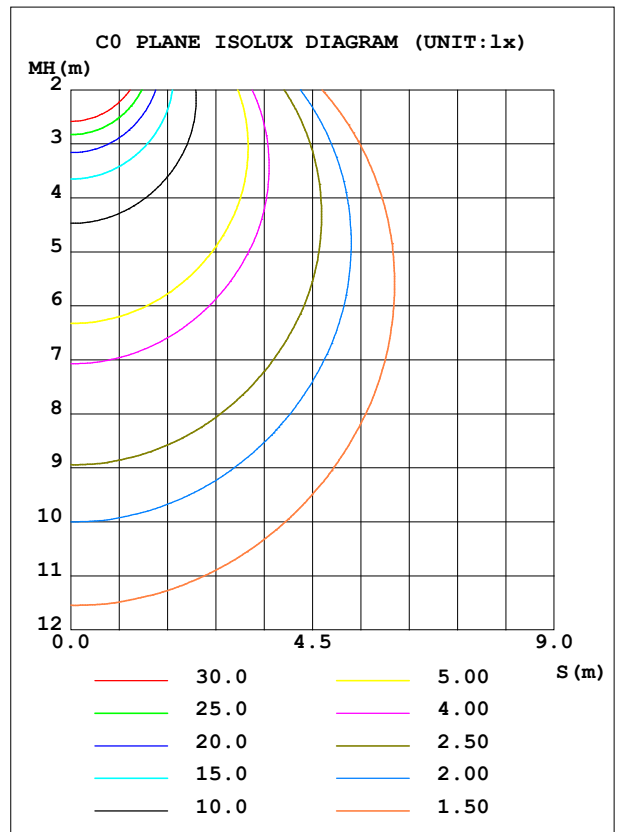
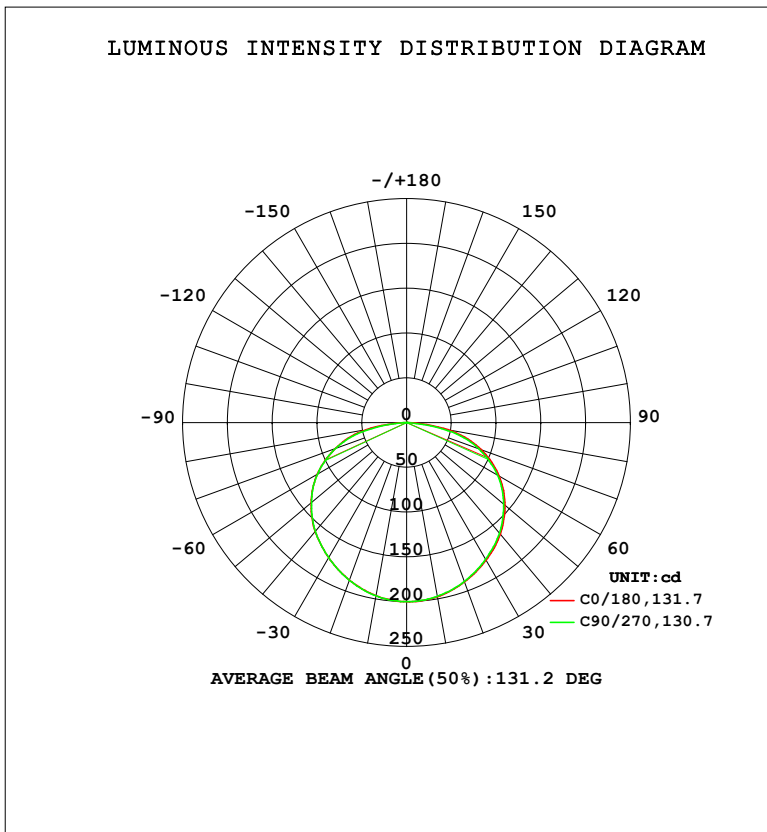


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 60.26 lm/W
MODEL		I <sub>max</sub> (cd)	200.2	S/MH (C0/180)		1.30
NOMINAL POWER (W)	12	LOR (%)	100.0	S/MH (C90/270)		1.30
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	685.24	η UP, DN (C0-180)		0.0, 50.5
NOMINAL FLUX (lm)	685.242	CIE CLASS	DIRECT	η UP, DN (C180-360)		0.0, 49.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		1.50
TEST VOLTAGE (V)	120	η down (%)	100.0	CIBSE SHR MAX		1.55



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3 °C  
 Operators:  
 Test Date: 2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.090m [K=1.0000]  
 Remarks:

**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

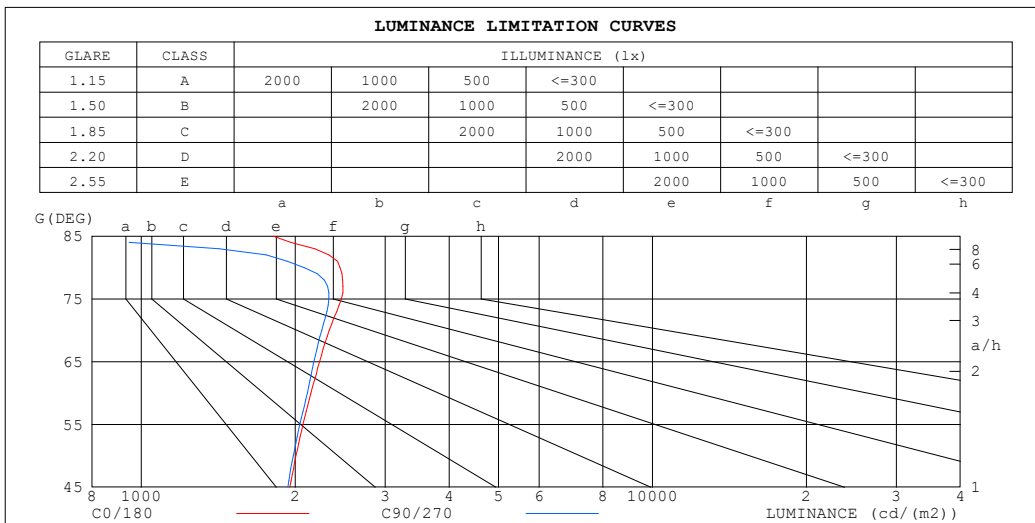
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	197.5	197.4	197.1	196.9	196.4	196.1	196.4	196.7	0- 10	18.94	18.94	2.76,2.76
20	189.2	189.6	188.6	188.1	187.1	186.9	187.5	188.2	10- 20	54.54	73.48	10.7,10.7
30	177.4	177.6	176.3	175.9	174.3	174.1	174.1	176.0	20- 30	84.16	157.6	23,23
40	162.8	163.2	161.3	161.2	158.9	159.1	158.6	160.8	30- 40	105.7	263.3	38.4,38.4
50	143.4	143.6	141.5	141.9	139.2	139.6	138.9	140.8	40- 50	117.1	380.4	55.5,55.5
60	119.4	118.8	117.3	117.1	115.3	115.0	115.0	115.3	50- 60	116.1	496.5	72.5,72.5
70	88.63	87.60	85.62	86.62	84.57	85.11	84.16	84.23	60- 70	101.2	597.7	87.2,87.2
80	47.24	41.58	40.17	46.56	45.77	40.77	39.82	44.39	70- 80	70.92	668.7	97.6,97.6
90	0.5309	0.4302	0.4218	0.5150	0.3433	0.2624	0.2544	0.3230	80- 90	16.59	685.2	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1813	286
80	2447	2083
75	2461	2327
70	2331	2254
65	2232	2173
60	2147	2113
55	2072	2042
50	2007	1983
45	1953	1935

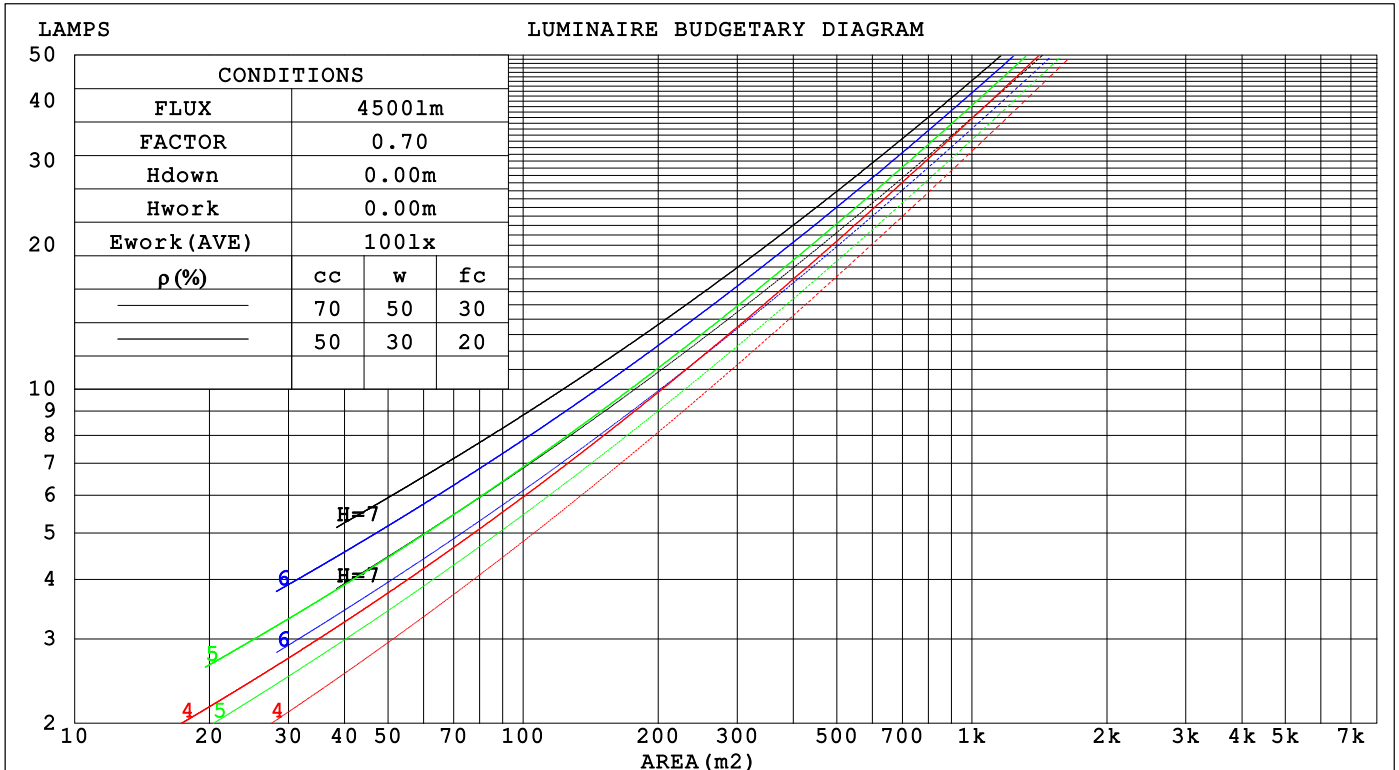
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.02	.98	.93	.90	.96	.92	.96	.92	.89	.92	.89	.86	.88	.86	.83	.81
2.0	.88	.80	.74	.86	.79	.73	.82	.76	.71	.79	.74	.70	.76	.72	.68	.66
3.0	.76	.67	.60	.75	.66	.60	.72	.64	.59	.69	.63	.58	.66	.61	.57	.54
4.0	.67	.57	.50	.66	.57	.50	.63	.55	.49	.61	.54	.48	.58	.53	.48	.45
5.0	.59	.50	.43	.58	.49	.42	.56	.48	.42	.54	.47	.42	.52	.46	.41	.39
6.0	.53	.44	.37	.52	.43	.37	.50	.42	.36	.49	.41	.36	.47	.41	.36	.34
7.0	.48	.39	.32	.47	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.31	.29
8.0	.44	.35	.29	.43	.34	.29	.42	.34	.28	.40	.33	.28	.39	.33	.28	.26
9.0	.40	.31	.26	.39	.31	.26	.38	.31	.25	.37	.30	.25	.36	.30	.25	.23
10.0	.37	.29	.23	.36	.28	.23	.35	.28	.23	.34	.28	.23	.33	.27	.23	.21



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

$\rho_{CC}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.341	.194	.061	.334	.190	.060	.320	.184	.059	.308	.178	.057	.297	.172	.055	
2.0	.317	.174	.053	.311	.171	.053	.299	.166	.052	.288	.162	.051	.278	.157	.050	
3.0	.290	.154	.046	.285	.152	.046	.274	.149	.045	.264	.145	.044	.255	.141	.044	
4.0	.265	.138	.041	.260	.136	.040	.251	.133	.040	.242	.130	.039	.234	.127	.039	
5.0	.243	.124	.036	.239	.123	.036	.231	.120	.035	.223	.118	.035	.216	.115	.035	
6.0	.224	.112	.032	.220	.111	.032	.213	.109	.032	.206	.107	.031	.199	.105	.031	
7.0	.208	.103	.029	.204	.102	.029	.197	.100	.029	.191	.098	.029	.185	.096	.028	
8.0	.193	.094	.027	.190	.094	.026	.184	.092	.026	.178	.090	.026	.173	.089	.026	
9.0	.180	.087	.024	.177	.086	.024	.172	.085	.024	.167	.084	.024	.162	.082	.024	
10.0	.169	.081	.022	.166	.080	.022	.162	.079	.022	.157	.078	.022	.153	.077	.022	

$\rho_{CC}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0																
1.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
2.0	.182	.156	.132	.156	.134	.114	.107	.092	.079	.061	.053	.046	.020	.017	.015	
3.0	.176	.132	.095	.150	.113	.082	.103	.078	.057	.059	.046	.034	.019	.015	.011	
4.0	.168	.114	.071	.144	.099	.062	.099	.069	.043	.057	.040	.026	.018	.013	.008	
5.0	.161	.101	.056	.138	.088	.049	.095	.061	.034	.055	.036	.020	.018	.012	.007	
6.0	.153	.091	.045	.132	.079	.039	.091	.055	.028	.053	.032	.016	.017	.011	.005	
7.0	.146	.083	.038	.125	.072	.033	.086	.050	.023	.050	.030	.014	.016	.010	.005	
8.0	.139	.076	.032	.119	.066	.028	.082	.046	.020	.048	.027	.012	.015	.009	.004	
9.0	.132	.070	.028	.114	.061	.024	.079	.043	.017	.046	.025	.010	.015	.008	.003	
10.0	.126	.065	.024	.108	.057	.021	.075	.040	.015	.044	.024	.009	.014	.008	.003	
10.0	.120	.061	.022	.103	.053	.019	.072	.037	.014	.042	.022	.008	.014	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	17.1	18.7	17.3	18.9	19.1	17.0	18.6	17.3	18.8	19.1
3H	19.2	20.7	19.5	20.9	21.2	19.1	20.6	19.4	20.8	21.0
4H	20.2	21.6	20.5	21.9	22.1	20.0	21.4	20.3	21.7	21.9
6H	21.0	22.3	21.3	22.6	22.9	20.7	22.0	21.0	22.3	22.6
8H	21.2	22.5	21.6	22.8	23.1	20.8	22.1	21.2	22.4	22.7
12H	21.4	22.6	21.7	22.9	23.2	20.8	22.1	21.2	22.4	22.7
4H 2H	17.8	19.3	18.2	19.5	19.8	17.8	19.2	18.1	19.5	19.8
3H	20.2	21.4	20.5	21.7	22.0	20.0	21.3	20.4	21.6	21.9
4H	21.3	22.5	21.7	22.8	23.2	21.1	22.2	21.5	22.6	22.9
6H	22.3	23.3	22.7	23.7	24.0	21.9	22.9	22.3	23.3	23.7
8H	22.6	23.6	23.0	23.9	24.3	22.1	23.1	22.5	23.4	23.8
12H	22.7	23.6	23.2	24.0	24.4	22.1	23.0	22.5	23.4	23.8
8H 4H	21.7	22.7	22.2	23.1	23.5	21.5	22.5	21.9	22.9	23.2
6H	22.9	23.7	23.3	24.1	24.5	22.5	23.3	22.9	23.7	24.1
8H	23.3	24.0	23.7	24.4	24.8	22.8	23.5	23.2	23.9	24.4
12H	23.4	24.1	23.9	24.5	25.0	22.8	23.4	23.3	23.8	24.3
12H 4H	21.8	22.7	22.2	23.0	23.4	21.6	22.5	22.0	22.8	23.3
6H	22.9	23.6	23.4	24.1	24.5	22.6	23.3	23.0	23.7	24.2
8H	23.3	24.0	23.8	24.4	24.9	22.9	23.5	23.3	23.9	24.4

Variations with the observer position at spacings(CIE Pub.117):		
S = 1.0H	+ 0.1 / - 0.1	+ 0.1 / - 0.1
1.5H	+ 0.2 / - 0.3	+ 0.2 / - 0.3
2.0H	+ 0.1 / - 0.4	+ 0.1 / - 0.4

CIE Pub.117, 685.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.3)  
 Area: 0.111111 m2

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 22.5DEG	γ Interval: 1.0DEG
Test Speed: HIGH	Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Temperature:25.3°C	Humidity:65.0%
Operators:	Test Distance:3.090m [K=1.0000]
Test Date:2022-12-28	Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

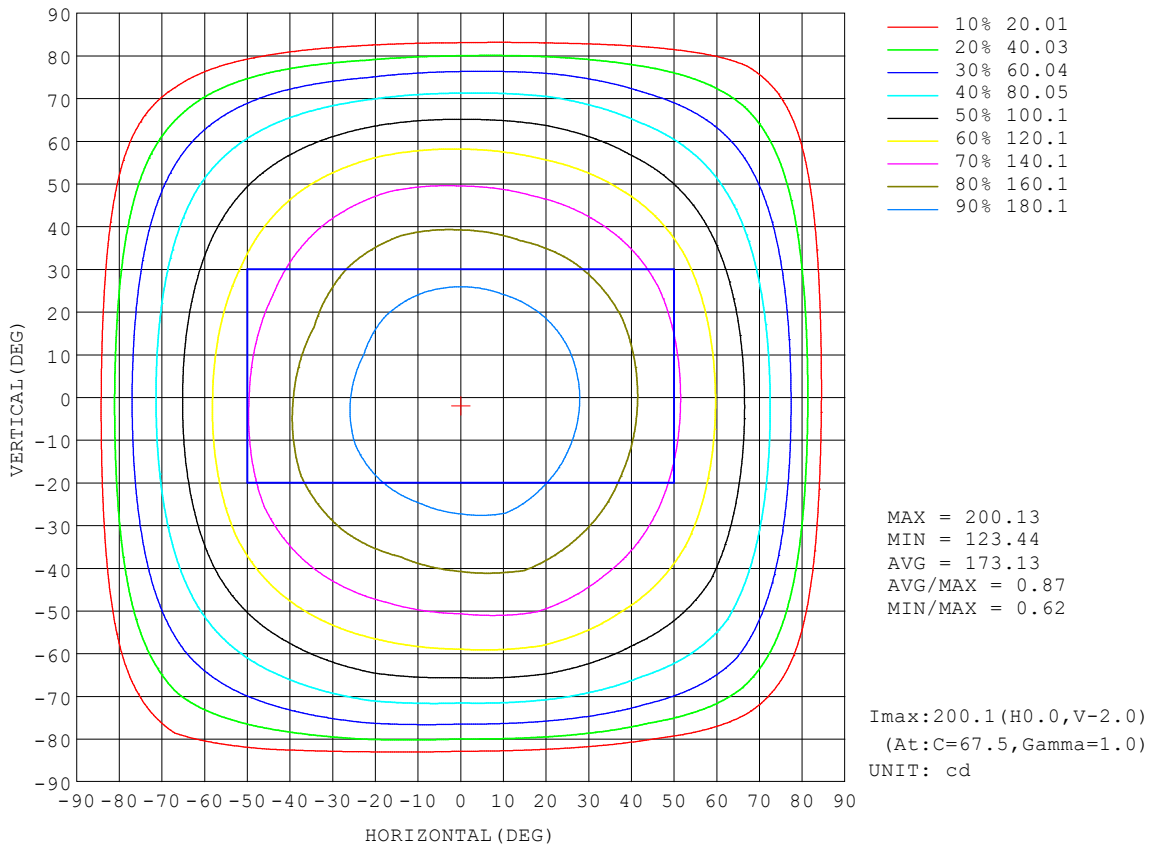
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	54	42	35	53	42	35	52	41	34	28
0.80	64	52	44	63	51	44	61	50	43	36
1.00	72	60	53	71	60	52	69	61	52	44
1.25	80	68	60	78	68	60	75	66	59	51
1.50	85	74	66	83	73	66	80	71	65	57
2.00	92	83	76	90	82	75	87	79	73	65
2.50	97	88	81	94	87	80	90	84	79	70
3.00	100	93	87	98	91	86	94	88	83	74
4.00	105	98	93	102	97	92	98	93	89	80
5.00	107	102	98	105	100	96	100	96	93	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:



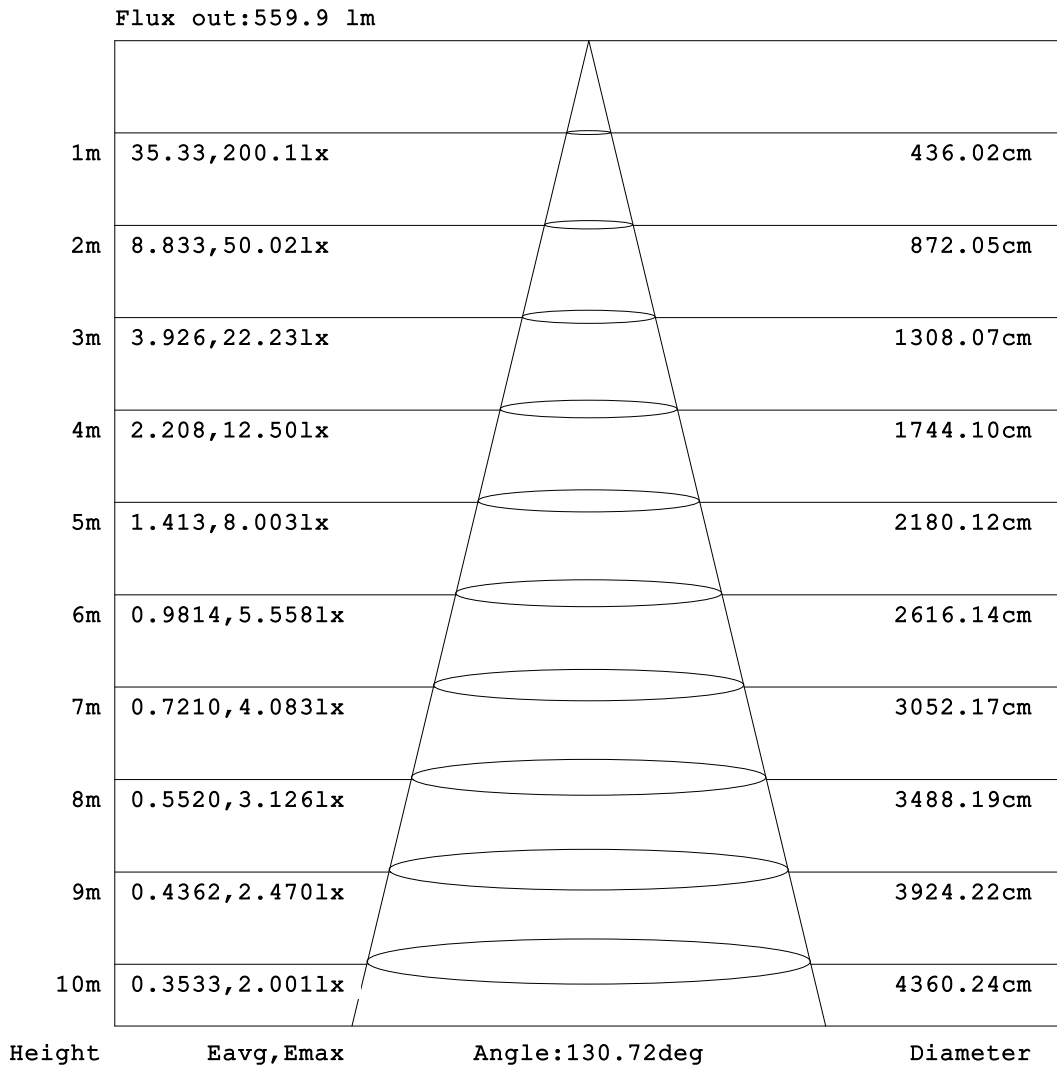
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:



**AAI Figure**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:



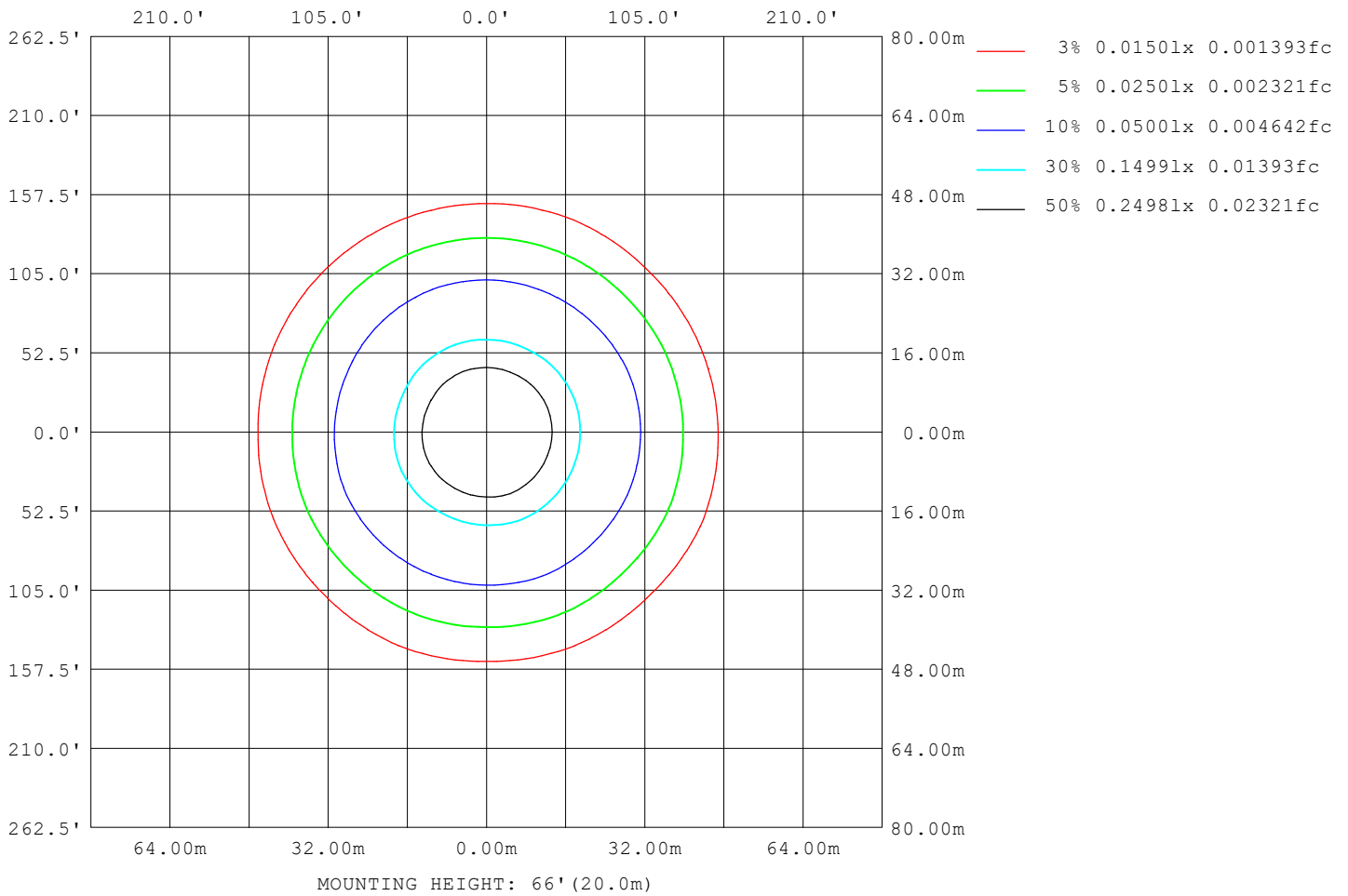
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**ISOLUX DIAGRAM**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**LED Avg.L Report**

Test:U:119.86V I:0.1304A P:11.372W PF:0.7273 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:685.242x1 lm		
NAME: DS-LED-4-S12W-5CCT-WH-SQ	TYPE:	WEIGHT:
SPEC.: 3000K 90	DIM.:	SERIAL No.:
MFR.: Light by Lotus	SUR.:	Shielding Angle:

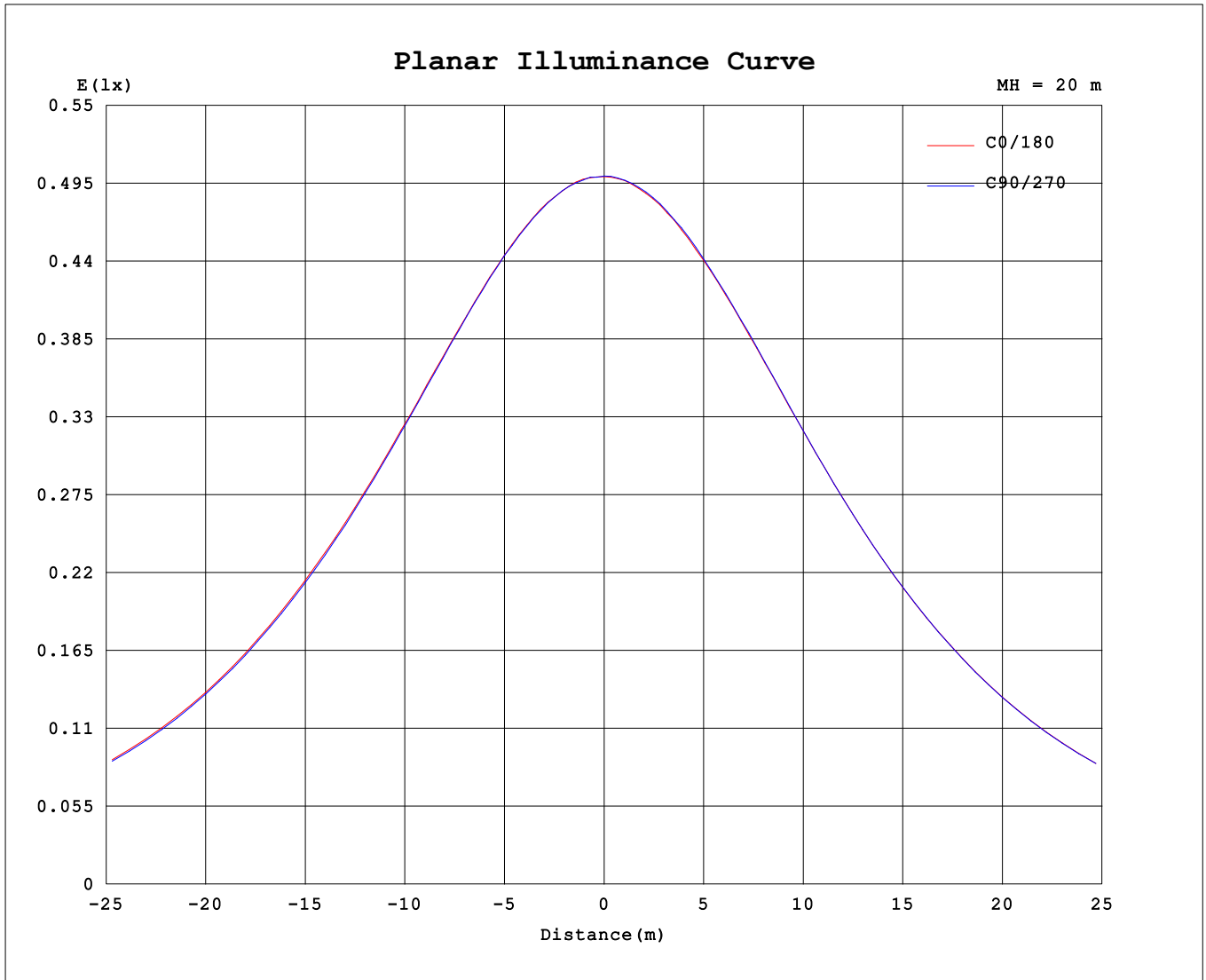
AvgL	cd/m2
L_0~180 (65) av	2187
L_0~180 (75) av	2406
L_0~180 (85) av	1676
L_90~270 (65) av	2154
L_90~270 (75) av	2305
L_90~270 (85) av	337
L_45 (65) av	2168
L_45 (75) av	2356
L_45 (85) av	1025

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:  
 Test Date:2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.090m [K=1.0000]  
 Remarks:

**Planar Illuminance Curve**



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3 °C  
 Operators:  
 Test Date: 2022-12-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.090m [K=1.0000]  
 Remarks:

