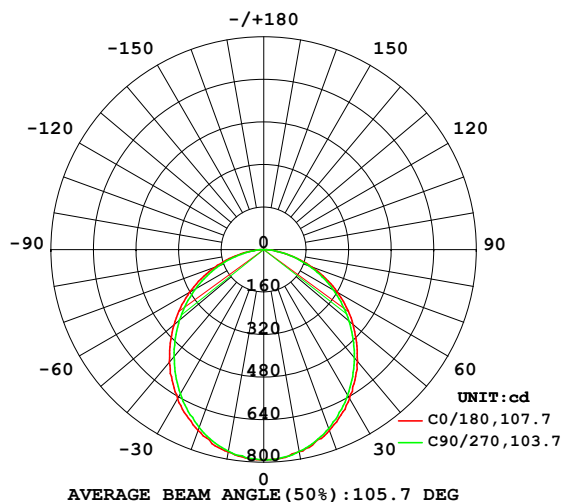


LUMINAIRE PHOTOMETRIC TEST REPORT

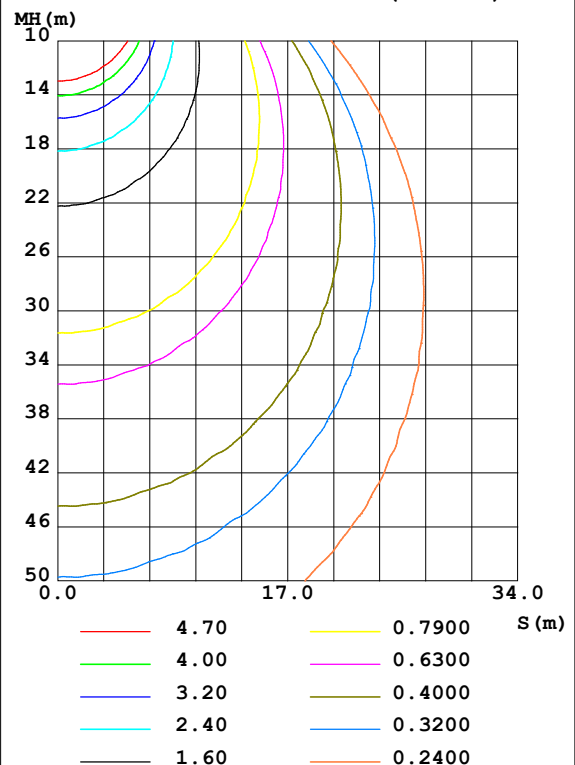
Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 90.31 lm/W			
MODEL: I22001m 927-965 LV PRE3		Imax(cd)	793.8	S/MH(C0/180)	1.22
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.19
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	2085.7	η UP,DN(C0-180)	0.0,50.3
NOMINAL FLUX(lm)	2085.66	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	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: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [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	771.4	771.7	770.3	773.0	773.0	772.2	769.5	769.8	0- 10	74.54	74.54	3.57,3.57
20	723.8	718.3	715.8	722.7	723.7	720.8	711.7	714.3	10- 20	211.1	285.7	13.7,13.7
30	647.1	637.9	631.0	642.8	648.5	638.7	626.7	631.1	20- 30	313.6	599.3	28.7,28.7
40	548.9	537.1	530.9	544.2	552.7	540.4	525.7	533.0	30- 40	368.9	968.2	46.4,46.4
50	438.9	425.4	419.1	433.2	441.0	430.9	414.7	421.5	40- 50	373.4	1342	64.3,64.3
60	319.0	307.5	302.0	315.2	322.3	311.6	297.2	303.5	50- 60	330.3	1672	80.2,80.2
70	194.2	185.5	183.1	194.2	197.1	190.0	178.4	181.6	60- 70	246.4	1918	92,92
80	73.41	70.12	71.53	77.17	75.95	73.99	67.73	66.89	70- 80	135.7	2054	98.5,98.5
90	0.5675	0.5278	0.6053	1.736	0.7030	0.8173	0.5026	0.5321	80- 90	31.69	2086	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): 1157.5 lm

%lum = 55.5%

%lamp = 55.5%

Conical surface Flux(120deg): 1671.9 lm

%lum = 80.2%

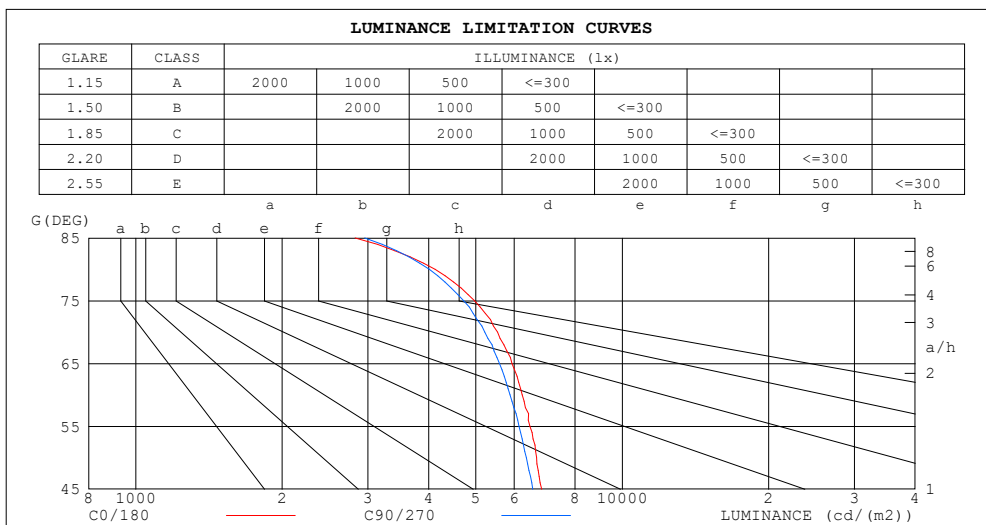
%lamp = 80.2%

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JEFF
 Test Date:03 April 2024

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:7.890m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



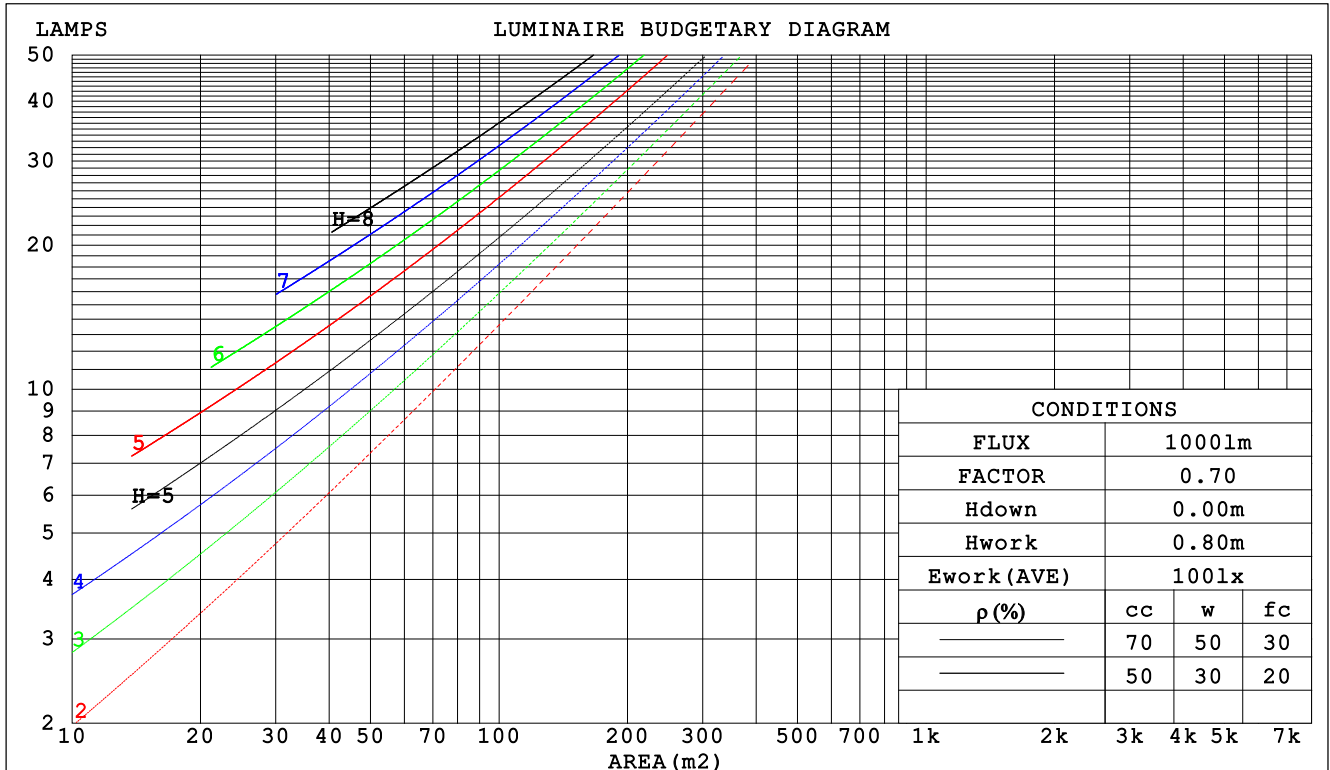
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	Coefficients of Utilization(CU)															
RCR:Room Cavity Ratio																
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	.00
1.0	1.04	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.79	.89	.83	.78	.86	.81	.76	.82	.78	.74	.79	.76	.73	.70
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.66	.62	.60
4.0	.71	.62	.56	.70	.62	.55	.67	.60	.55	.65	.59	.54	.63	.58	.53	.51
5.0	.64	.55	.48	.63	.54	.48	.60	.53	.47	.58	.52	.47	.57	.51	.46	.44
6.0	.57	.49	.42	.56	.48	.42	.55	.47	.42	.53	.46	.41	.51	.45	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.48	.39	.33	.47	.39	.33	.46	.38	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.44	.36	.30	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.29	.28
10.0	.40	.33	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE: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	.301	.171	.054	.294	.168	.053	.281	.161	.051	.268	.155	.050	.257	.149	.048		
2.0	.285	.156	.048	.279	.154	.047	.267	.149	.046	.256	.144	.045	.246	.139	.044		
3.0	.265	.141	.042	.259	.139	.042	.249	.135	.041	.239	.131	.040	.231	.128	.040		
4.0	.245	.127	.037	.240	.126	.037	.231	.122	.037	.222	.119	.036	.215	.117	.036		
5.0	.227	.116	.033	.223	.114	.033	.214	.112	.033	.207	.109	.032	.200	.107	.032		
6.0	.211	.106	.030	.207	.104	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029		
7.0	.196	.097	.028	.193	.096	.027	.186	.094	.027	.180	.093	.027	.175	.091	.027		
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.169	.086	.025	.164	.084	.025		
9.0	.172	.083	.023	.169	.083	.023	.164	.081	.023	.159	.080	.023	.155	.079	.023		
10.0	.162	.078	.022	.160	.077	.021	.155	.076	.021	.150	.075	.021	.146	.074	.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	.180	.156	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.147	.114	.085	.101	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.075	.140	.099	.065	.096	.068	.046	.056	.040	.027	.018	.013	.009	
4.0	.156	.101	.059	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm										
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE: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	19.3	20.8	19.6	21.0	21.2	19.1	20.6	19.3	20.8	21.0
3H	20.8	22.2	21.1	22.4	22.6	20.5	21.9	20.8	22.1	22.3
4H	21.3	22.6	21.6	22.9	23.1	21.0	22.3	21.3	22.6	22.8
6H	21.7	22.9	22.0	23.2	23.5	21.4	22.6	21.7	22.9	23.2
8H	21.8	23.0	22.1	23.2	23.5	21.5	22.7	21.8	23.0	23.2
12H	21.8	22.9	22.1	23.2	23.5	21.5	22.7	21.9	23.0	23.3
4H 2H	19.9	21.2	20.2	21.4	21.7	19.7	21.0	20.0	21.2	21.5
3H	21.5	22.7	21.9	22.9	23.3	21.3	22.4	21.6	22.7	23.0
4H	22.2	23.2	22.5	23.5	23.9	21.9	23.0	22.3	23.3	23.6
6H	22.6	23.6	23.0	23.9	24.3	22.4	23.3	22.8	23.7	24.0
8H	22.8	23.6	23.2	24.0	24.4	22.5	23.4	22.9	23.8	24.1
12H	22.8	23.6	23.3	24.0	24.4	22.6	23.4	23.0	23.8	24.2
8H 4H	22.4	23.3	22.8	23.6	24.0	22.2	23.0	22.6	23.4	23.8
6H	23.0	23.7	23.4	24.1	24.5	22.8	23.5	23.2	23.9	24.3
8H	23.2	23.8	23.6	24.2	24.7	23.0	23.6	23.4	24.0	24.5
12H	23.3	23.8	23.8	24.3	24.7	23.1	23.6	23.6	24.1	24.6
12H 4H	22.4	23.2	22.8	23.6	24.0	22.2	23.0	22.6	23.3	23.7
6H	23.0	23.6	23.5	24.1	24.5	22.8	23.4	23.2	23.9	24.3
8H	23.2	23.8	23.7	24.2	24.7	23.0	23.6	23.5	24.0	24.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 2086 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.6)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

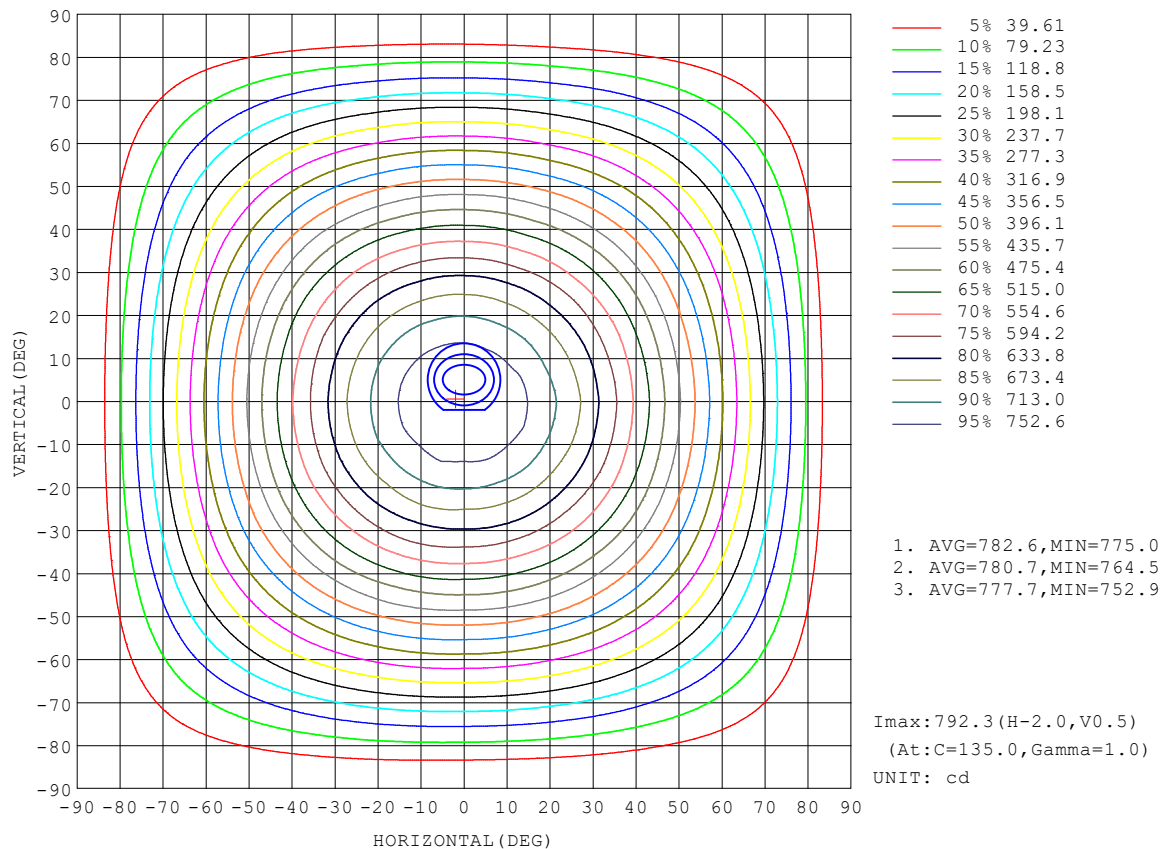
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	47	40	58	47	40	57	46	40	34
0.80	69	57	50	68	57	50	66	56	49	43
1.00	77	66	59	76	65	59	74	67	58	51
1.25	84	74	67	83	73	66	80	72	66	58
1.50	89	79	72	87	78	72	84	77	71	63
2.00	96	87	81	94	86	80	90	84	79	71
2.50	99	92	86	97	91	85	94	88	83	75
3.00	103	96	91	101	95	90	97	92	87	79
4.00	107	101	97	104	99	95	100	96	93	84
5.00	109	104	100	107	102	99	102	99	96	87
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:03 April 2024

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

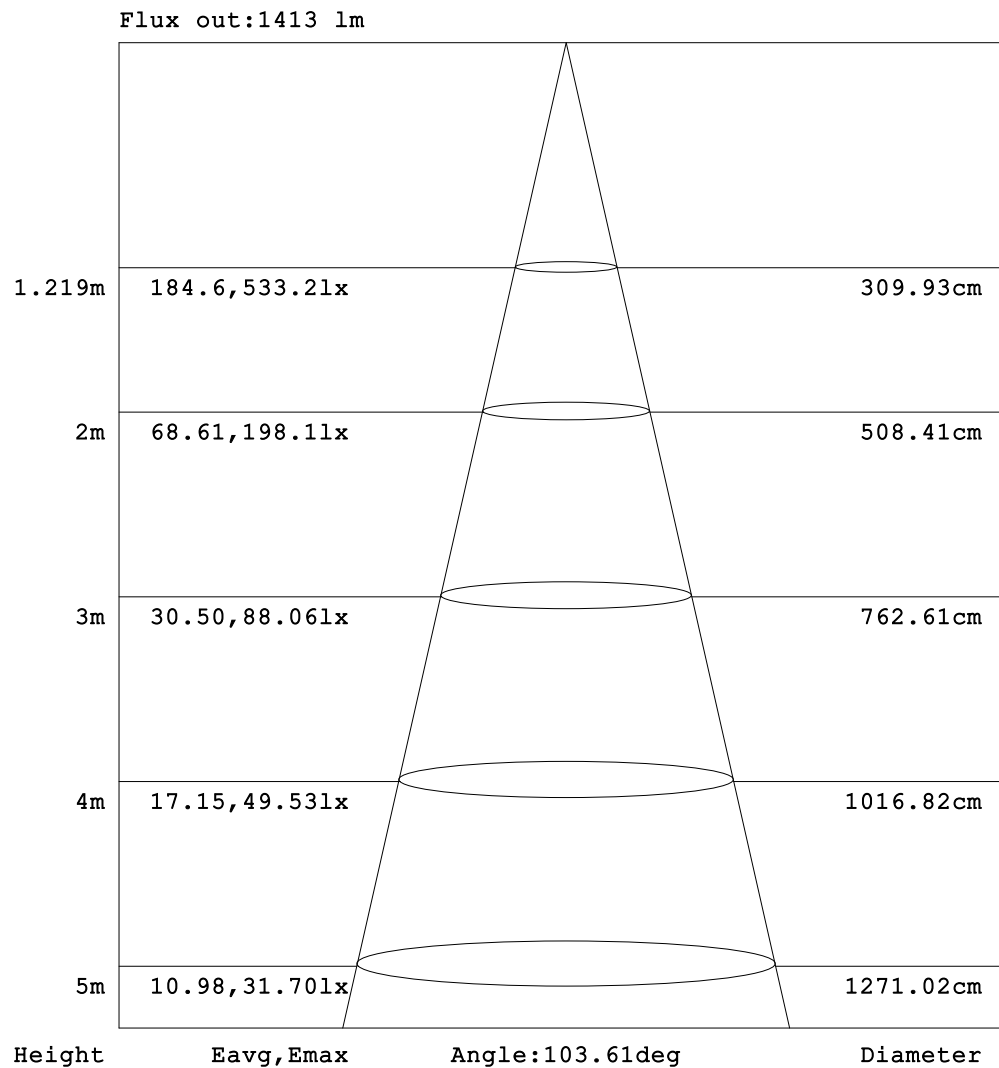


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



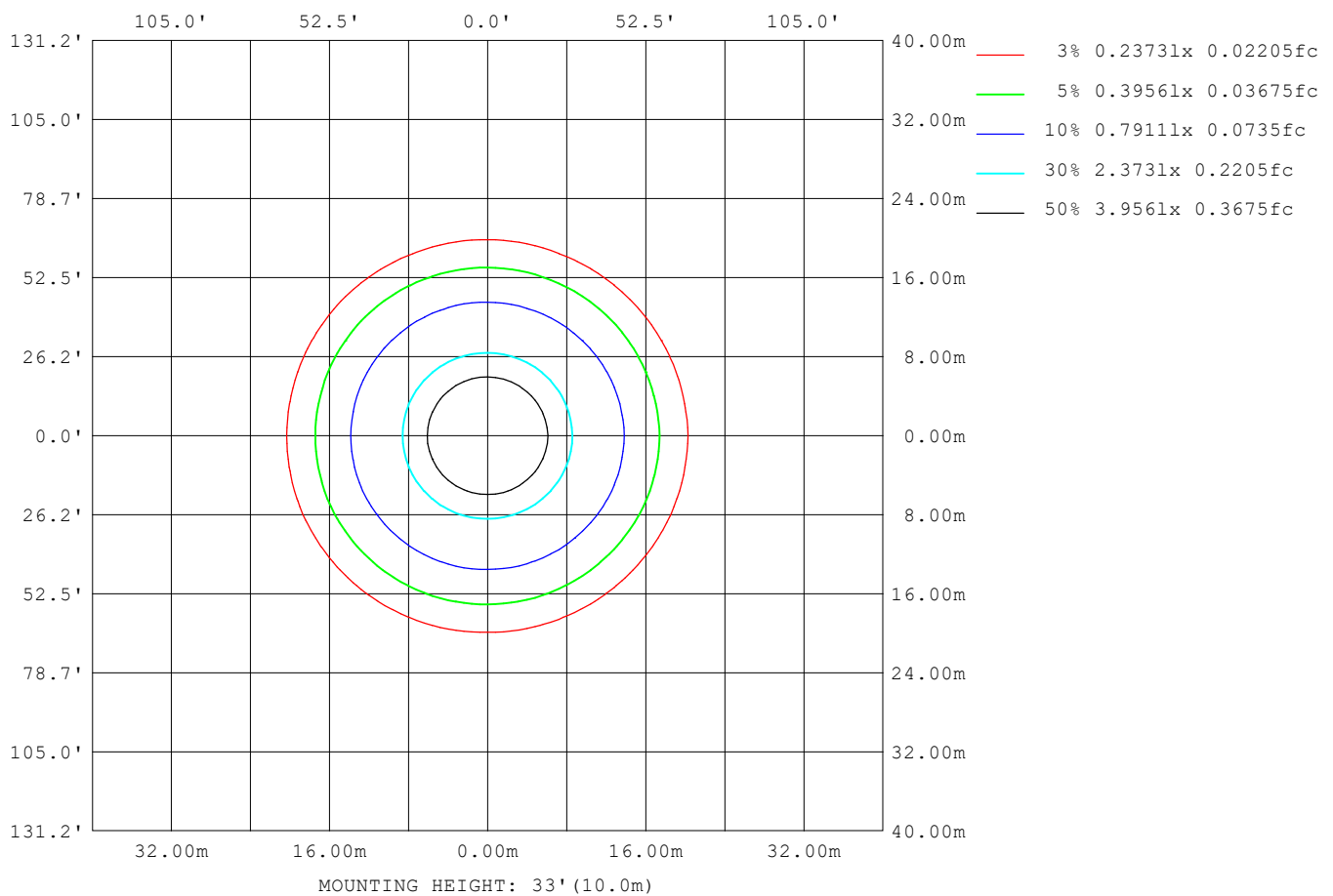
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000KPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:240.0V I:0.1091A P:23.09W PF:0.8816 Lamp Flux:2085.66x1 lm		
NAME: MRS T_1160_NA_WHT_OPAL_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

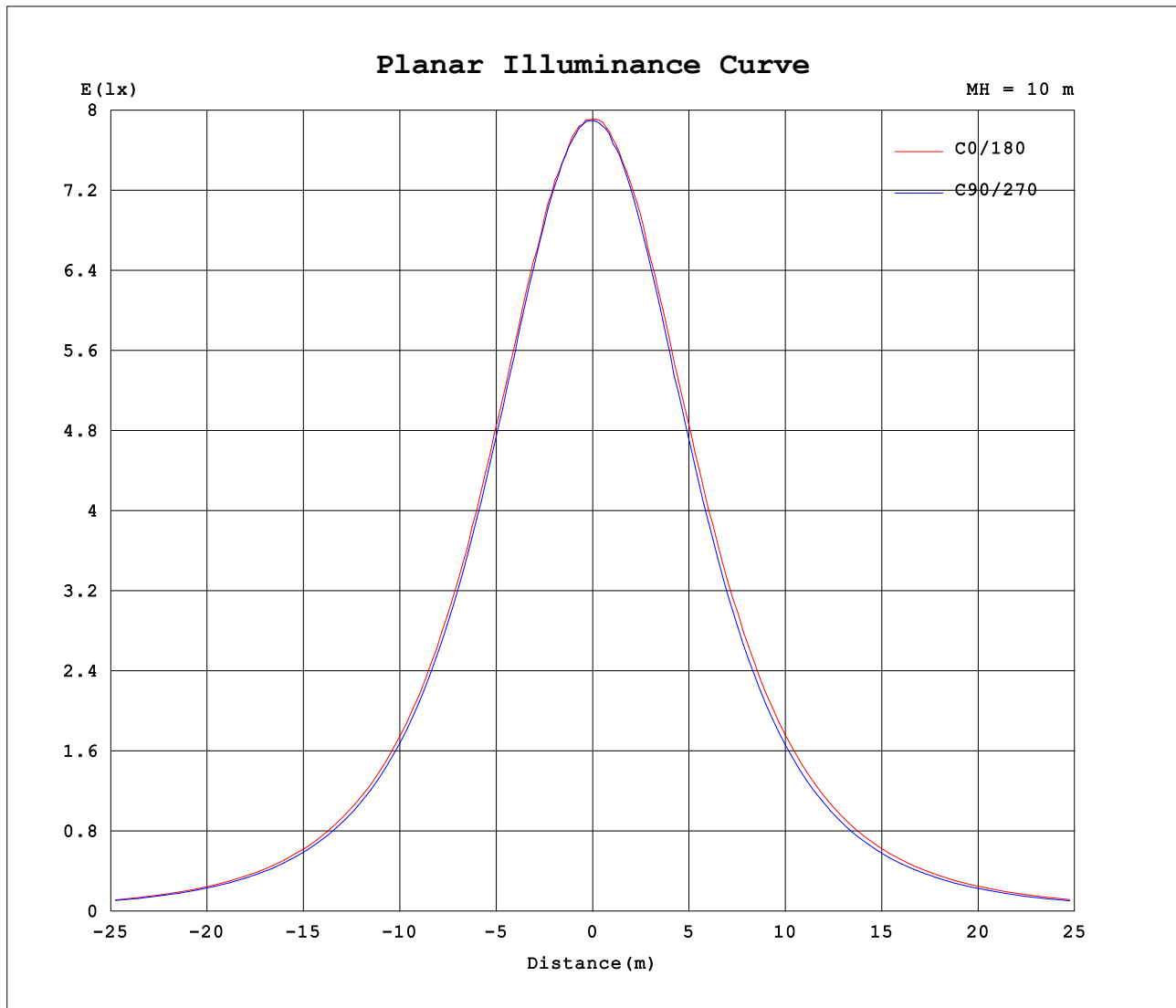
AvgL	cd/m2
L_0~180 (65) av	5963
L_0~180 (75) av	5019
L_0~180 (85) av	2910
L_90~270 (65) av	5535
L_90~270 (75) av	4635
L_90~270 (85) av	2793
L_45 (65) av	5752
L_45 (75) av	4815
L_45 (85) av	2856

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:03 April 2024

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.890m [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: 03 April 2024

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.890m [K=1.0000]
Remarks:

