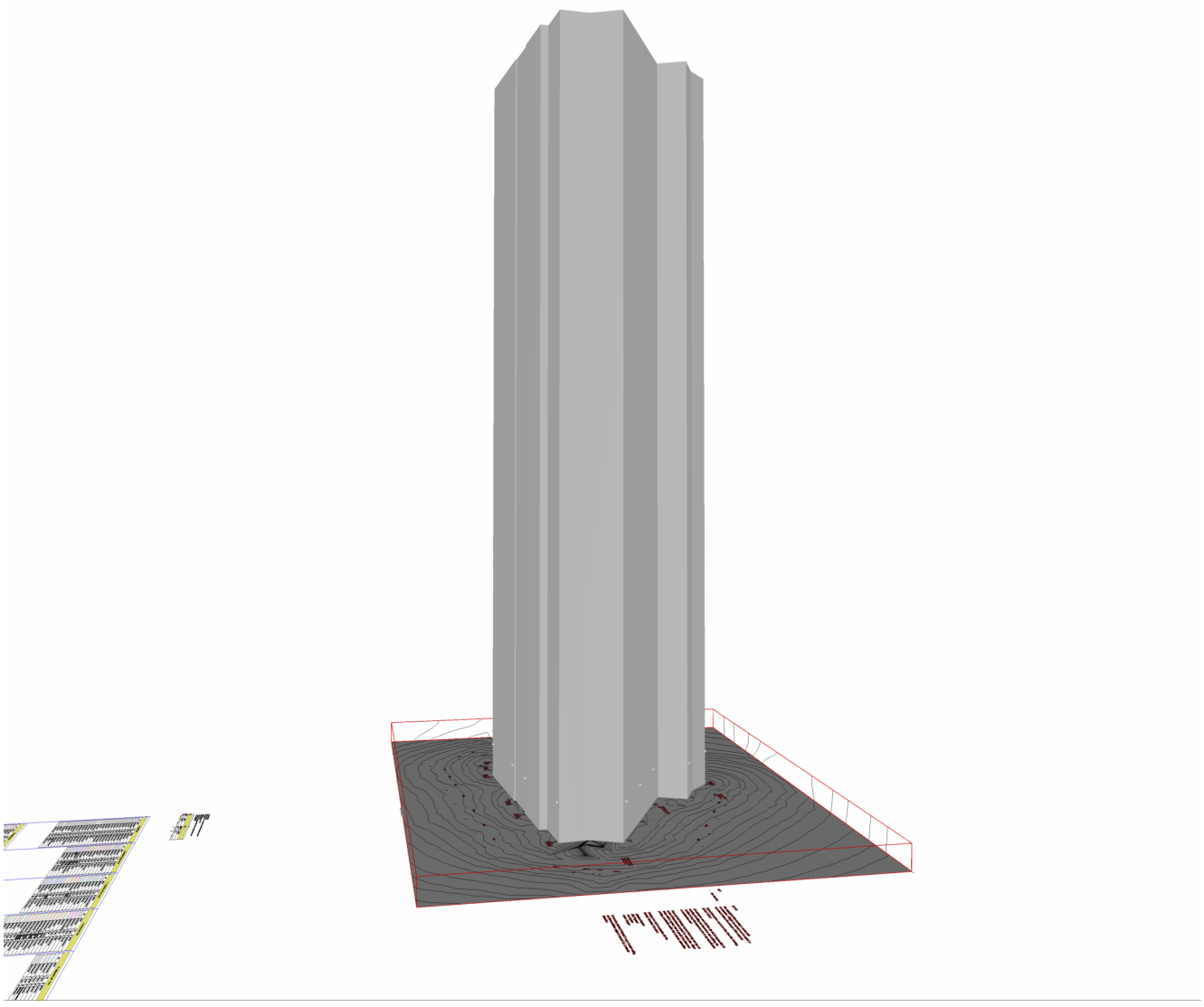
2.1 Description, External Lighting

2.1.1 Floor plan



2.1 Description, External Lighting

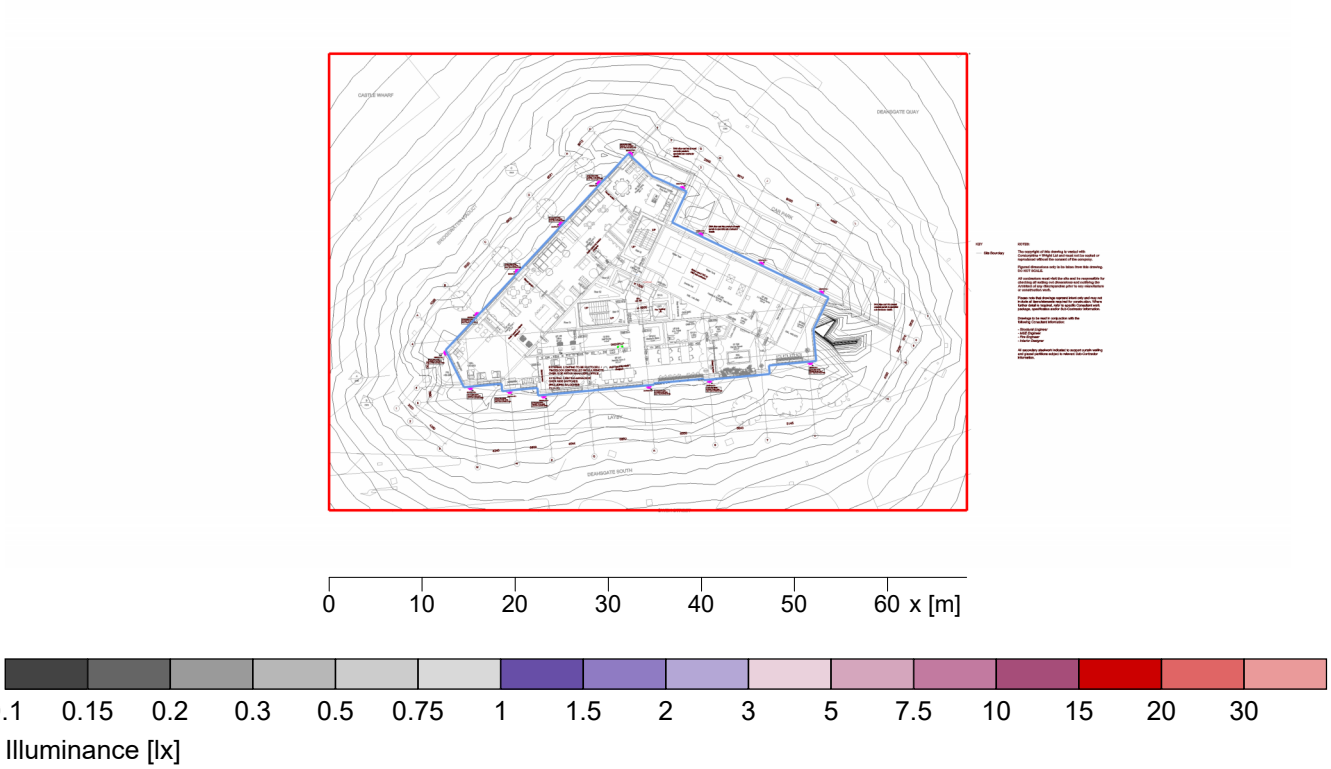
2.1.2 3D view, View 5



2 External Lighting

2.2 Summary, External Lighting

2.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height (phot.centre)	4.20 m
Maintenance factor	see luminaires / maintenance plan
Luminaire luminous flux	0 lm

Evaluation area 1	**Reference plane 1.1**
	Horizontal
$\bar{E}_m$	5.37 lx
E_{min}	0.12 lx
$E_{min}/\bar{E}_m$ (U_o)	0.02
E_{min}/E_{max} (U_d)	0.00
Position	0.00 m

Major surfaces	$\bar{E}_m$		U_o	
M 1.5 (Ceiling)	0.74 lx	✓	0.01	✓
M 1.1 (Wall)	2.34 lx	✓	0.13	✓
M 1.2 (Wall)	0.79 lx	✓	0.50	✓
M 1.3 (Wall)	1.9 lx	✓	0.26	✓
M 1.4 (Wall)	1.56 lx	✓	0.36	✓

Type No.\Make

2 External Lighting

2.2 Summary, External Lighting

2.2.1 Result overview, Evaluation area 1

2 16 x 

Ansell Lighting
Order No. : AWOLF/BLK
Luminaire name : Wolf 19W WW
Equipment : 1 x 19.2 W / 2234 lm
Maintenance factor: 0.82

2 External Lighting

2.3 Calculation results, External Lighting

2.3.2 Table, Reference plane 1.1 (E)

[m]																		
45	**(0.1)**	0.2	0.3	0.4	0.6	1.1	1.8	2.2	2.3	2.1	1.4	0.9	0.6	0.5	0.3	0.2	0.2	**(0.1)**
	0.2	0.2	0.3	0.5	1	2.1	4.4	7.1	7.7	5.5	3	1.9	1.2	0.7	0.5	0.3	0.2	0.2
40	0.2	0.3	0.5	0.8	1.4	2.6	7.3	21.1	29.5	11.1	7.1	3.6	1.9	1.1	0.7	0.4	0.3	0.2
	0.3	0.5	0.8	1.3	2.5	4.7	11.4	26.7		30.7	18	7.2	3.6	2	1.2	0.7	0.4	0.2
35	0.4	0.7	1.5	2.4	4.8	10.9	28.5				17.8	14.4	7.7	4.3	2.3	1.2	0.6	0.3
	0.7	1.3	3	4.4	10.4	24.5						28.3	18.8	10.2	5.5	2.2	0.8	0.4
30	0.9	2.2	6.1	9.3	24.2									27.8	14.6	4.4	1.1	0.5
	1.1	3.1	11.3	23.2											5.2	5	1.6	0.5
25	1.2	3.7	19.3												1.5	4.2	1.4	0.8
	1.5	4	9.2	**[31.3]**	22.1				25.5	30.4	27.8	17.2	10.9	11.5	6.4	2.5	0.8	0.3
20	1.3	3	6.8	13.3	18.6	18.3	14.8	8.8	9.2	9.2	9.5	5.6	4.2	3.7	2.5	1.1	0.4	0.2
	0.7	1.4	2.9	5.1	6.2	5.8	5.2	3.5	3.5	3.1	2.8	2.2	1.6	1.2	0.9	0.5	0.3	0.2
15	0.5	0.8	1.3	1.8	2.4	2.4	2.1	1.6	1.4	1.3	1.2	1	0.8	0.6	0.4	0.3	0.2	**(0.1)**
	10			20			30			40			50			60	[m]	

Illuminance [lx]



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 5.4 lx
Minimum illuminance	E_{min}	: 0.1 lx
Maximum illuminance	E_{max}	: 31.3 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 46.45 (0.02)