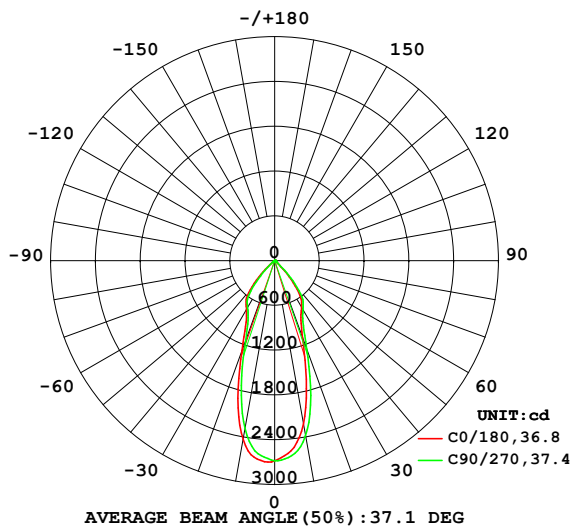


LUMINAIRE PHOTOMETRIC TEST REPORT

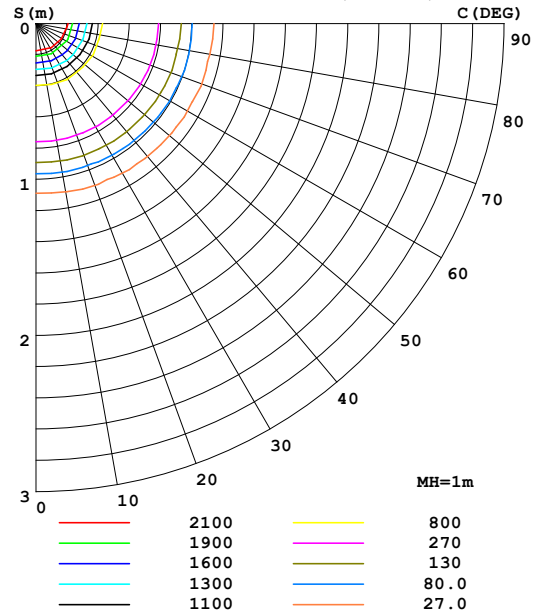
Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 104.22 lm/W			
MODEL		I _{max} (cd)	2701	S/MH (C0/180)	0.64
NOMINAL POWER(W)	18	LOR (%)	100.0	S/MH (C90/270)	0.60
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1751.8	η UP,DN (C0-180)	0.0,50.3
NOMINAL FLUX(lm)	1751.76	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,49.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	240.31	η down (%)	100.0	CIBSE SHR MAX	0.60

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [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	2223	2304	2384	2447	2435	2368	2291	2214	0- 10	240.7	240.7	13.7,13.7
20	1101	1176	1260	1296	1285	1230	1140	1082	10- 20	486.4	727.1	41.5,41.5
30	724.9	745.4	762.0	767.7	759.3	737.4	729.2	723.0	20- 30	413.4	1140	65.1,65.1
40	389.9	425.8	471.4	513.4	510.1	467.4	427.4	388.3	30- 40	390.5	1531	87.4,87.4
50	43.74	50.73	57.42	69.19	65.05	53.04	45.92	43.02	40- 50	168.9	1700	97,97
60	16.14	18.37	18.81	19.08	18.74	18.48	18.10	16.44	50- 60	26.33	1726	98.5,98.5
70	9.337	9.935	9.385	8.871	8.671	9.145	9.700	8.944	60- 70	12.29	1739	99.2,99.2
80	7.412	7.770	8.201	7.669	7.548	7.327	7.293	7.248	70- 80	9.540	1748	99.8,99.8
90	0.0635	0.0558	0.0714	0.0570	0.0599	0.0613	0.0733	0.0583	80- 90	3.643	1752	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): 1651.5 lm

%lum = 94.3%

%lamp = 94.3%

Conical surface Flux(120deg): 1726.3 lm

%lum = 98.5%

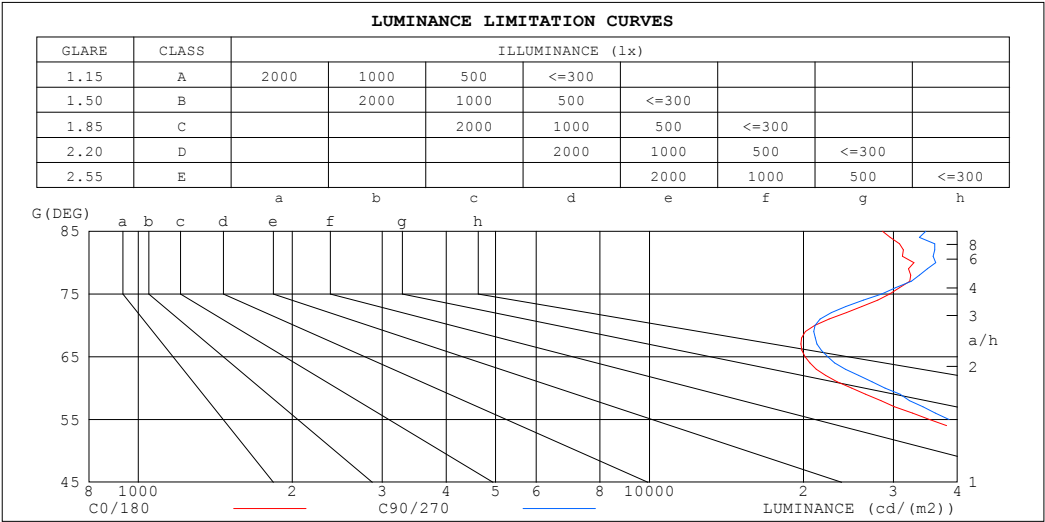
%lamp = 98.5%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	28575	34681
80	32912	36286
75	29492	28428
70	21049	21082
65	20156	22307
60	24885	28904
55	35297	38548
50	52467	68636
45	175250	249390

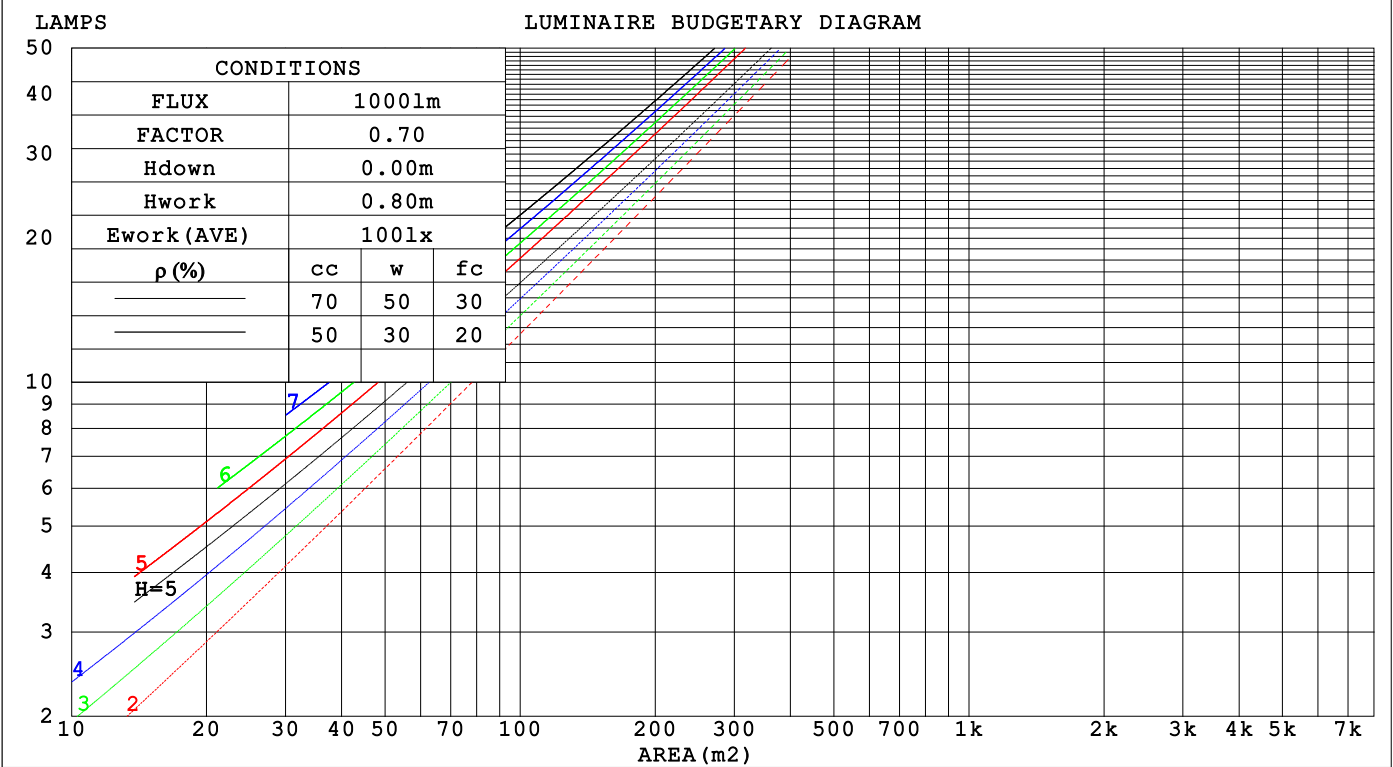
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHdI:0.18% ITHdI:18.38% KDisp:0.9831		
Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	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															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz			UTHDI:0.18% ITHDI:18.38% KDisp:0.9831			Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D			TYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			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	.184	.105	.033	.177	.101	.032	.165	.095	.030	.153	.088	.028	.142	.083	.027															
2.0	.176	.096	.030	.170	.094	.029	.160	.089	.028	.150	.084	.026	.141	.080	.025															
3.0	.167	.089	.027	.162	.087	.026	.153	.083	.025	.145	.079	.024	.137	.076	.023															
4.0	.159	.083	.024	.155	.081	.024	.147	.078	.023	.139	.075	.023	.133	.072	.022															
5.0	.151	.077	.022	.147	.076	.022	.141	.073	.022	.134	.071	.021	.128	.068	.021															
6.0	.144	.072	.021	.141	.071	.020	.135	.069	.020	.129	.067	.020	.124	.065	.019															
7.0	.137	.068	.019	.134	.067	.019	.129	.065	.019	.124	.063	.018	.119	.062	.018															
8.0	.131	.064	.018	.128	.063	.018	.124	.062	.018	.119	.060	.017	.115	.059	.017															
9.0	.125	.060	.017	.123	.060	.017	.119	.059	.017	.114	.057	.016	.111	.056	.016															
10.0	.120	.057	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.015															

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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.072	.115	.086	.062	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.108	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.067	.043	.026	.039	.025	.015	.013	.008	.005	
8.0	.106	.064	.036	.092	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.096	.055	.027	.083	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz										
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831					Lamp Flux:1751.76x1 lm					
NAME: MD18-18-XX-02 4000K RA90 38D					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Norming lighting					SUR.: 41mm			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	26.5	27.5	26.7	27.6	27.8	27.1	28.0	27.3	28.2	28.4
3H	26.4	27.3	26.6	27.5	27.7	26.9	27.8	27.2	28.0	28.2
4H	26.4	27.2	26.6	27.4	27.6	26.9	27.7	27.2	28.0	28.2
6H	26.4	27.2	26.7	27.4	27.6	26.9	27.7	27.2	27.9	28.2
8H	26.4	27.1	26.7	27.4	27.6	26.9	27.7	27.2	27.9	28.2
12H	26.3	27.1	26.7	27.3	27.6	26.9	27.6	27.2	27.9	28.2
4H 2H	26.3	27.1	26.5	27.3	27.6	26.8	27.7	27.1	27.9	28.1
3H	26.2	26.9	26.5	27.2	27.5	26.7	27.5	27.0	27.7	28.0
4H	26.2	26.9	26.6	27.2	27.5	26.7	27.4	27.1	27.7	28.0
6H	26.3	26.9	26.7	27.2	27.5	26.8	27.4	27.2	27.7	28.1
8H	26.3	26.8	26.7	27.2	27.6	26.8	27.4	27.2	27.7	28.1
12H	26.3	26.8	26.7	27.2	27.6	26.8	27.3	27.2	27.7	28.1
8H 4H	26.1	26.7	26.5	27.0	27.4	26.7	27.2	27.0	27.5	27.9
6H	26.3	26.7	26.7	27.1	27.5	26.8	27.2	27.2	27.6	28.0
8H	26.3	26.7	26.8	27.1	27.6	26.8	27.2	27.3	27.6	28.1
12H	26.4	26.7	26.8	27.2	27.6	26.9	27.2	27.4	27.7	28.1
12H 4H	26.1	26.6	26.5	27.0	27.4	26.6	27.1	27.0	27.5	27.9
6H	26.3	26.6	26.7	27.1	27.5	26.8	27.1	27.2	27.6	28.0
8H	26.3	26.7	26.8	27.1	27.6	26.8	27.2	27.3	27.6	28.1
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.3 / - 5.8					+ 2.5 / - 6.1				
1.5H	+ 4.4 / - 5.5					+ 4.5 / - 6.1				
2.0H	+ 4.9 / - 2.0					+ 6.2 / - 2.7				

CIE Pub.117, 1752 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.9$)
Area: 0.0013 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

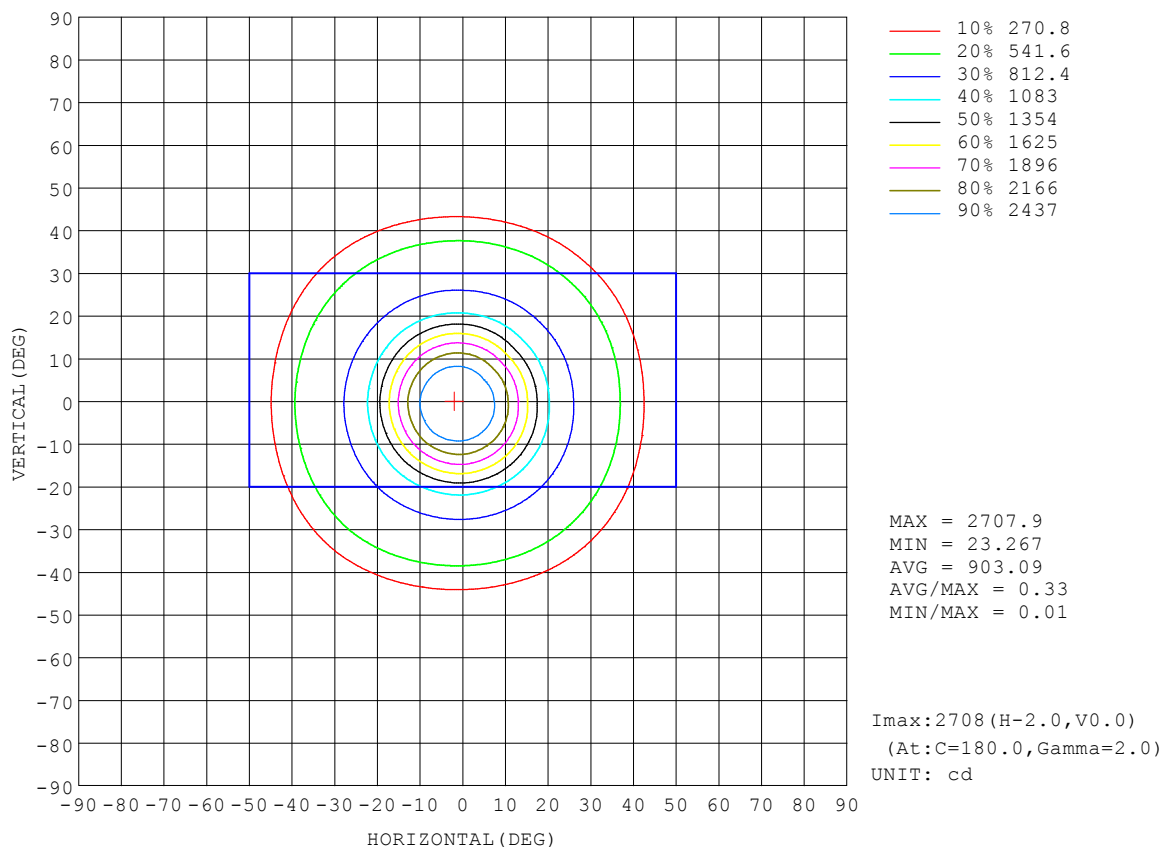
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	76	72	82	76	72	68
0.80	92	85	81	91	85	81	90	84	80	76
1.00	97	91	87	96	90	86	94	90	86	82
1.25	101	96	92	100	95	91	98	94	91	86
1.50	104	99	95	103	98	95	101	97	94	89
2.00	107	103	99	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	104	101	99	93
3.00	111	107	104	109	106	103	106	103	101	94
4.00	113	110	108	111	108	106	107	105	104	96
5.00	114	112	110	112	110	108	108	107	105	97
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity: 65.0%
 Test Distance: 3.090m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

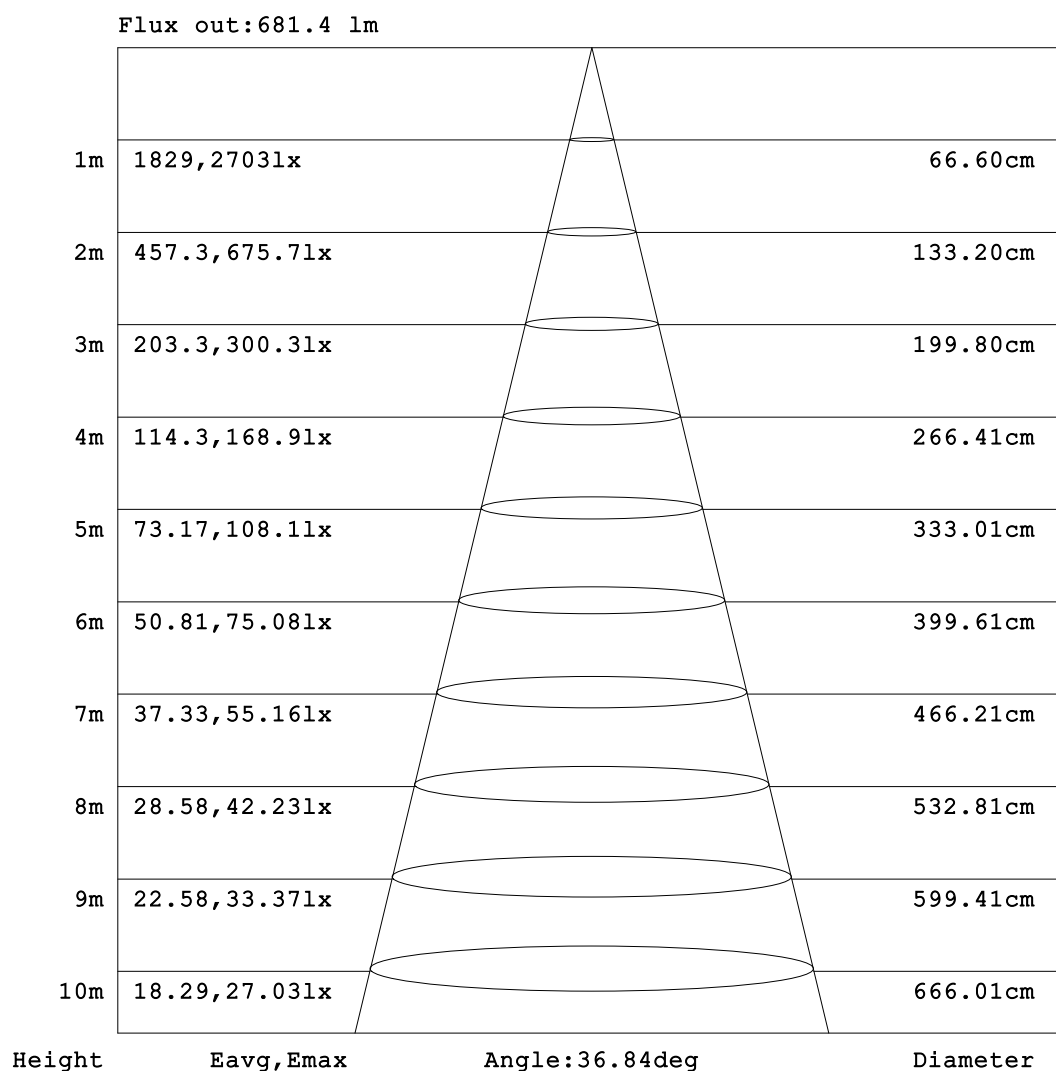


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



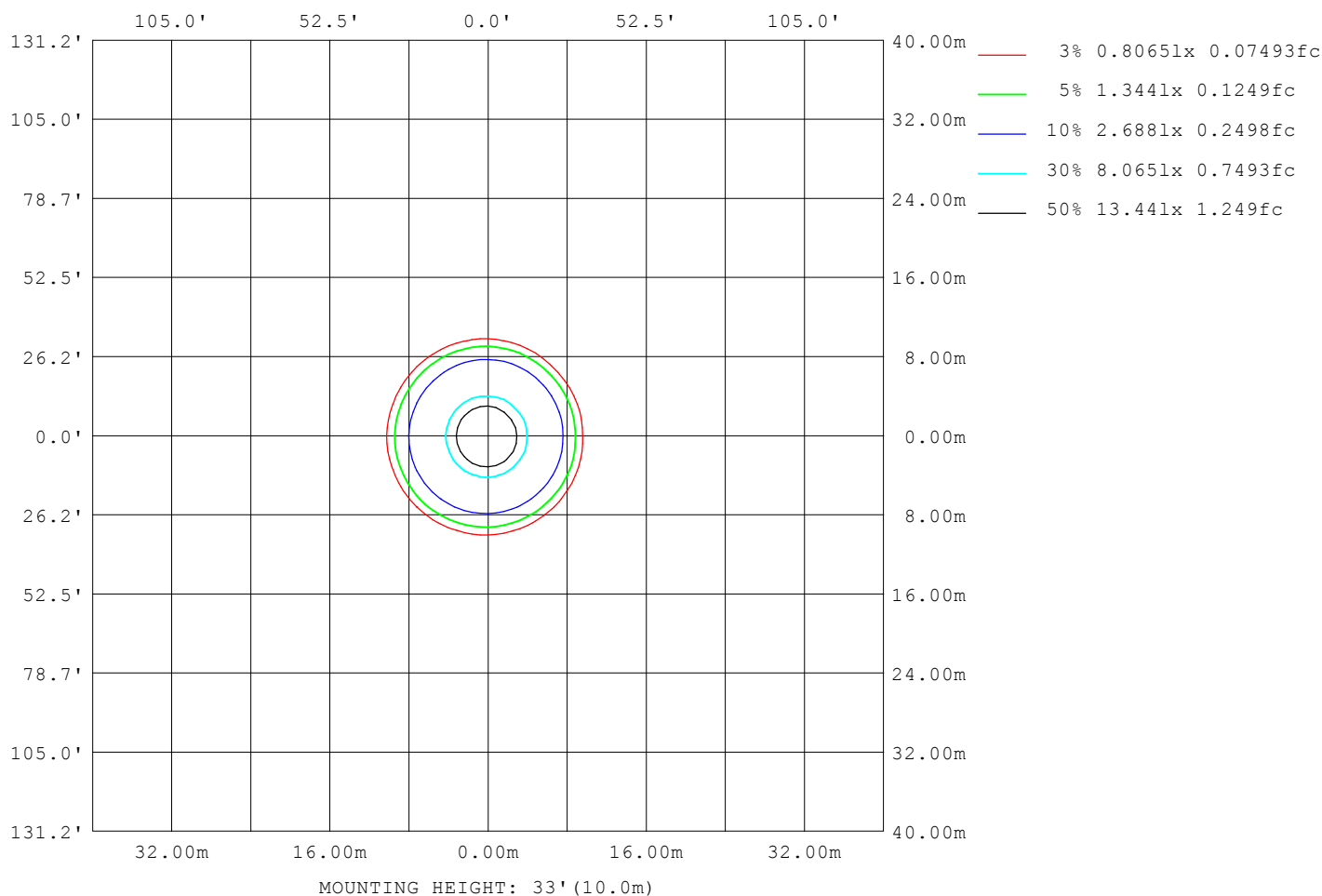
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:240.4V I:0.0723A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.38% KDisp:0.9831 Lamp Flux:1751.76x1 lm		
NAME: MD18-18-XX-02 4000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

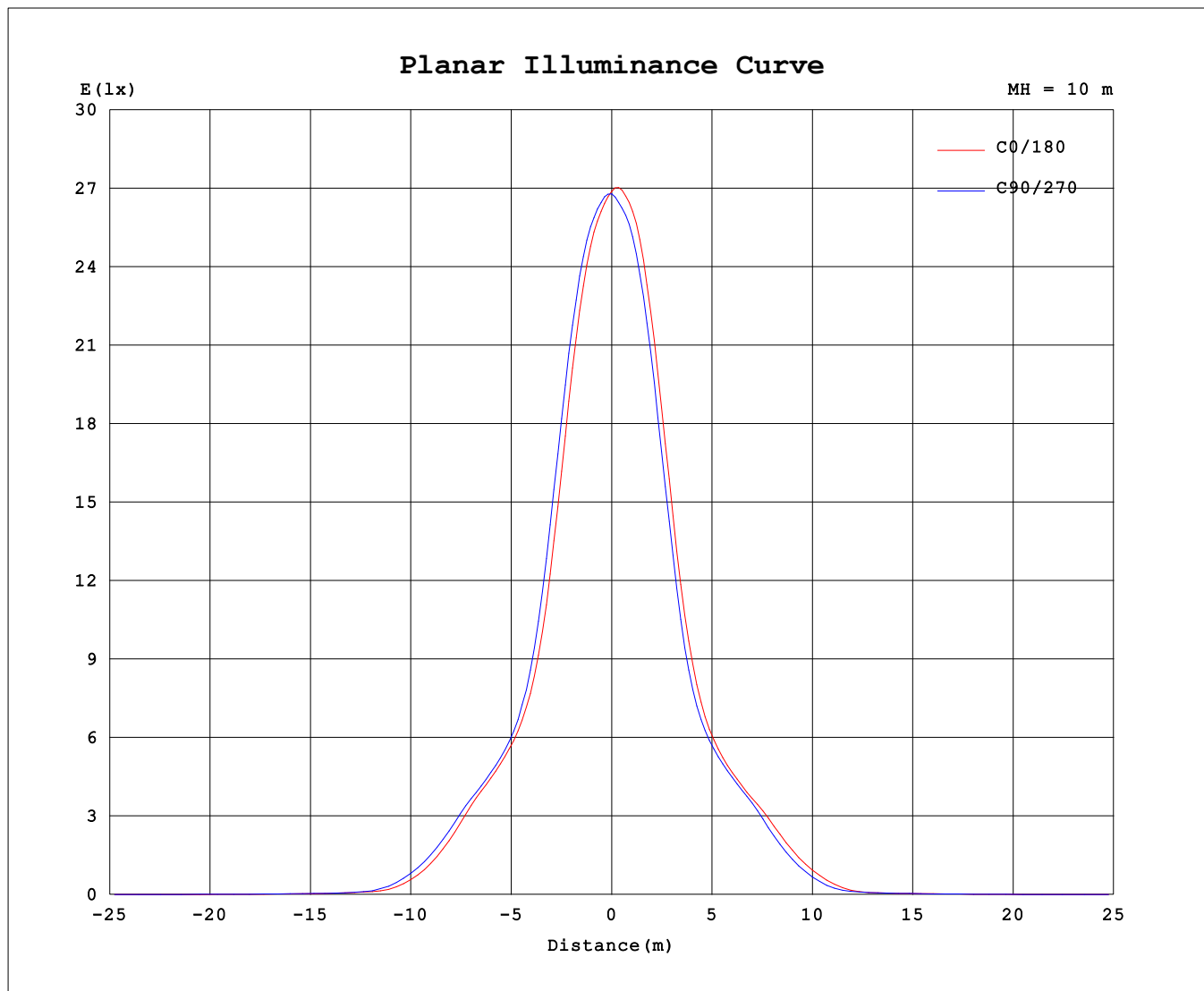
AvgL	cd/m2
L_0~180 (65) av	20859
L_0~180 (75) av	27097
L_0~180 (85) av	29713
L_90~270 (65) av	22127
L_90~270 (75) av	29051
L_90~270 (85) av	31175
L_45 (65) av	21636
L_45 (75) av	27910
L_45 (85) av	29590

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity: 65.0%
Test Distance: 3.090m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

```

Photometric Data Table [cd]

G/C	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0
0.0	2682	2682	2682	2682	2682	2682	2682	2682
3.0	2616	2630	2660	2688	2697	2669	2638	2615
6.0	2513	2552	2598	2646	2650	2599	2560	2509
9.0	2313	2385	2458	2517	2512	2446	2375	2303
12.0	2011	2112	2213	2270	2256	2179	2092	1995
15.0	1643	1762	1872	1921	1909	1834	1733	1625
18.0	1285	1399	1494	1537	1522	1460	1363	1265
21.0	1026	1085	1162	1194	1188	1134	1056	1011
24.0	873.0	905.8	953.1	970.5	963.2	926.4	879.2	863.5
27.0	786.4	809.7	829.8	844.2	833.9	805.5	787.6	780.3
30.0	724.9	745.4	762.0	767.7	759.3	737.4	729.2	723.0
33.0	668.9	686.9	705.2	711.3	703.7	682.9	677.6	670.8
36.0	579.2	606.2	642.2	655.9	650.5	625.9	607.4	582.7
39.0	439.3	474.2	519.4	558.1	555.3	513.3	476.9	439.9
42.0	292.2	327.3	372.3	413.6	412.5	369.3	329.1	286.5
45.0	160.7	194.9	229.5	261.1	264.6	227.3	191.7	152.7
48.0	67.57	89.80	109.1	130.5	132.6	108.5	81.93	64.73
51.0	39.44	44.50	44.75	48.86	45.28	40.59	39.65	38.74
54.0	29.05	32.20	31.63	31.30	30.19	29.46	29.24	28.92
57.0	21.29	23.95	24.29	24.46	24.06	23.52	23.13	21.64
60.0	16.14	18.37	18.81	19.08	18.74	18.48	18.10	16.44
63.0	12.48	13.96	14.27	14.33	13.99	14.09	13.86	12.71
66.0	10.47	11.40	11.49	11.24	11.03	11.39	11.31	10.61
69.0	9.382	9.984	9.774	9.362	9.153	9.569	9.861	9.220
72.0	9.720	10.23	9.117	8.326	8.014	8.857	10.02	8.990
75.0	9.899	10.48	9.577	8.555	8.335	9.155	9.973	9.369
78.0	8.741	9.450	9.119	8.527	8.333	8.594	8.781	8.493
81.0	6.338	7.069	7.308	7.057	6.773	6.640	6.543	6.290
84.0	4.007	4.464	4.585	4.666	4.347	4.020	3.979	3.783
87.0	0.7863	1.224	1.848	2.139	1.889	1.401	0.8796	0.4134
90.0	0.0635	0.0558	0.0714	0.0570	0.0599	0.0613	0.0733	0.0583

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-09-06

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity: 65.0%
 Test Distance: 3.090m [K=1.0000]
 Remarks: