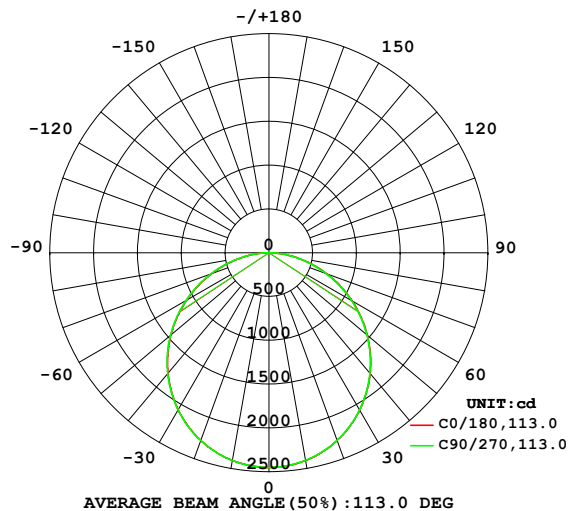


LUMINAIRE PHOTOMETRIC TEST REPORT

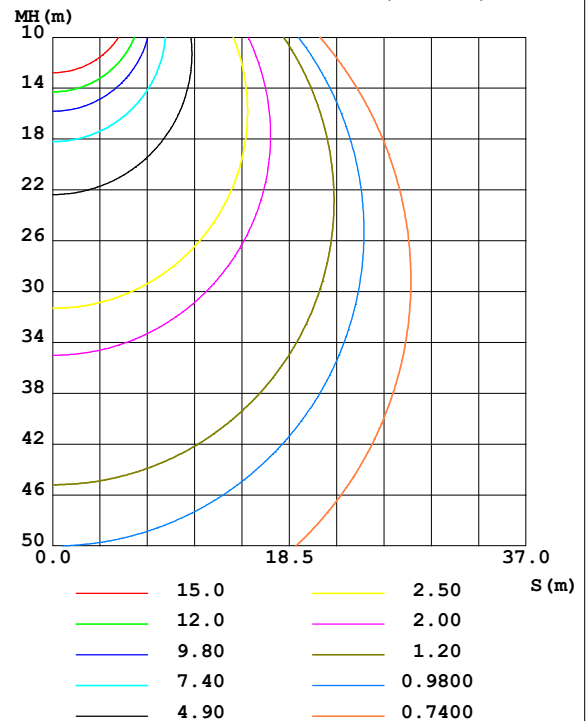
Test:U:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
4x CLE Quantum G3 401mm 2500lm 840 ADV		Eff: 120.14 lm/W			
NOMINAL POWER(W)		Imax(cd)	2451	S/MH(C0/180)	1.26
RATED VOLTAGE(V)	230.0	LOR(%)	100.0	S/MH(C90/270)	1.26
NOMINAL FLUX(lm)	7093.92	TOTAL FLUX(lm)	7093.9	η UP,DN(C0-180)	0.0,49.9
LAMPS INSIDE	1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1
TEST VOLTAGE(V)	230	η up(%)	0.0	CIBSE SHR NOM	1.25
		η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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	2408	2407	2406	2406	2407	2407	2408	2409	0- 10	231.8	231.8	3.27,3.27
20	2280	2278	2278	2277	2279	2280	2280	2282	10- 20	664.3	896.1	12.6,12.6
30	2073	2071	2070	2068	2071	2073	2073	2076	20- 30	1007	1903	26.8,26.8
40	1798	1795	1793	1791	1794	1796	1798	1802	30- 40	1215	3118	43.9,43.9
50	1467	1463	1461	1458	1462	1466	1468	1472	40- 50	1262	4380	61.7,61.7
60	1093	1089	1087	1083	1088	1092	1096	1100	50- 60	1146	5525	77.9,77.9
70	701.3	696.6	694.2	689.8	692.8	697.2	701.0	705.3	60- 70	885.6	6411	90.4,90.4
80	314.8	310.2	307.7	303.8	307.5	312.0	315.4	318.8	70- 80	529.4	6940	97.8,97.8
90	5.571	4.568	4.523	4.559	4.723	5.006	5.891	6.457	80- 90	153.6	7094	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): 3753.2 lm

%lum = 52.9%

%lamp = 52.9%

Conical surface Flux(120deg): 5525.3 lm

%lum = 77.9%

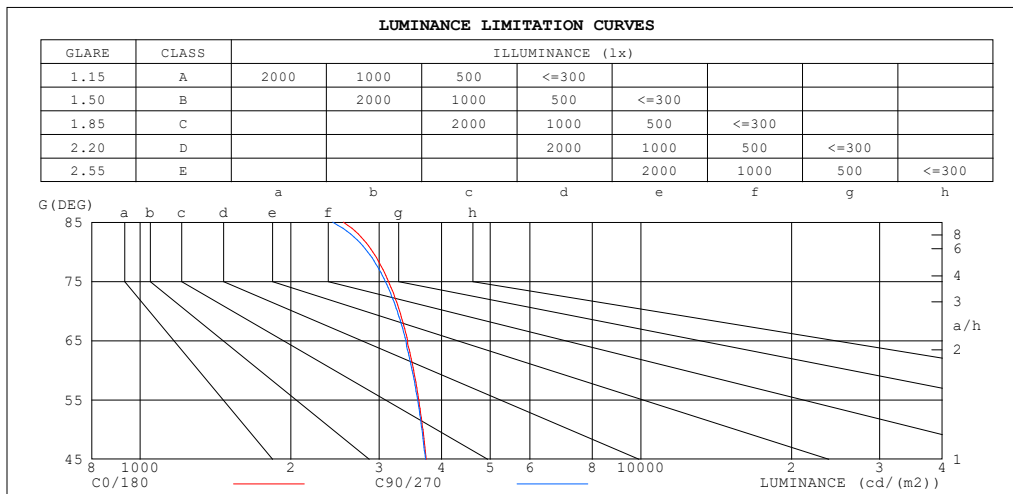
%lamp = 77.9%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2546	2424
80	2916	2848
75	3135	3088
70	3298	3263
65	3423	3395
60	3517	3493
55	3601	3582
50	3670	3655
45	3727	3714

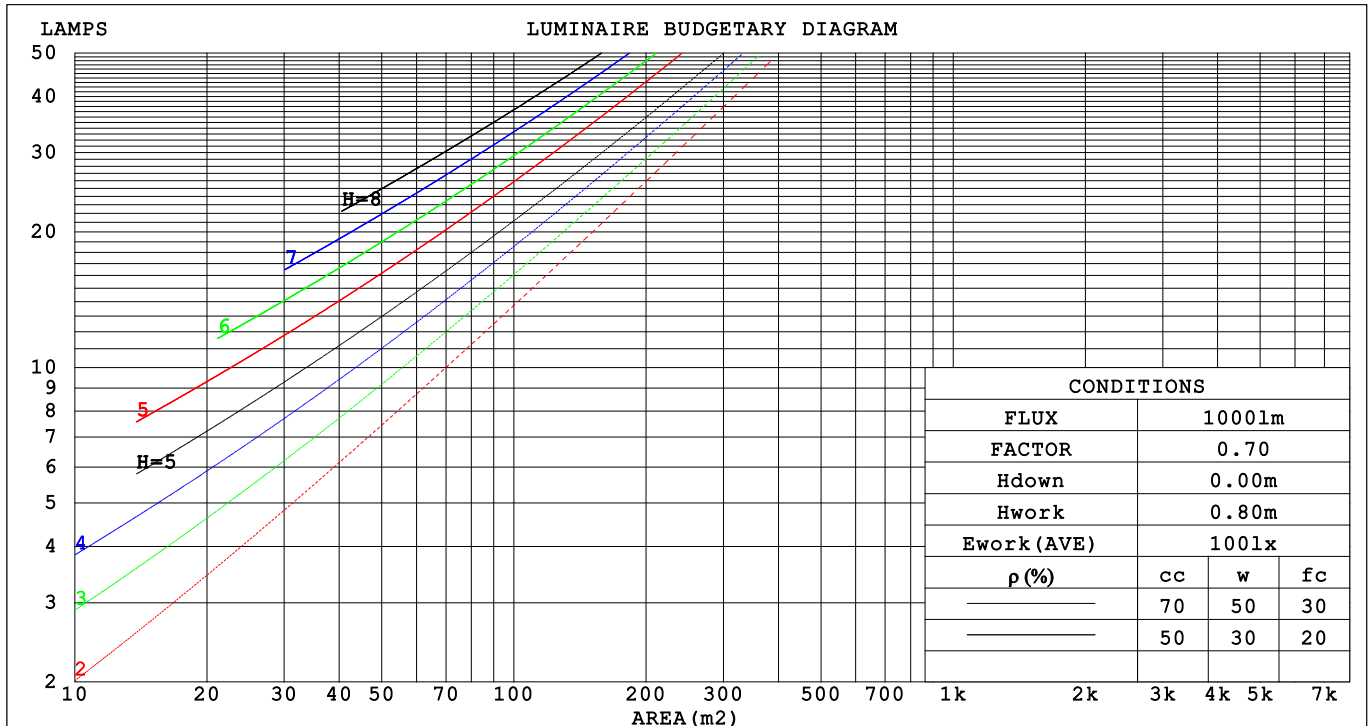
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
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	1.04	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.82	.76	.85	.79	.74	.81	.77	.73	.78	.74	.71	.69
3.0	.79	.71	.64	.77	.70	.63	.74	.68	.62	.72	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.68	.60	.54	.66	.59	.53	.64	.57	.52	.61	.56	.51	.49
5.0	.62	.53	.46	.61	.53	.46	.59	.51	.46	.57	.50	.45	.55	.49	.45	.43
6.0	.56	.47	.41	.55	.47	.40	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.48	.41	.35	.47	.40	.35	.46	.39	.35	.33
8.0	.46	.38	.32	.46	.37	.32	.44	.37	.32	.43	.36	.31	.42	.36	.31	.29
9.0	.43	.34	.29	.42	.34	.29	.41	.33	.28	.40	.33	.28	.39	.33	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
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	.316	.179	.057	.308	.176	.056	.295	.169	.054	.283	.163	.052	.272	.157	.051	
2.0	.296	.162	.050	.289	.159	.049	.278	.154	.048	.267	.150	.047	.257	.145	.046	
3.0	.273	.145	.043	.267	.143	.043	.257	.139	.042	.247	.136	.042	.238	.132	.041	
4.0	.251	.131	.038	.246	.129	.038	.237	.126	.038	.229	.123	.037	.221	.120	.037	
5.0	.232	.118	.034	.228	.117	.034	.220	.114	.034	.212	.112	.033	.205	.109	.033	
6.0	.215	.108	.031	.211	.107	.031	.204	.104	.030	.197	.102	.030	.191	.100	.030	
7.0	.200	.099	.028	.196	.098	.028	.190	.096	.028	.184	.094	.027	.178	.093	.027	
8.0	.187	.091	.026	.184	.090	.026	.178	.089	.025	.172	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.172	.084	.024	.167	.082	.023	.162	.081	.023	.157	.080	.023	
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.148	.075	.021	

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	.181	.156	.134	.155	.134	.115	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.173	.132	.098	.148	.114	.084	.101	.079	.059	.058	.046	.034	.019	.015	.011	
3.0	.165	.114	.074	.141	.099	.064	.097	.069	.045	.056	.040	.026	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.129	.078	.041	.089	.055	.029	.051	.032	.017	.017	.010	.006	
6.0	.143	.082	.039	.123	.071	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.136	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm											
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K						TYPE:LED		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:1			
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	2H	10.5	12.1	10.8	12.3	12.5	10.5	12.0	10.8	12.2	12.4
	3H	12.1	13.5	12.4	13.8	14.0	12.1	13.5	12.4	13.7	14.0
	4H	12.8	14.1	13.1	14.4	14.6	12.7	14.1	13.0	14.3	14.6
	6H	13.3	14.5	13.6	14.8	15.1	13.2	14.5	13.5	14.8	15.0
	8H	13.4	14.7	13.8	14.9	15.2	13.4	14.6	13.7	14.9	15.2
	12H	13.5	14.7	13.9	15.0	15.3	13.5	14.6	13.8	14.9	15.2
4H	2H	11.1	12.5	11.5	12.7	13.0	11.1	12.5	11.4	12.7	13.0
	3H	12.9	14.1	13.3	14.4	14.7	12.9	14.1	13.2	14.4	14.7
	4H	13.7	14.8	14.1	15.1	15.5	13.7	14.8	14.0	15.1	15.4
	6H	14.3	15.3	14.7	15.7	16.0	14.3	15.3	14.7	15.6	16.0
	8H	14.6	15.5	15.0	15.8	16.2	14.5	15.4	14.9	15.8	16.2
	12H	14.7	15.5	15.1	15.9	16.3	14.6	15.5	15.1	15.9	16.3
8H	4H	14.0	14.9	14.4	15.3	15.7	14.0	14.9	14.4	15.2	15.6
	6H	14.8	15.5	15.2	15.9	16.4	14.7	15.5	15.2	15.9	16.3
	8H	15.1	15.8	15.6	16.2	16.6	15.0	15.7	15.5	16.1	16.6
	12H	15.3	15.9	15.8	16.4	16.8	15.3	15.8	15.8	16.3	16.8
12H	4H	14.0	14.8	14.4	15.2	15.6	14.0	14.8	14.4	15.2	15.6
	6H	14.9	15.5	15.3	15.9	16.4	14.8	15.5	15.3	15.9	16.4
	8H	15.2	15.8	15.7	16.2	16.7	15.2	15.7	15.6	16.2	16.7
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 7094 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 6.8)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

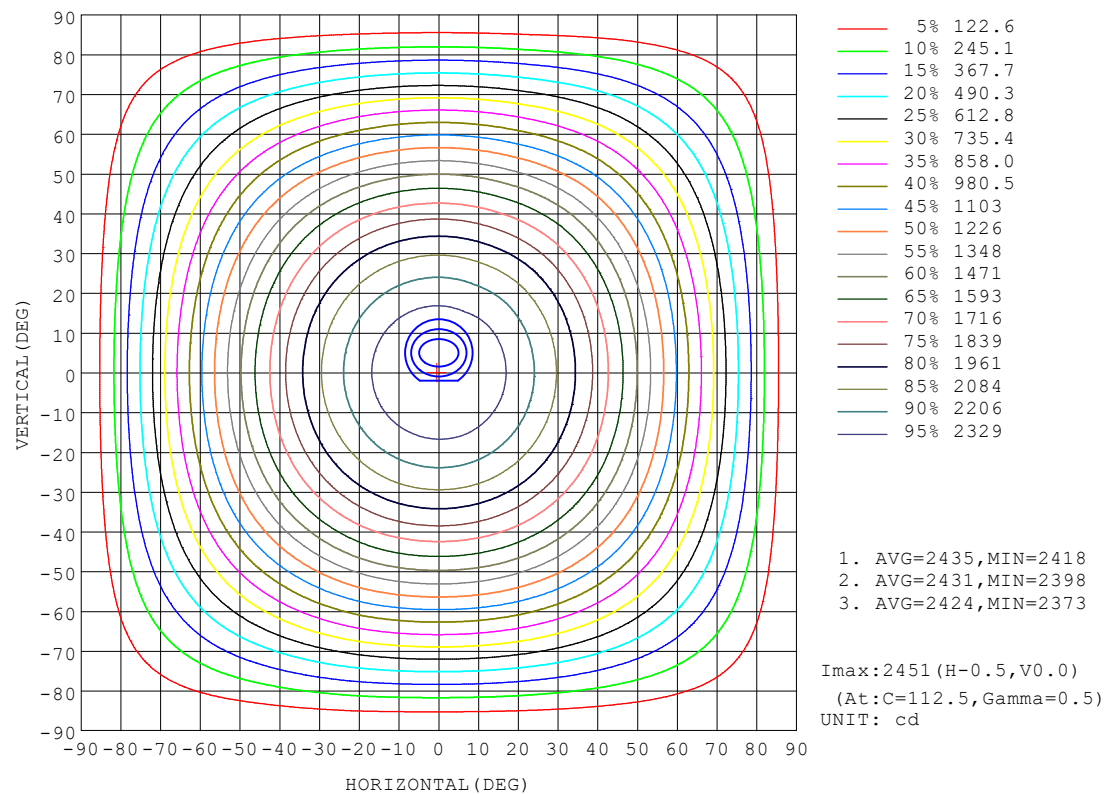
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	45	38	32
0.80	67	55	48	66	55	48	64	54	47	40
1.00	76	64	57	74	64	57	72	65	56	49
1.25	83	72	65	81	71	64	78	70	64	56
1.50	88	78	71	86	77	70	83	75	69	61
2.00	95	86	79	93	85	79	89	82	77	69
2.50	99	91	84	96	89	84	93	87	82	73
3.00	102	95	89	100	93	88	96	90	86	78
4.00	106	100	95	104	98	94	99	95	91	82
5.00	108	104	99	106	102	98	101	98	95	86
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: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

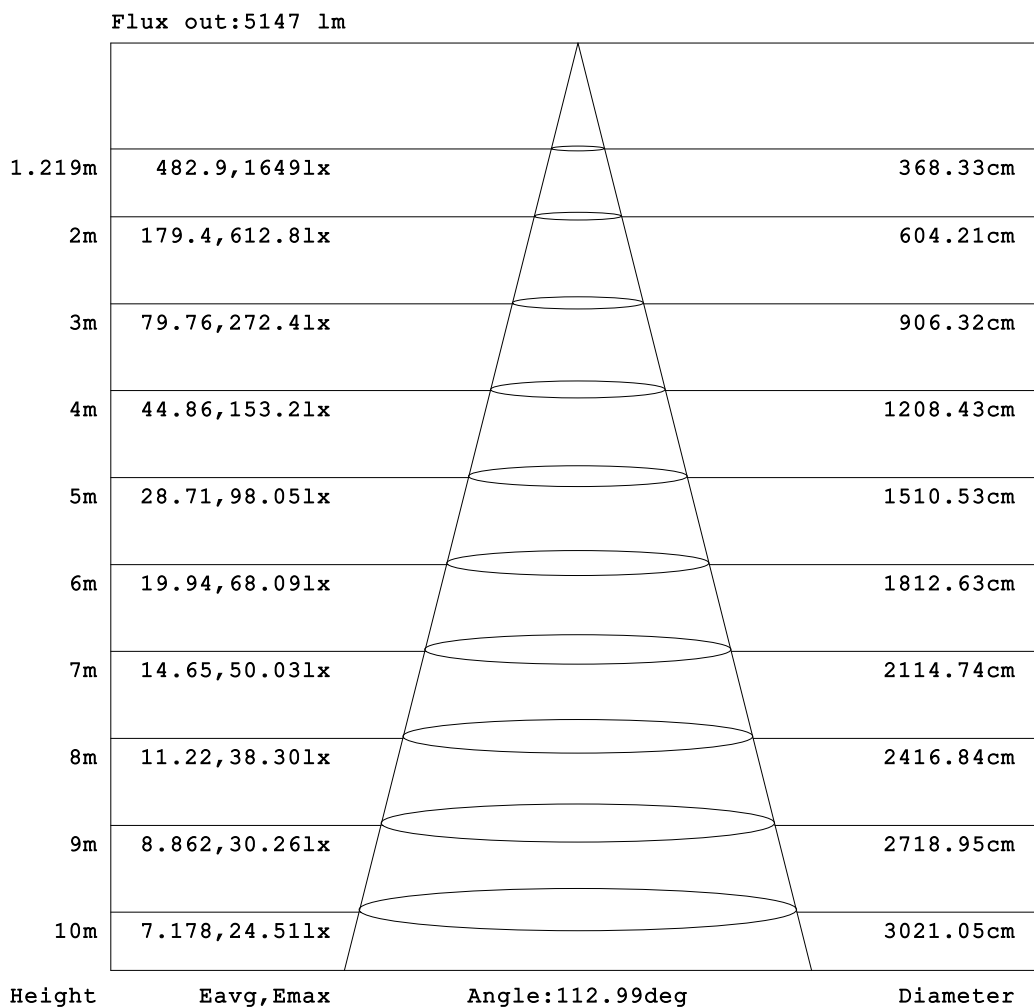


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



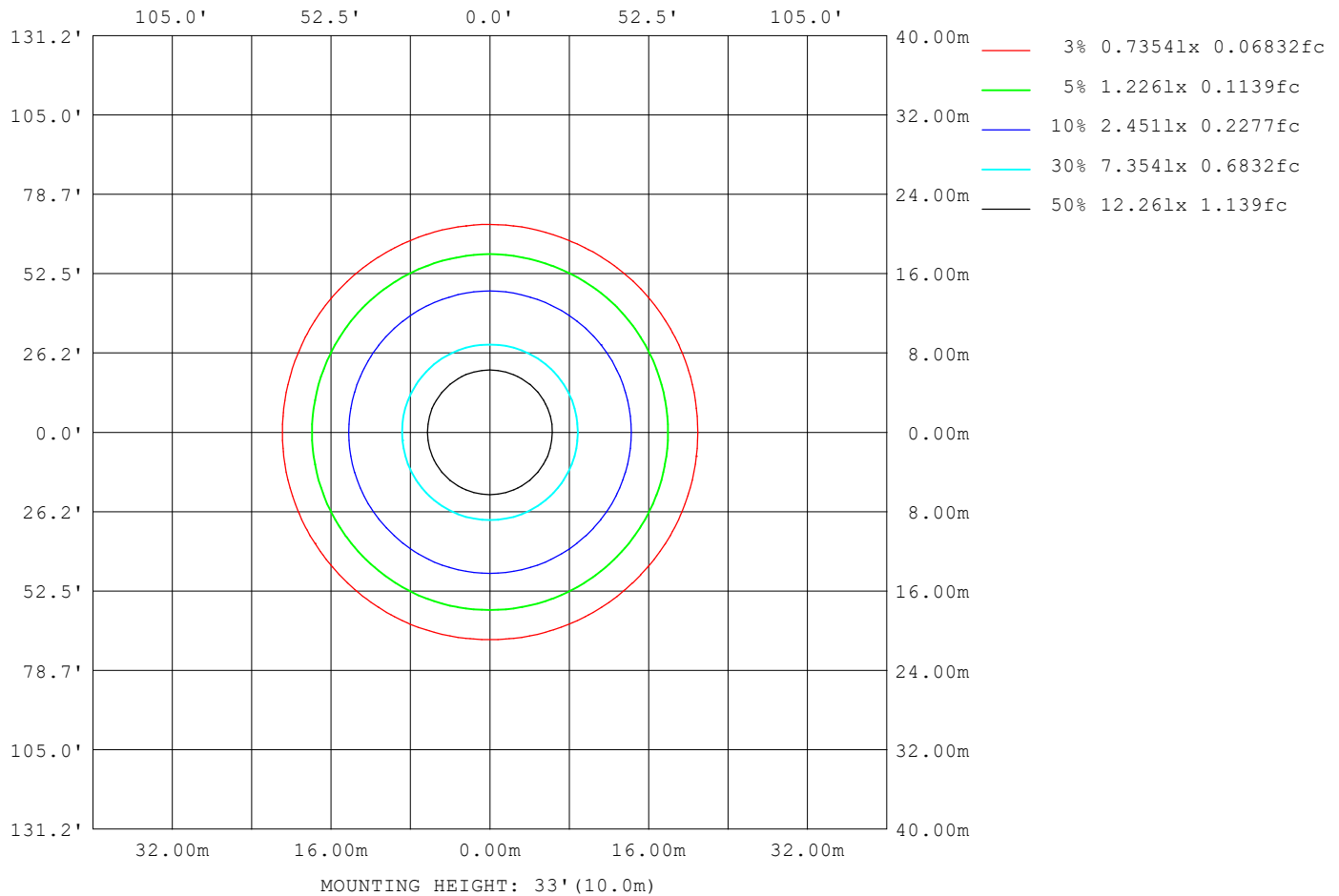
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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:240.04V I:0.2528A P:59.046W PF:0.9731 Freq:0Hz Lamp Flux:7093.92x1 lm		
NAME: MRS C 900_WHT_OPAL 445M_450mA_4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

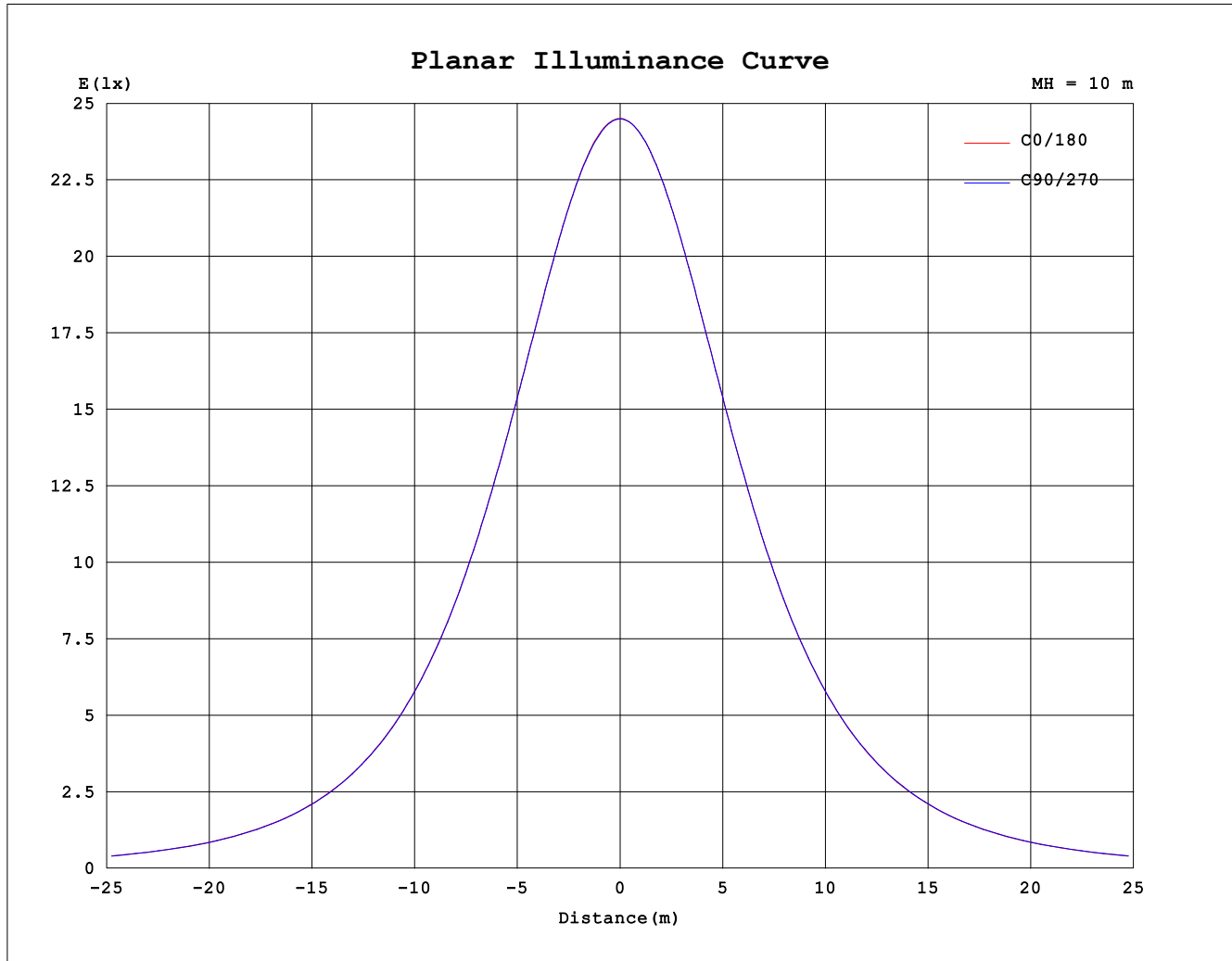
AvgL	cd/m2
L_0~180 (65) av	3406
L_0~180 (75) av	3109
L_0~180 (85) av	2494
L_90~270 (65) av	3408
L_90~270 (75) av	3112
L_90~270 (85) av	2500
L_45 (65) av	3407
L_45 (75) av	3110
L_45 (85) av	2494

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: LOW
Temperature:25.3DEG
Operators:JEFF
Test Date:31 October 2019

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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: LOW
Temperature: 25.3DEG
Operators: JEFF
Test Date: 31 October 2019

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

```