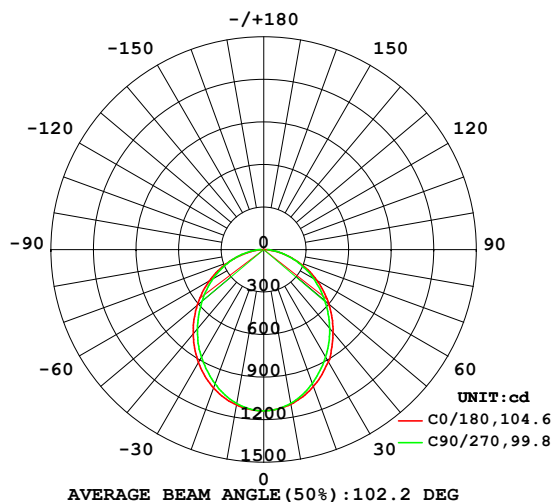


LUMINAIRE PHOTOMETRIC TEST REPORT

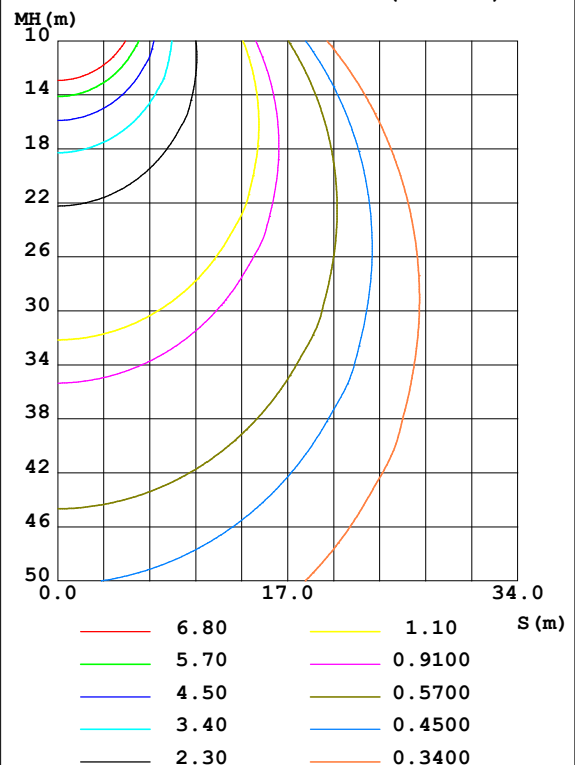
Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.50 lm/W			
L E M C 100mm	1300lm 940 HV ADV5	I _{max} (cd)	1137	S/MH(C0/180)	1.21
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.16
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	2919.5	η UP,DN(C0-180)	0.0,49.7
NOMINAL FLUX(lm)	2919.55	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.3
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:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [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	1107	1103	1101	1107	1113	1108	1103	1105	0- 10	107.0	107.0	3.67,3.67
20	1027	1014	1004	1020	1037	1023	1007	1016	10- 20	300.9	407.9	14,14
30	913.6	884.8	873.7	892.5	920.5	896.1	878.4	888.1	20- 30	441.6	849.5	29.1,29.1
40	761.5	739.2	723.6	746.9	775.1	752.2	728.1	743.9	30- 40	514.2	1364	46.7,46.7
50	600.5	580.8	563.3	588.2	613.4	593.5	569.8	585.9	40- 50	514.4	1878	64.3,64.3
60	432.3	416.6	404.5	422.9	443.6	430.9	414.7	424.3	50- 60	451.5	2330	79.8,79.8
70	261.4	254.1	250.1	258.9	270.6	269.8	262.2	264.6	60- 70	338.8	2668	91.4,91.4
80	98.92	104.1	110.1	107.7	104.9	116.8	119.6	113.3	70- 80	193.6	2862	98,98
90	1.052	16.18	24.99	16.61	1.154	12.21	19.11	10.94	80- 90	57.52	2920	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): 1625.2 lm

%lum = 55.7%

%lamp = 55.7%

Conical surface Flux(120deg): 2329.6 lm

%lum = 79.8%

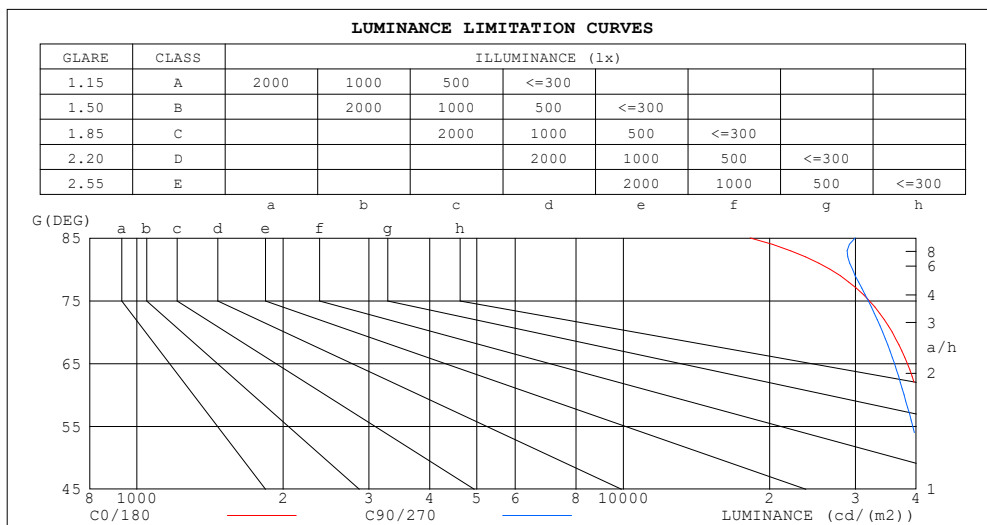
%lamp = 79.8%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	18225	29952
80	26625	29632
75	32052	31893
70	35728	34159
65	38363	36097
60	40408	37797
55	42116	39385
50	43661	40945
45	45090	42543

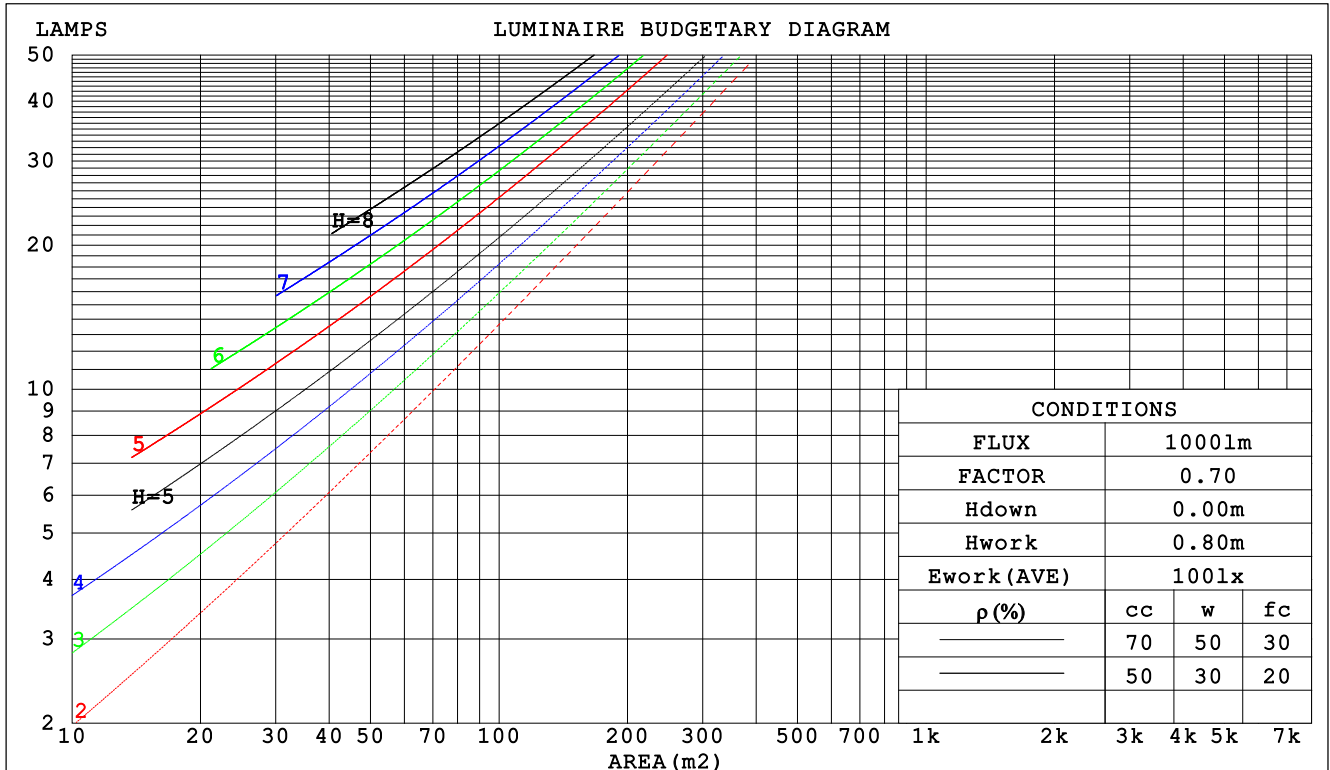
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 16 March 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.995m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

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	.00	.96	1.02	.98	.94	.98	.94	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.79	.89	.83	.78	.86	.80	.76	.82	.78	.74	.79	.76	.72	.70
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.66	.62	.59
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	.57	.48	.42	.55	.47	.42	.53	.46	.41	.51	.46	.41	.39
7.0	.52	.44	.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	.30	.28
10.0	.41	.33	.27	.40	.32	.27	.39	.32	.27	.38	.32	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

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	.305	.173	.055	.298	.170	.054	.285	.163	.052	.272	.157	.050	.261	.151	.049		
2.0	.287	.157	.048	.280	.154	.048	.269	.149	.046	.258	.145	.045	.248	.140	.044		
3.0	.265	.141	.042	.260	.139	.042	.250	.135	.041	.240	.132	.040	.231	.128	.040		
4.0	.245	.127	.037	.240	.126	.037	.231	.123	.037	.223	.120	.036	.215	.117	.036		
5.0	.227	.116	.033	.222	.114	.033	.214	.112	.033	.207	.109	.032	.200	.107	.032		
6.0	.210	.105	.030	.207	.104	.030	.199	.102	.030	.193	.100	.029	.186	.098	.029		
7.0	.196	.097	.027	.193	.096	.027	.186	.094	.027	.180	.092	.027	.175	.091	.027		
8.0	.183	.090	.025	.180	.089	.025	.174	.087	.025	.169	.086	.025	.164	.084	.025		
9.0	.172	.083	.023	.169	.082	.023	.164	.081	.023	.159	.080	.023	.155	.078	.023		
10.0	.162	.078	.022	.159	.077	.021	.155	.076	.021	.150	.075	.021	.146	.073	.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	.172	.132	.099	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011		
3.0	.164	.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	.042	.088	.055	.029	.051	.032	.017	.016	.010	.006		
6.0	.141	.082	.040	.121	.071	.034	.084	.050	.024	.049	.029	.015	.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:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm										
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90										
MFR.: DARKON										
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	25.7	27.2	26.0	27.4	27.6	25.4	26.9	25.7	27.1	27.3
3H	27.2	28.6	27.5	28.8	29.0	26.9	28.2	27.2	28.5	28.7
4H	27.7	29.0	28.0	29.3	29.5	27.4	28.8	27.8	29.0	29.3
6H	28.1	29.3	28.4	29.6	29.9	27.9	29.1	28.2	29.4	29.7
8H	28.2	29.3	28.5	29.6	29.9	28.0	29.2	28.4	29.5	29.8
12H	28.2	29.3	28.5	29.6	29.9	28.1	29.3	28.5	29.6	29.9
4H 2H	26.3	27.6	26.6	27.8	28.1	26.0	27.4	26.4	27.6	27.9
3H	27.9	29.1	28.3	29.3	29.7	27.7	28.8	28.0	29.1	29.4
4H	28.6	29.6	28.9	29.9	30.3	28.4	29.4	28.7	29.7	30.1
6H	29.0	30.0	29.4	30.3	30.7	28.9	29.9	29.3	30.2	30.6
8H	29.2	30.0	29.6	30.4	30.8	29.1	30.0	29.5	30.4	30.8
12H	29.2	30.0	29.7	30.4	30.8	29.3	30.1	29.7	30.5	30.9
8H 4H	28.8	29.7	29.2	30.0	30.4	28.6	29.5	29.0	29.9	30.2
6H	29.4	30.1	29.8	30.5	31.0	29.3	30.1	29.8	30.5	30.9
8H	29.6	30.3	30.1	30.7	31.1	29.6	30.3	30.1	30.7	31.1
12H	29.7	30.3	30.2	30.7	31.2	29.9	30.4	30.4	30.9	31.4
12H 4H	28.8	29.6	29.2	30.0	30.4	28.6	29.4	29.1	29.8	30.2
6H	29.5	30.1	29.9	30.5	31.0	29.4	30.0	29.8	30.4	30.9
8H	29.7	30.2	30.2	30.7	31.2	29.7	30.3	30.2	30.7	31.2
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 2920 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.7)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

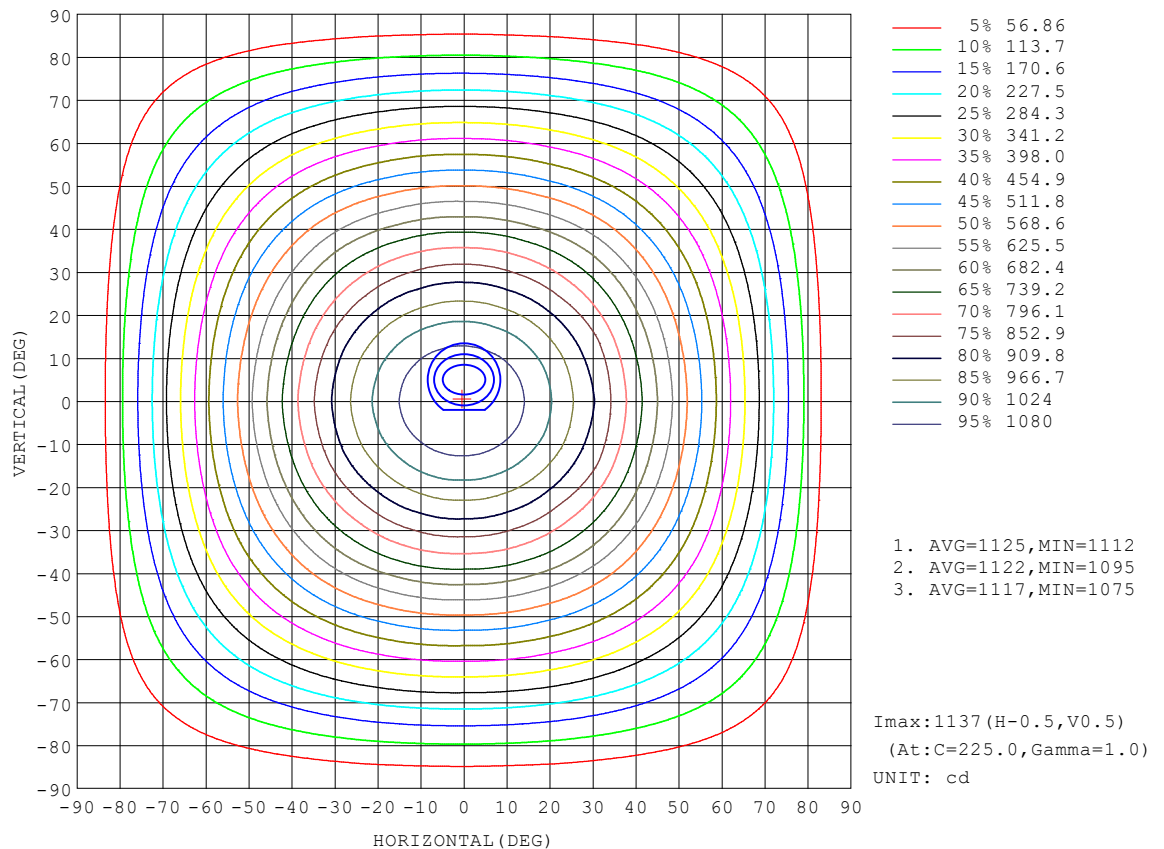
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	59	47	41	58	47	40	57	47	40	34
0.80	69	57	50	68	57	50	66	56	50	43
1.00	77	66	59	76	66	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	90	85	94	88	83	75
3.00	103	96	90	100	94	89	96	91	87	79
4.00	107	101	96	104	99	95	100	96	92	84
5.00	109	104	100	106	102	99	102	99	96	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: HIGH
 Temperature: 25.3DEG
 Operators: JEFF
 Test Date: 16 March 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.995m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

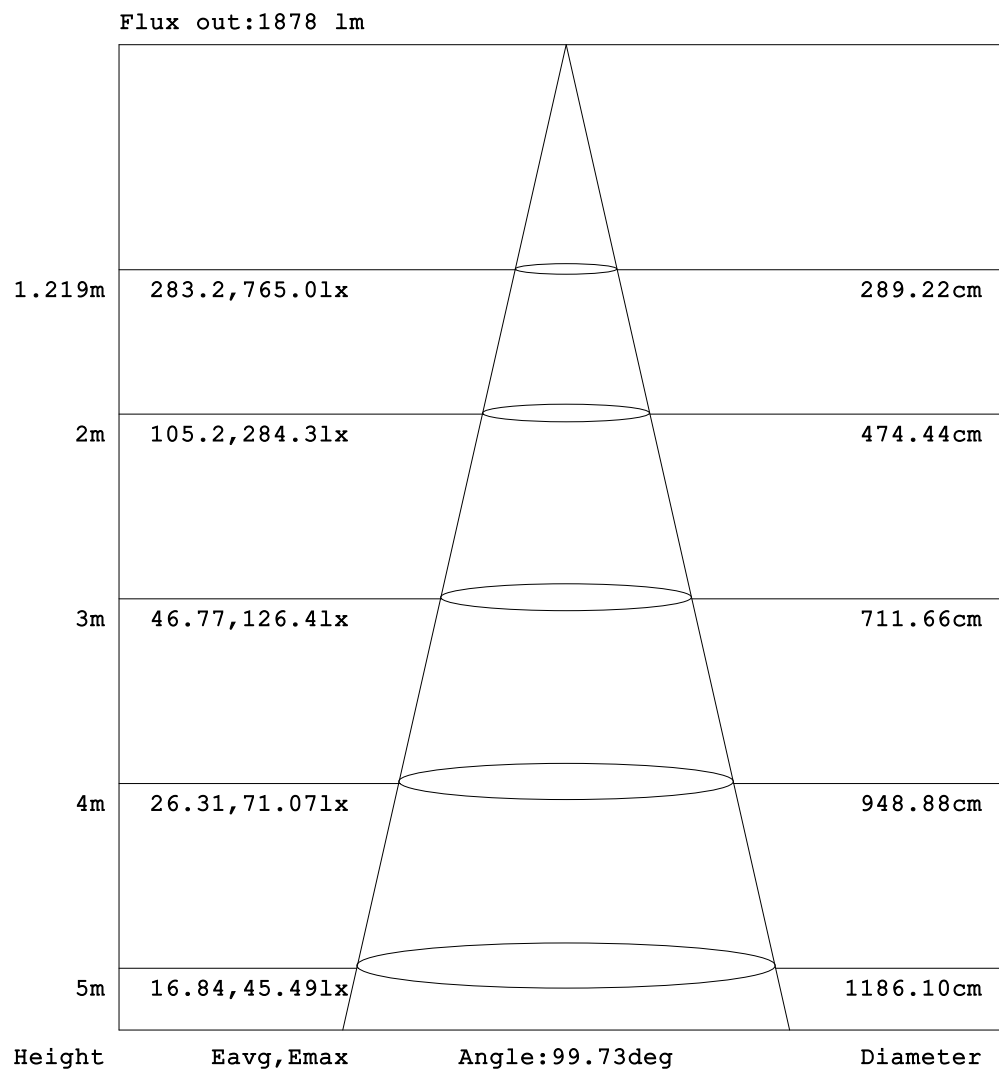


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

AAI Figure

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		



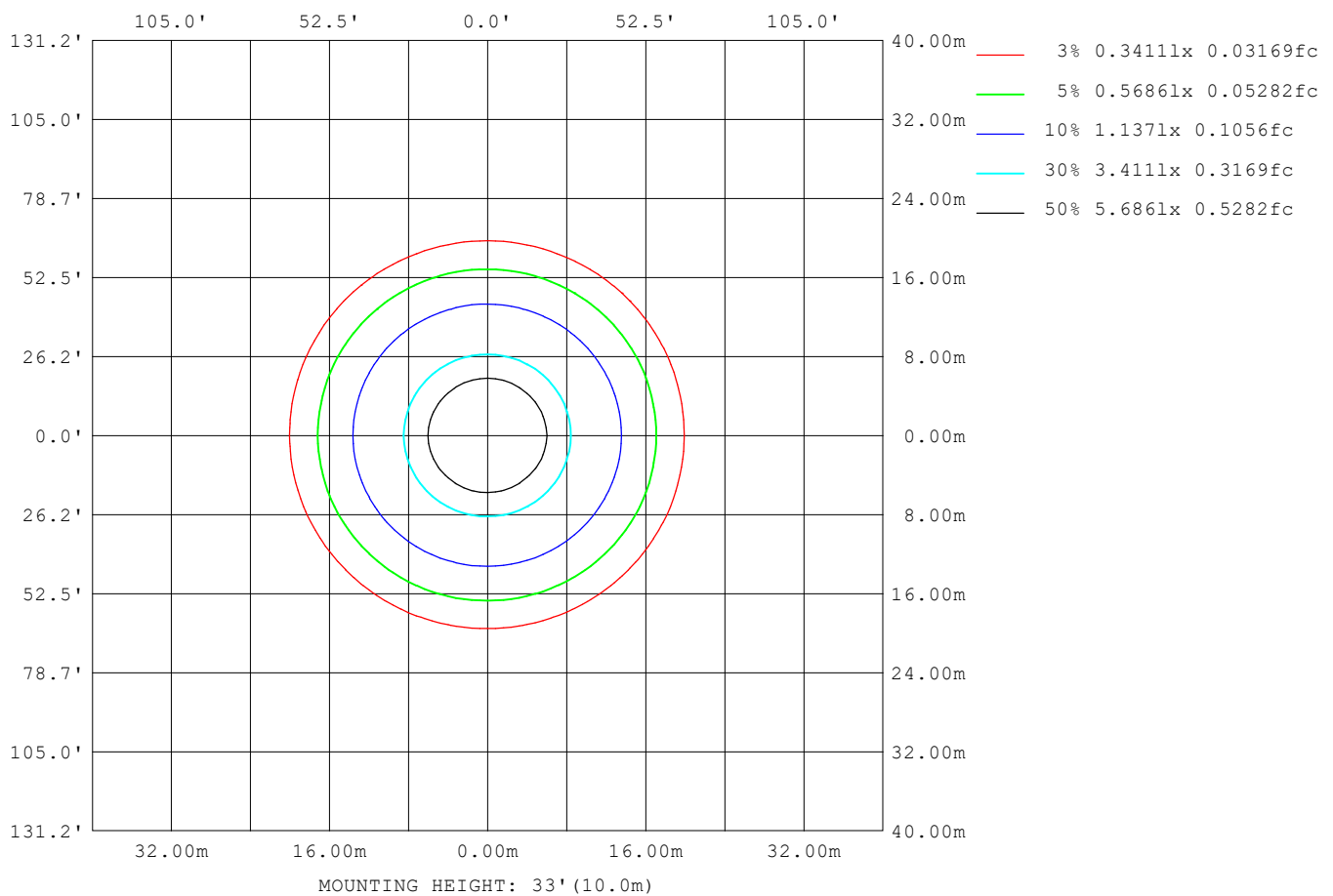
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.995m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

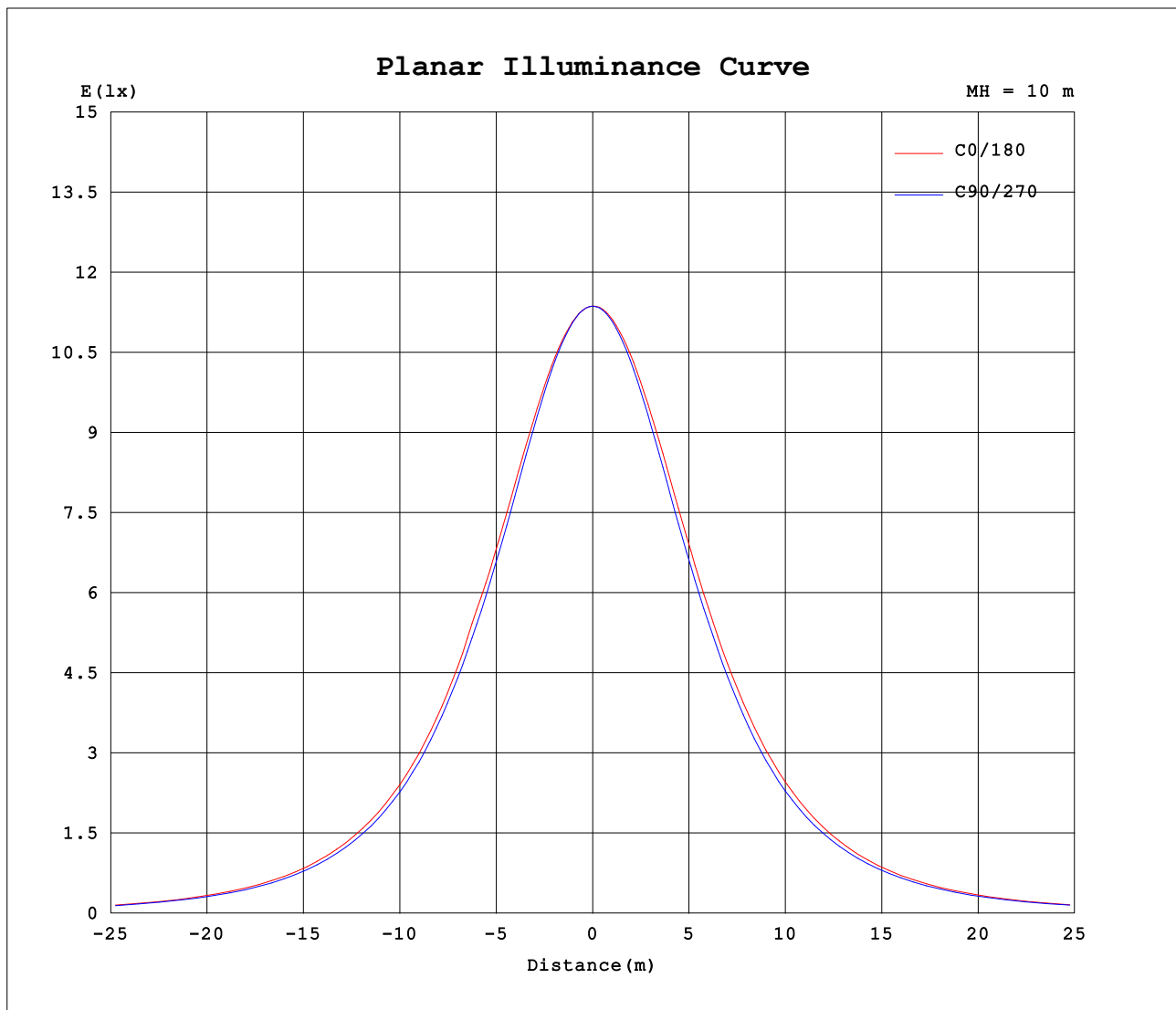
AvgL	cd/m2
L_0~180 (65) av	38917
L_0~180 (75) av	32722
L_0~180 (85) av	19242
L_90~270 (65) av	36725
L_90~270 (75) av	32951
L_90~270 (85) av	31199
L_45 (65) av	37841
L_45 (75) av	33084
L_45 (85) av	26735

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:16 March 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [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: 16 March 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.995m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:239.6V I:0.1602A P:36.73W PF:0.9570 Lamp Flux:2919.55x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_500mA_4000K CRI90		
MFR.: DARKON		

Table--1

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 16 March 2023

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

```