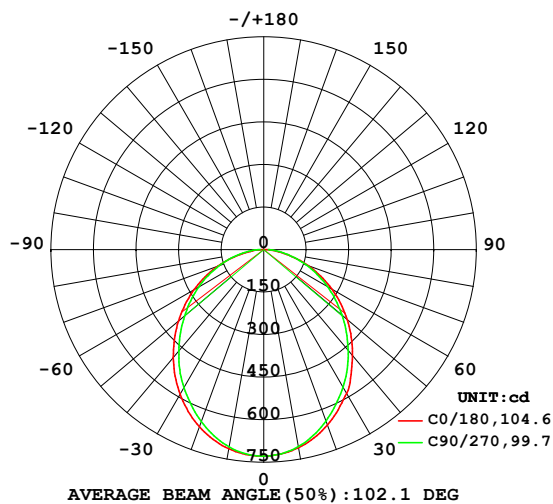


LUMINAIRE PHOTOMETRIC TEST REPORT

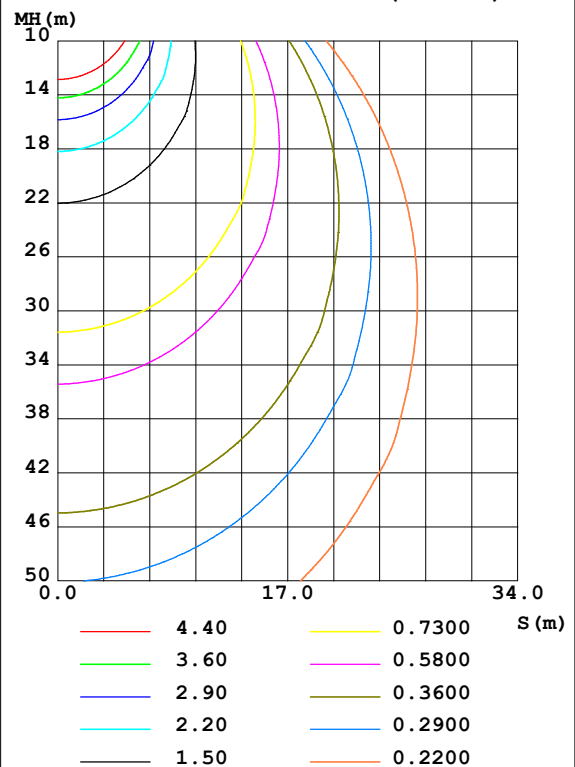
Test:U:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 84.88 lm/W			
LED MODULE	1300lm 940 HV ADV5	Imax(cd)	728.3	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)	1869.9	η UP,DN(C0-180)	0.0,49.7
NOMINAL FLUX(lm)	1869.92	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:17 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	709.0	706.7	705.4	709.1	712.8	710.1	706.4	707.6	0- 10	68.56	68.56	3.67,3.67
20	658.0	649.5	643.0	653.5	664.5	655.2	645.0	650.9	10- 20	192.8	261.3	14,14
30	585.4	566.8	559.7	571.7	589.7	574.2	562.7	569.0	20- 30	282.9	544.2	29.1,29.1
40	487.7	473.4	463.5	478.4	496.6	481.8	466.3	476.5	30- 40	329.4	873.6	46.7,46.7
50	384.5	371.9	360.8	376.7	392.8	380.1	364.8	375.3	40- 50	329.4	1203	64.3,64.3
60	276.8	266.7	259.0	270.8	284.1	276.0	265.5	271.8	50- 60	289.1	1492	79.8,79.8
70	167.4	162.6	160.1	165.8	173.1	172.6	167.7	169.3	60- 70	216.9	1709	91.4,91.4
80	63.40	66.76	70.32	68.79	67.27	74.89	76.63	72.64	70- 80	124.0	1833	98,98
90	0.6556	10.31	15.93	10.58	0.7321	7.749	12.13	6.952	80- 90	36.82	1870	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): 1041.1 lm

%lum = 55.7%

%lamp = 55.7%

Conical surface Flux(120deg): 1492.2 lm

%lum = 79.8%

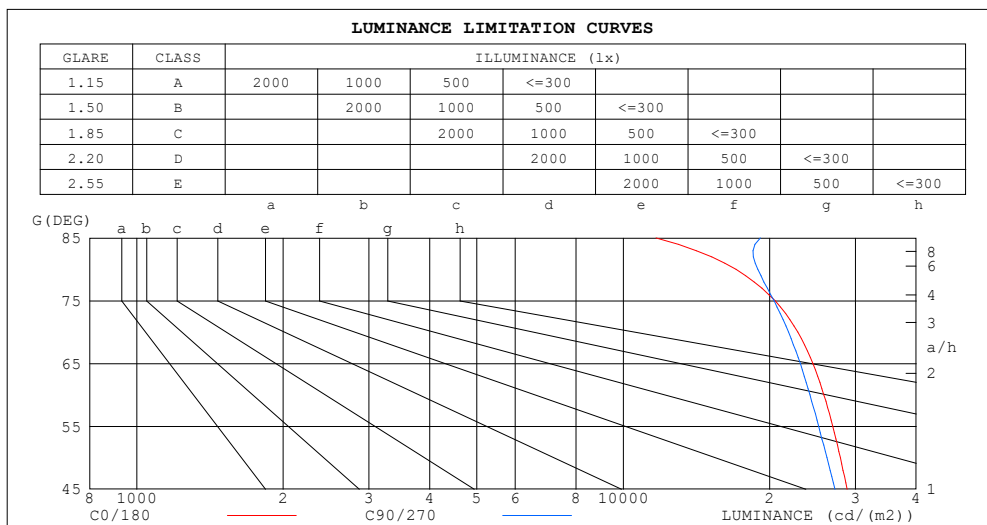
%lamp = 79.8%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11674	19139
80	17054	18923
75	20519	20423
70	22867	21881
65	24543	23114
60	25855	24206
55	26956	25222
50	27939	26233
45	28859	27248

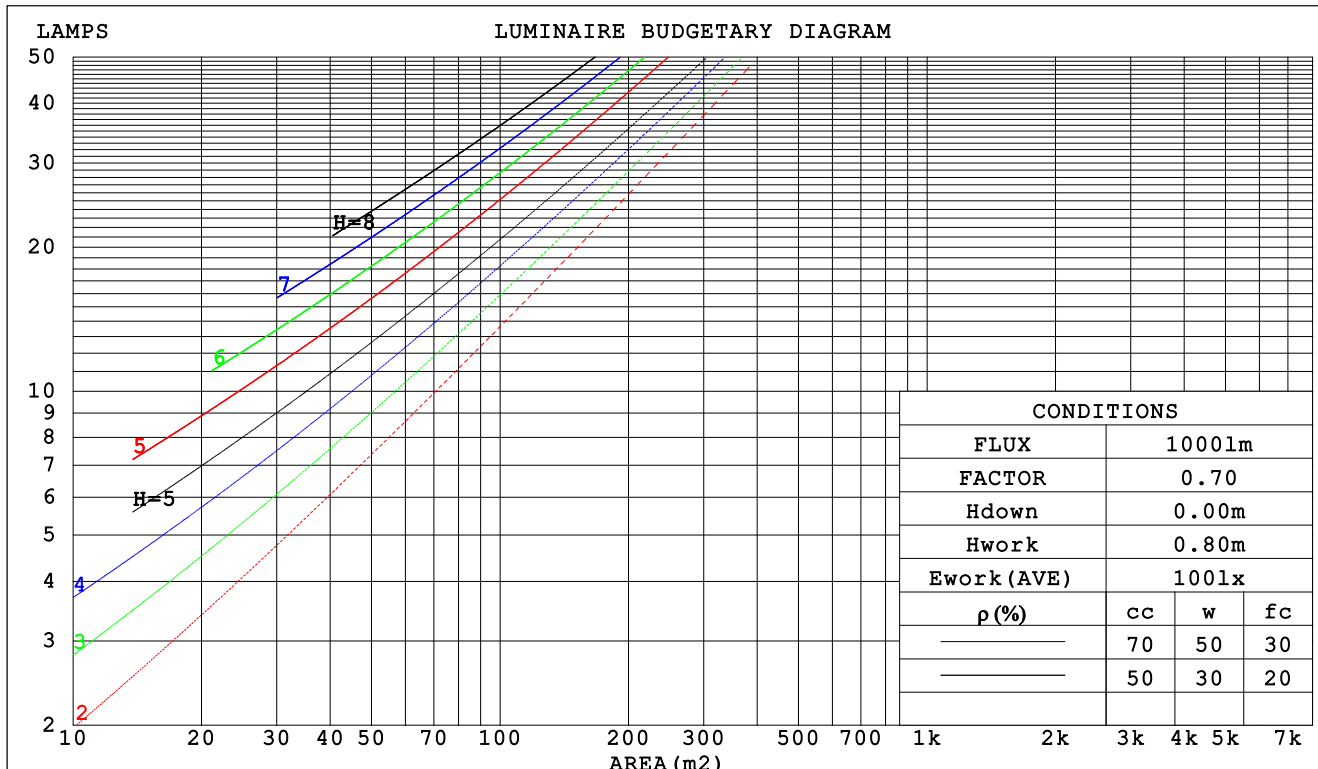
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 17 March 2023

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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_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)															
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	.95	.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	.35	.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:17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_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	.131	.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:17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm										
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_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	24.2	25.7	24.4	25.9	26.1	23.9	25.4	24.1	25.6	25.8
3H	25.6	27.0	25.9	27.2	27.5	25.3	26.7	25.6	26.9	27.2
4H	26.2	27.5	26.5	27.7	28.0	25.9	27.2	26.2	27.5	27.7
6H	26.5	27.8	26.8	28.0	28.3	26.3	27.6	26.7	27.8	28.1
8H	26.6	27.8	26.9	28.1	28.4	26.5	27.7	26.8	28.0	28.3
12H	26.6	27.8	27.0	28.1	28.4	26.6	27.7	26.9	28.0	28.3
4H 2H	24.7	26.0	25.0	26.3	26.5	24.5	25.8	24.8	26.1	26.3
3H	26.3	27.5	26.7	27.8	28.1	26.1	27.3	26.5	27.6	27.9
4H	27.0	28.1	27.4	28.4	28.7	26.8	27.9	27.2	28.2	28.5
6H	27.5	28.4	27.9	28.8	29.1	27.4	28.3	27.8	28.7	29.0
8H	27.6	28.5	28.0	28.9	29.2	27.6	28.5	28.0	28.8	29.2
12H	27.7	28.5	28.1	28.9	29.3	27.8	28.6	28.2	28.9	29.3
8H 4H	27.2	28.1	27.7	28.5	28.9	27.1	27.9	27.5	28.3	28.7
6H	27.9	28.6	28.3	29.0	29.4	27.8	28.5	28.2	28.9	29.3
8H	28.1	28.7	28.5	29.1	29.6	28.1	28.7	28.5	29.1	29.6
12H	28.2	28.7	28.7	29.2	29.7	28.3	28.9	28.8	29.3	29.8
12H 4H	27.3	28.1	27.7	28.4	28.8	27.1	27.9	27.5	28.3	28.7
6H	27.9	28.5	28.4	29.0	29.4	27.8	28.5	28.3	28.9	29.3
8H	28.1	28.7	28.6	29.1	29.6	28.2	28.7	28.6	29.2	29.6
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 1870 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.2)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		

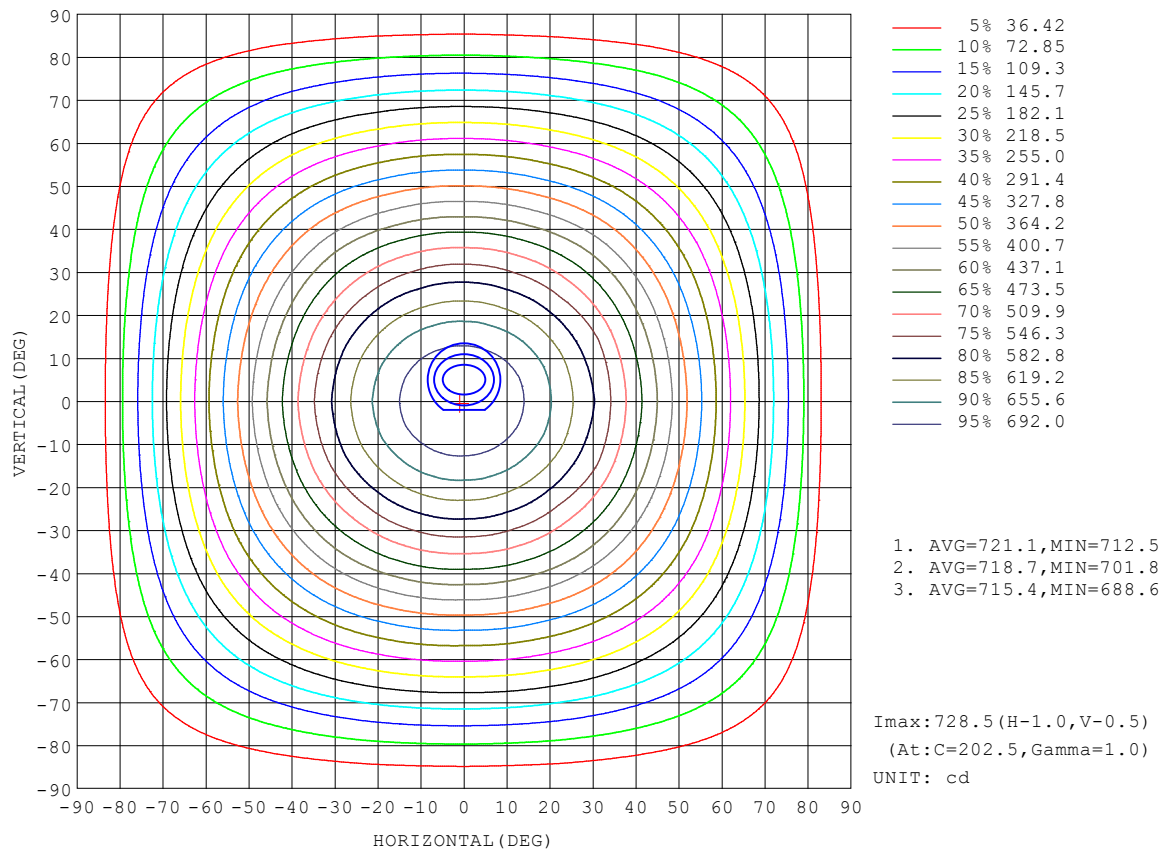
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	47	41	58	47	40	57	47	40	34
0.80	69	57	50	68	57	50	66	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: 17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		

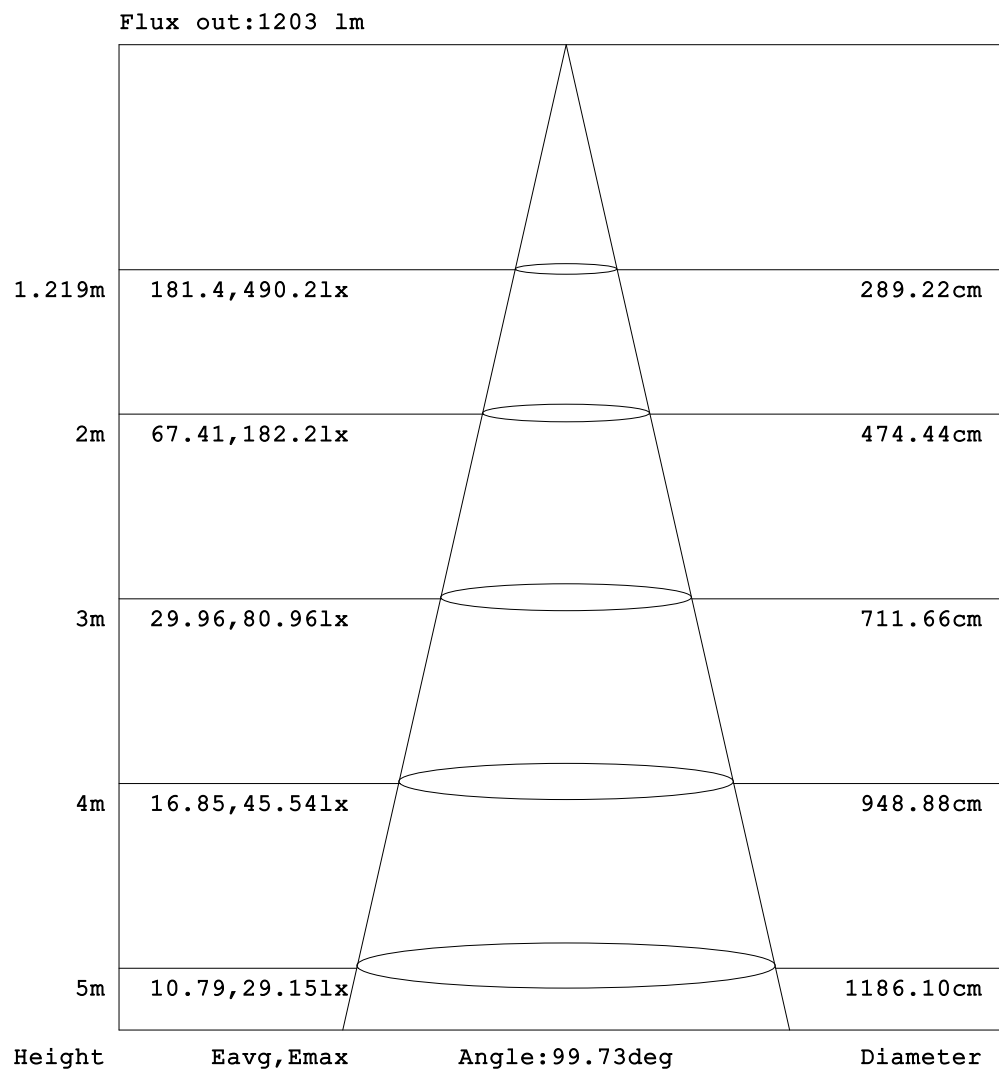


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:17 March 2023

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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		



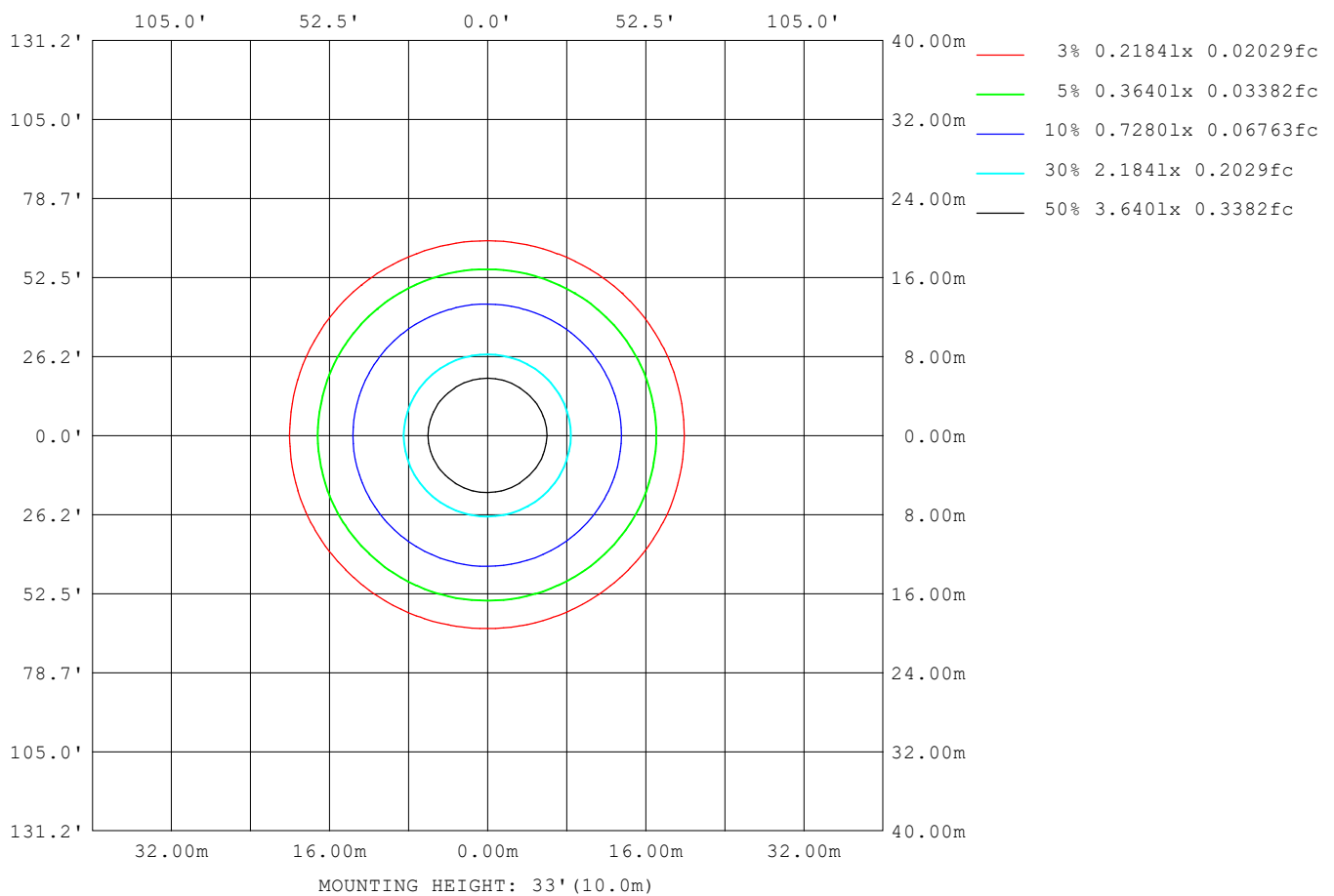
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 17 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:240.0V I:0.1009A P:22.03W PF:0.9098 Lamp Flux:1869.92x1 lm		
NAME: GRAZER_1146_NA_WHT_OV_HE_300mA_4000K CRI90		
MFR.: DARKON		

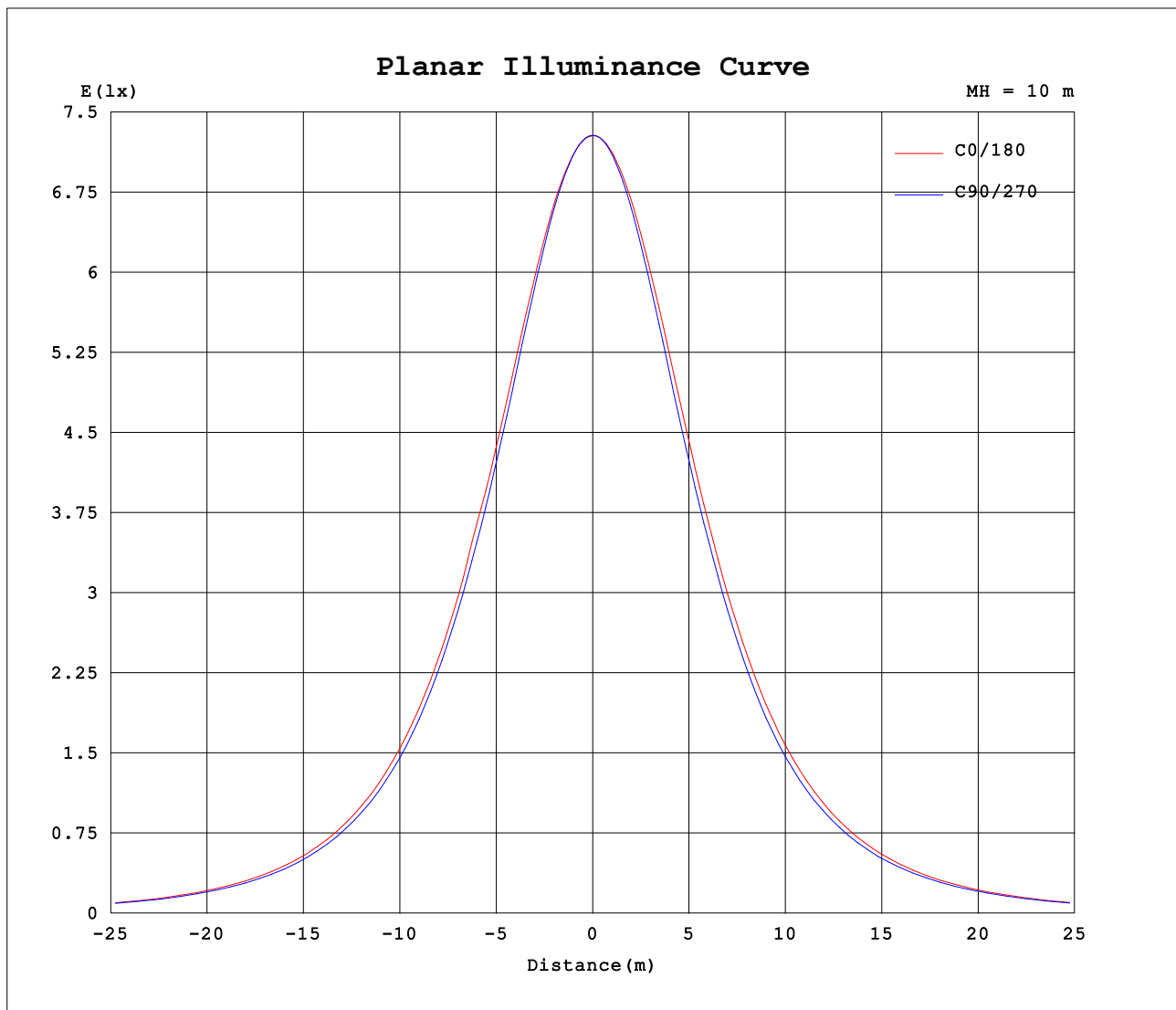
AvgL	cd/m2
L_0~180 (65) av	24931
L_0~180 (75) av	20965
L_0~180 (85) av	12344
L_90~270 (65) av	23523
L_90~270 (75) av	21104
L_90~270 (85) av	19953
L_45 (65) av	24238
L_45 (75) av	21198
L_45 (85) av	17120

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:17 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: 17 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:

