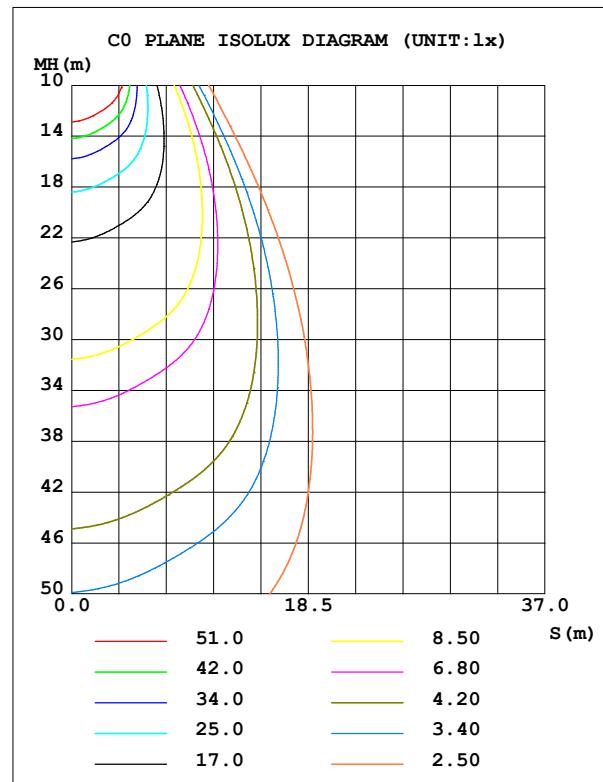
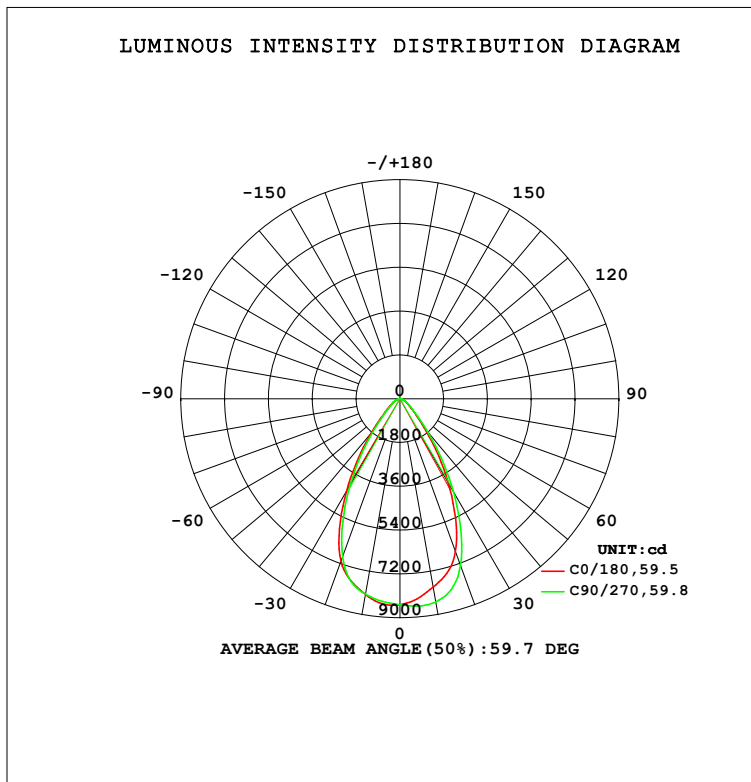


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 121.54 lm/W
LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K		I _{max} (cd)	8565	S/MH (C0/180)		0.91
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)		0.89
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	8891.8	η UP,DN (C0-180)		0.0,50.6
NOMINAL FLUX (lm)	8891.85	CIE CLASS	DIRECT	η UP,DN (C180-360)		0.0,49.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.75
TEST VOLTAGE (V)	220.1	η down (%)	100.0	CIBSE SHR MAX		0.95



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	7860	8196	8475	8397	8166	8236	8153	7964	0- 10	794.9	794.9	8.94,8.94
20	6675	6911	7282	7247	7091	7031	6897	6691	10- 20	2172	2967	33.4,33.4
30	3959	4114	4399	4431	4408	4266	4106	3944	20- 30	2573	5540	62.3,62.3
40	1569	1667	1792	1858	1833	1770	1643	1573	30- 40	1772	7312	82.2,82.2
50	614.9	646.5	669.9	701.8	688.2	678.4	632.4	618.7	40- 50	821.2	8134	91.5,91.5
60	314.4	329.9	333.8	355.5	341.4	344.8	327.4	322.4	50- 60	419.7	8553	96.2,96.2
70	141.2	155.0	153.2	172.2	158.6	164.9	152.2	150.1	60- 70	237.6	8791	98.9,98.9
80	24.31	30.14	32.61	38.60	33.74	34.76	26.95	25.63	70- 80	91.89	8883	99.9,99.9
90	1.163	1.166	1.159	1.169	1.138	1.144	1.175	1.234	80- 90	9.051	8892	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		

Conical surface Flux(90deg): 7803.6 lm

%lum = 87.8%

%lamp = 87.8%

Conical surface Flux(120deg): 8553.3 lm

%lum = 96.2%

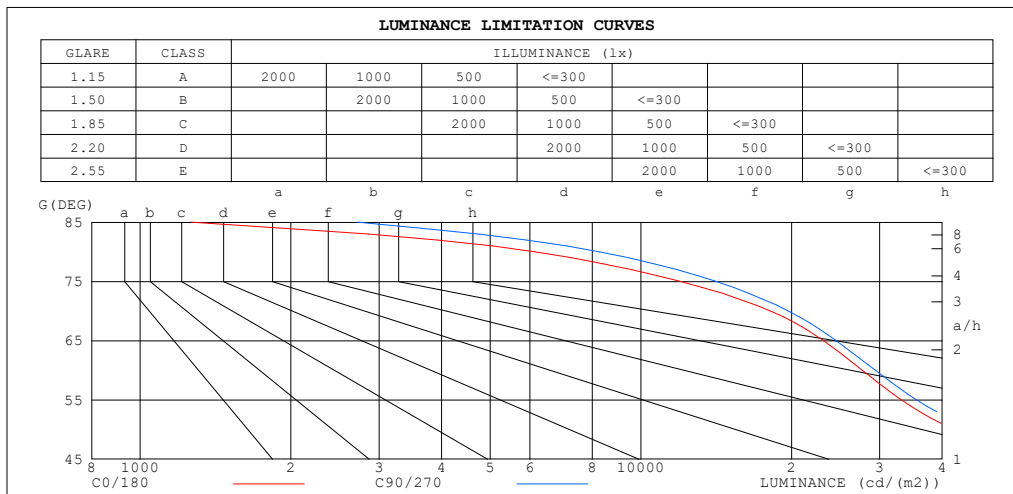
%lamp = 96.2%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1265	2721
80	6166	8272
75	11998	14149
70	18184	19728
65	23178	24559
60	27701	29408
55	33152	35550
50	42145	45912
45	58422	65475

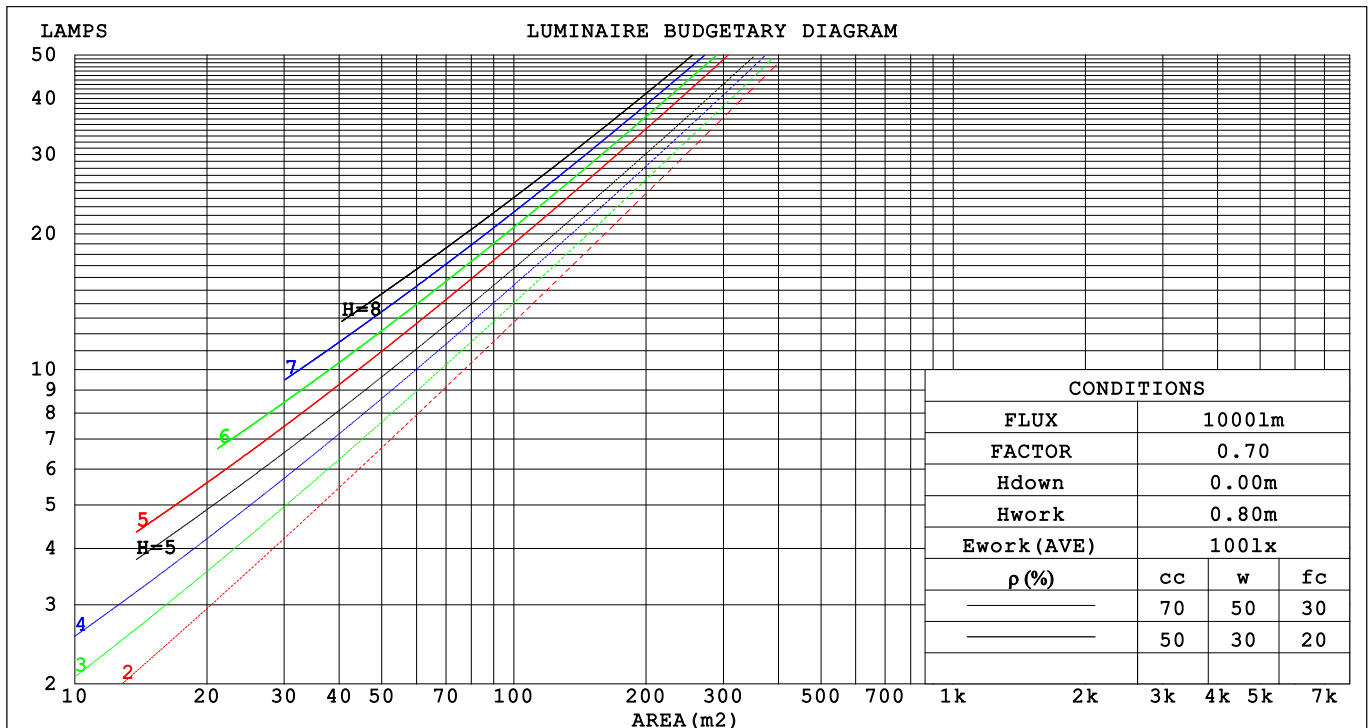
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	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	1.10	1.07	1.04	1.07	1.05	1.03	1.03	1.01	.99	.00	.98	.97	.96	.95	.94	.92	
2.0	1.01	.96	.92	.99	.95	.91	.96	.92	.89	.93	.90	.87	.90	.88	.86	.84	
3.0	.93	.87	.83	.92	.86	.82	.89	.84	.81	.86	.83	.80	.84	.81	.78	.77	
4.0	.86	.80	.75	.85	.79	.75	.83	.78	.74	.81	.76	.73	.79	.75	.72	.70	
5.0	.80	.73	.69	.79	.73	.68	.77	.72	.68	.75	.71	.67	.74	.70	.66	.65	
6.0	.74	.68	.63	.74	.67	.63	.72	.67	.62	.71	.66	.62	.69	.65	.62	.60	
7.0	.70	.63	.58	.69	.63	.58	.68	.62	.58	.66	.61	.58	.65	.61	.57	.56	
8.0	.65	.59	.54	.65	.58	.54	.63	.58	.54	.62	.57	.54	.61	.57	.53	.52	
9.0	.61	.55	.51	.61	.55	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.48	
10.0	.58	.51	.47	.57	.51	.47	.56	.51	.47	.56	.51	.47	.55	.50	.47	.45	



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.200	.114	.036	.193	.110	.035	.180	.103	.033	.169	.097	.031	.158	.092	.030	
2.0	.192	.105	.032	.187	.103	.032	.176	.098	.030	.166	.093	.029	.157	.089	.028	
3.0	.183	.097	.029	.178	.095	.029	.169	.091	.028	.160	.088	.027	.152	.084	.026	
4.0	.173	.090	.026	.169	.088	.026	.161	.085	.025	.153	.082	.025	.146	.080	.024	
5.0	.164	.084	.024	.161	.082	.024	.153	.080	.024	.147	.077	.023	.141	.075	.023	
6.0	.156	.078	.022	.153	.077	.022	.146	.075	.022	.140	.073	.021	.135	.071	.021	
7.0	.148	.073	.021	.145	.072	.021	.140	.071	.020	.134	.069	.020	.129	.067	.020	
8.0	.141	.069	.019	.138	.068	.019	.133	.067	.019	.129	.065	.019	.124	.064	.019	
9.0	.134	.065	.018	.132	.064	.018	.128	.063	.018	.123	.062	.018	.119	.061	.018	
10.0	.128	.062	.017	.126	.061	.017	.122	.060	.017	.118	.059	.017	.115	.058	.017	

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)										
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.050	.019	.017	.016		
2.0	.159	.132	.110	.136	.114	.095	.093	.079	.066	.054	.046	.039	.017	.015	.013		
3.0	.148	.114	.087	.127	.098	.075	.087	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.138	.099	.070	.119	.086	.060	.082	.060	.043	.047	.035	.025	.015	.011	.008		
5.0	.130	.088	.057	.112	.076	.050	.077	.053	.035	.045	.031	.021	.014	.010	.007		
6.0	.123	.079	.047	.105	.068	.041	.073	.048	.029	.042	.028	.017	.014	.009	.006		
7.0	.116	.071	.040	.100	.062	.035	.069	.043	.025	.040	.026	.015	.013	.008	.005		
8.0	.110	.065	.034	.095	.057	.030	.066	.040	.021	.038	.023	.013	.012	.008	.004		
9.0	.105	.060	.030	.091	.052	.026	.063	.037	.019	.037	.022	.011	.012	.007	.004		
10.0	.101	.056	.026	.087	.049	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm											
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.: DARKON					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	15.4	16.5	15.6	16.6	16.8	15.8	16.9	16.0	17.0	17.2	
	3H	15.7	16.7	16.0	16.9	17.1	16.1	17.1	16.4	17.3	17.5
	4H	15.8	16.7	16.0	16.9	17.1	16.2	17.1	16.4	17.3	17.5
	6H	15.7	16.6	16.0	16.8	17.1	16.1	17.0	16.4	17.2	17.5
	8H	15.7	16.5	16.0	16.8	17.0	16.1	16.9	16.4	17.2	17.5
	12H	15.6	16.4	16.0	16.7	17.0	16.0	16.8	16.4	17.1	17.4
4H	2H	15.5	16.4	15.8	16.6	16.9	15.9	16.8	16.1	17.0	17.2
	3H	15.9	16.7	16.3	17.0	17.3	16.3	17.1	16.6	17.3	17.6
	4H	16.0	16.8	16.4	17.1	17.4	16.4	17.1	16.7	17.4	17.7
	6H	16.0	16.7	16.4	17.0	17.3	16.4	17.0	16.7	17.3	17.7
	8H	16.0	16.6	16.4	16.9	17.3	16.3	16.9	16.7	17.3	17.7
	12H	15.9	16.5	16.3	16.8	17.2	16.3	16.8	16.7	17.2	17.6
8H	4H	16.0	16.6	16.4	17.0	17.3	16.3	16.9	16.7	17.3	17.6
	6H	16.0	16.5	16.4	16.9	17.3	16.4	16.8	16.8	17.2	17.7
	8H	16.0	16.4	16.4	16.8	17.3	16.3	16.8	16.8	17.2	17.6
	12H	15.9	16.3	16.4	16.7	17.2	16.3	16.6	16.8	17.1	17.6
12H	4H	16.0	16.5	16.4	16.9	17.3	16.3	16.8	16.7	17.2	17.6
	6H	16.0	16.4	16.4	16.8	17.3	16.3	16.7	16.8	17.2	17.6
	8H	15.9	16.3	16.4	16.7	17.2	16.3	16.7	16.8	17.1	17.6
Variations with the observer position at spacings:											
S = 1.0H	+ 1.3 / - 1.9					+ 1.5 / - 2.0					
1.5H	+ 2.3 / - 1.4					+ 2.7 / - 1.6					
2.0H	+ 1.9 / - 1.3					+ 2.3 / - 1.4					

CIE Pub.117, 8892 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 7.6)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

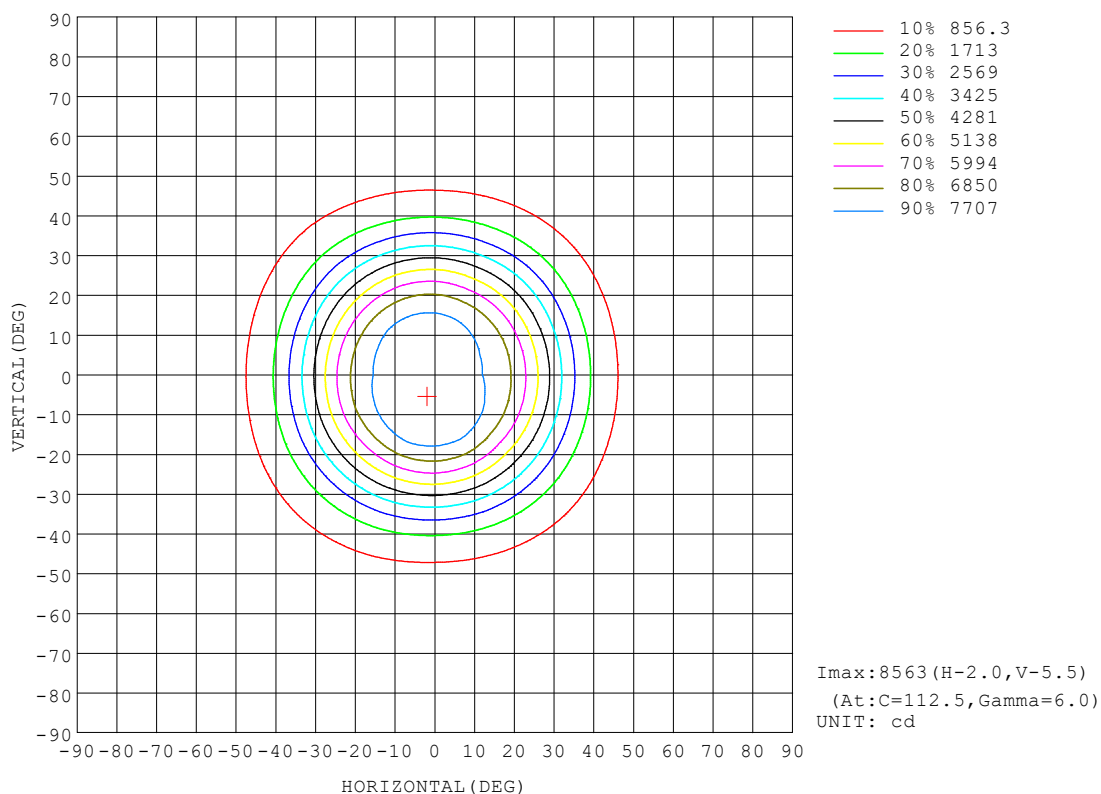
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	80	73	68	80	73	68	79	72	68	64
0.80	89	82	77	88	81	77	87	81	76	72
1.00	94	88	83	93	87	83	92	87	82	78
1.25	99	93	89	98	92	88	96	91	87	83
1.50	102	97	93	101	96	92	99	94	91	86
2.00	106	101	97	104	100	96	102	98	95	89
2.50	108	104	100	106	102	99	103	100	97	91
3.00	110	106	103	108	105	102	105	102	99	93
4.00	112	109	106	110	107	105	107	104	102	95
5.00	114	111	109	112	109	107	108	106	104	96
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:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

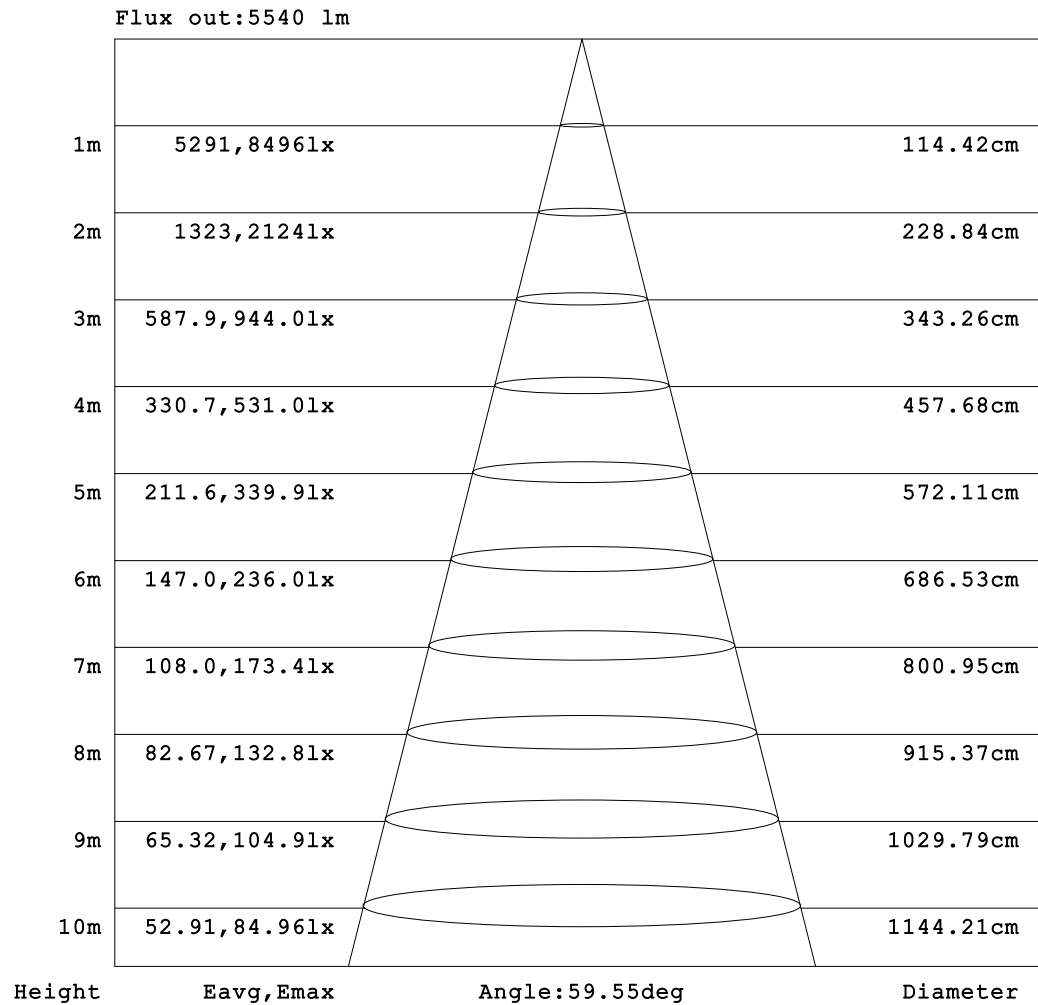


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JEFF
 Test Date:14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:



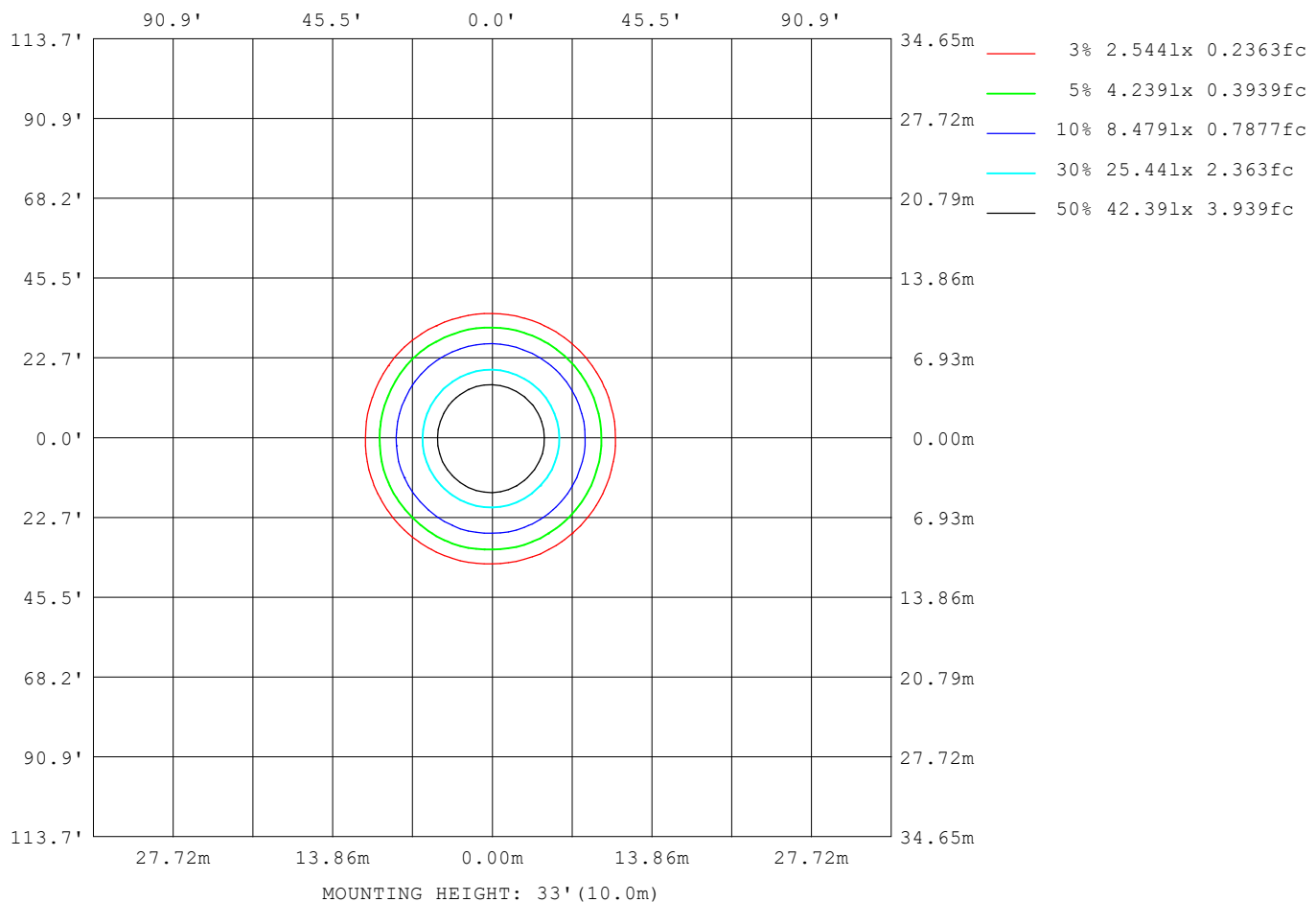
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JEFF
 Test Date:14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JEFF
 Test Date:14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:240.02V I:0.3133A P:73.158W PF:0.9728 Freq:50.09Hz Lamp Flux:8891.85x1 lm		
NAME: LUMASCAPE HUNG AIR ENGINE_BLK_58 DEG_4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: DARKON	SUR.:	Shielding Angle:

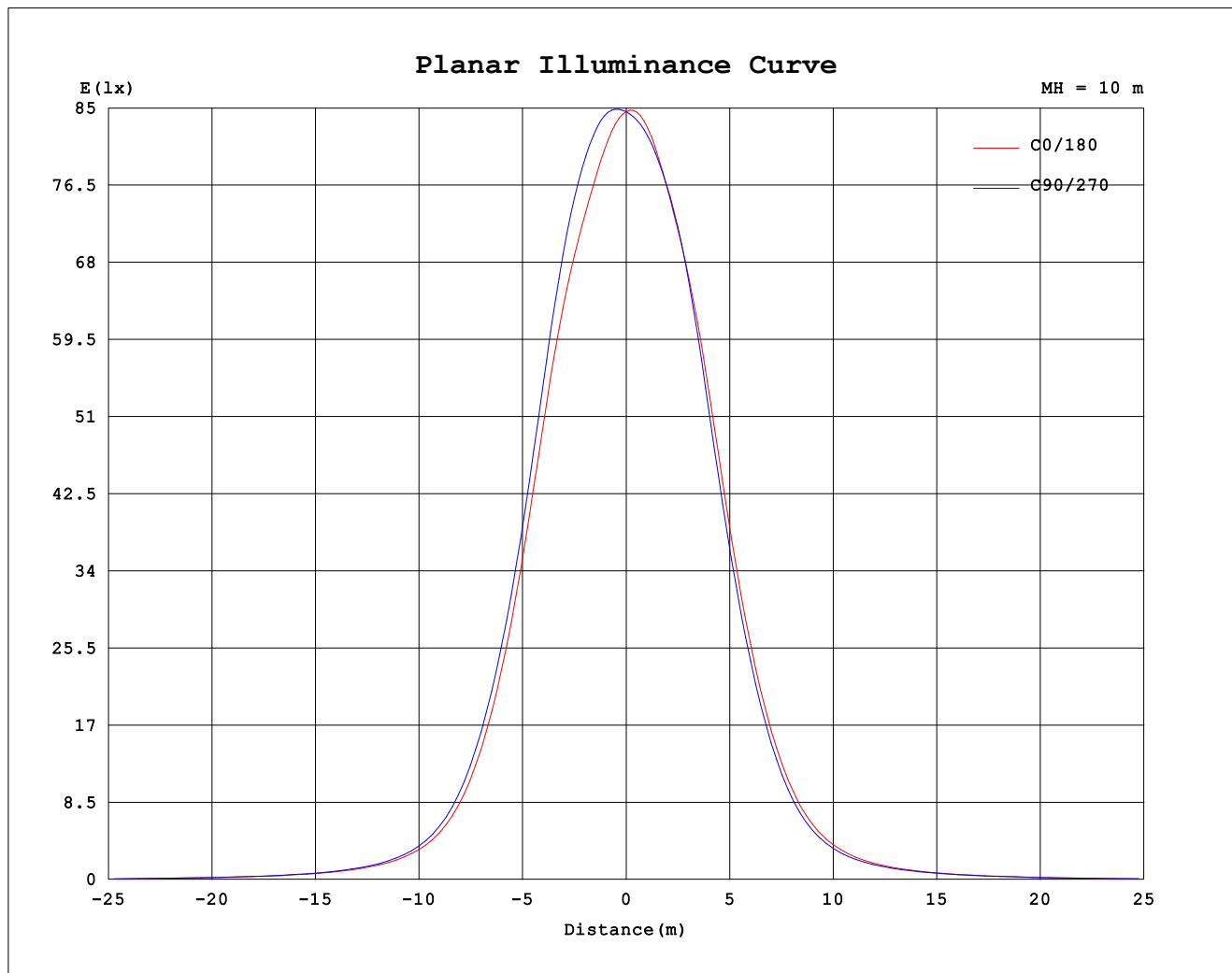
AvgL	cd/m2
L_0~180 (65) av	24167
L_0~180 (75) av	13297
L_0~180 (85) av	1863
L_90~270 (65) av	24504
L_90~270 (75) av	13604
L_90~270 (85) av	2246
L_45 (65) av	25259
L_45 (75) av	15367
L_45 (85) av	2110

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:14 February 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JEFF
 Test Date: 14 February 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

```