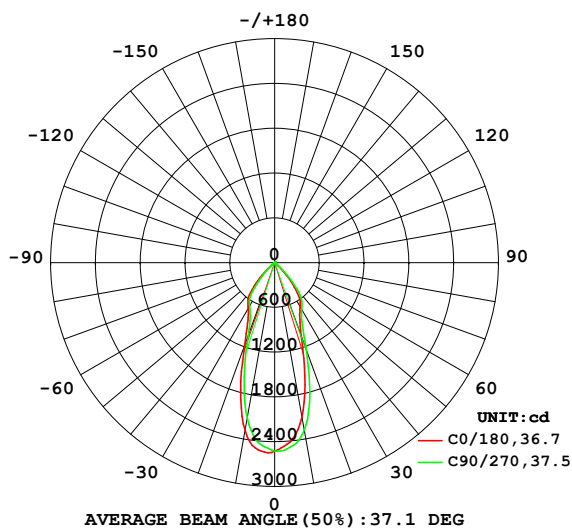


LUMINAIRE PHOTOMETRIC TEST REPORT

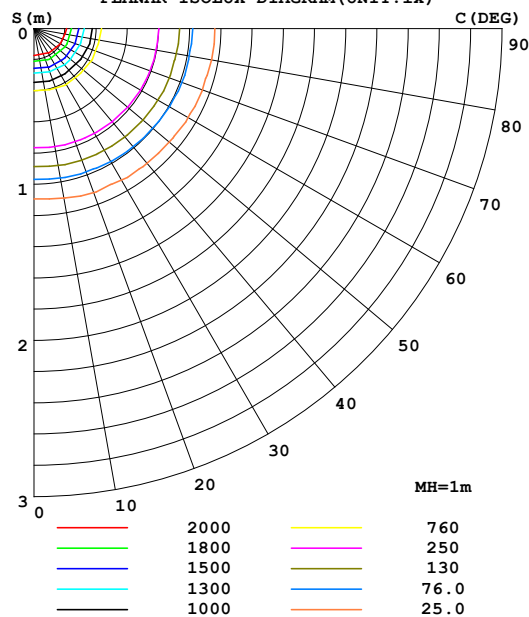
Test:U:240.4V I:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 98.50 lm/W
MODEL		I _{max} (cd)	2550	S/MH(C0/180)	0.63	
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.59	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1651.2	η UP,DN(C0-180)	0.0,51.4	
NOMINAL FLUX(lm)	1651.16	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.6	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	240.39	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	2106	2205	2284	2327	2284	2191	2122	2074	0- 10	226.8	226.8	13.7,13.7
20	1052	1155	1241	1239	1188	1111	1036	1010	10- 20	458.6	685.3	41.5,41.5
30	686.2	710.2	728.4	729.5	712.6	684.9	676.1	677.3	20- 30	390.1	1075	65.1,65.1
40	374.0	424.1	466.7	492.4	472.9	415.6	377.6	358.6	30- 40	367.9	1443	87.4,87.4
50	43.37	54.06	63.87	67.24	53.88	39.78	37.99	40.56	40- 50	158.6	1602	97,97
60	15.89	18.41	18.96	18.20	16.93	16.21	16.18	15.70	50- 60	25.06	1627	98.5,98.5
70	8.972	9.772	9.357	8.491	7.888	8.052	8.967	8.594	60- 70	11.65	1639	99.2,99.2
80	7.446	8.190	8.335	7.431	6.803	6.162	6.372	6.856	70- 80	9.049	1648	99.8,99.8
90	0.0626	0.0491	0.0680	0.0548	0.0613	0.0616	0.0736	0.0589	80- 90	3.498	1651	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): 1556.7 lm

%lum = 94.3%

%lamp = 94.3%

Conical surface Flux(120deg): 1627 lm

%lum = 98.5%

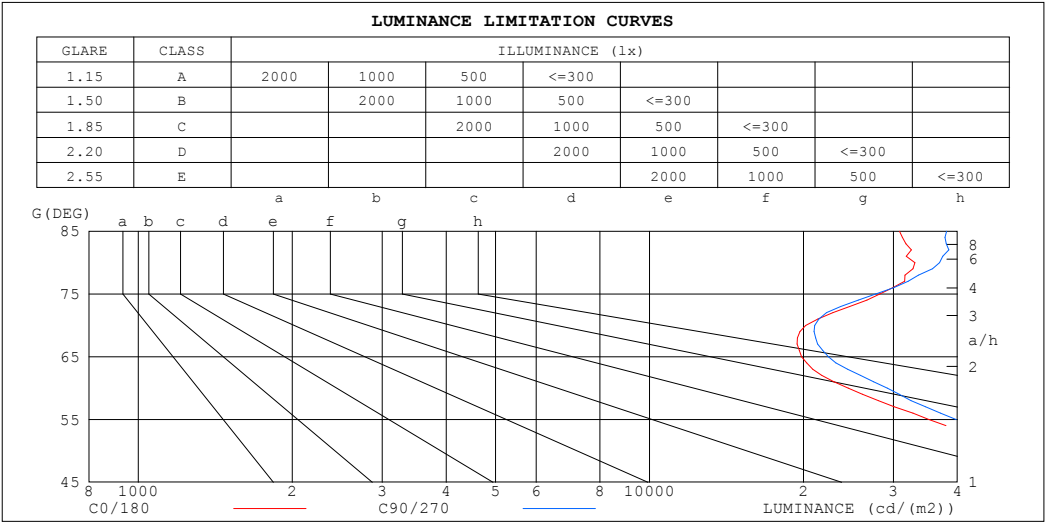
%lamp = 98.5%

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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K 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	30841	38116
80	33035	36918
75	28193	27673
70	20211	21042
65	19832	22381
60	24492	29169
55	35228	39808
50	51986	76427
45	170197	257725

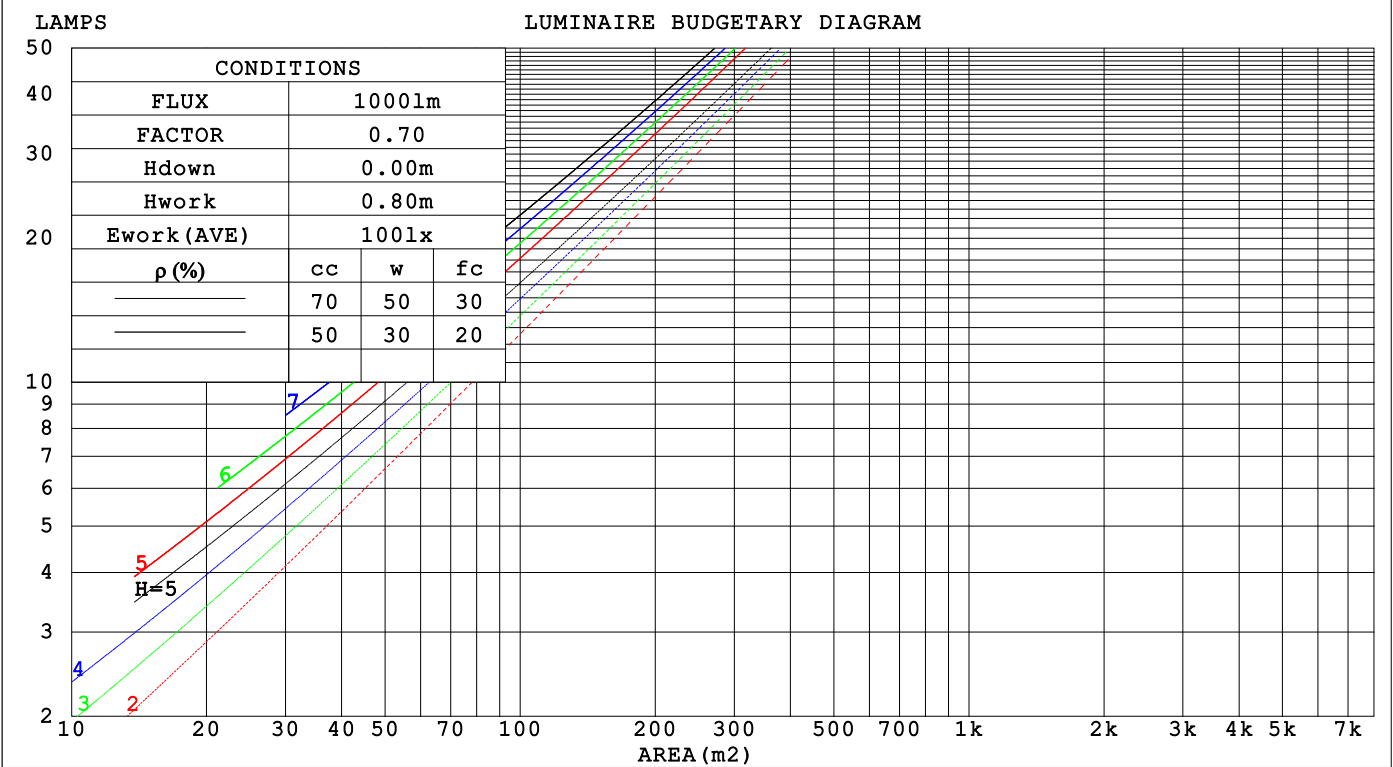
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHdI:0.18% ITHdI:18.43% KDisp:0.9830		
Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K 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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz			UTHDi:0.18% ITHDi:18.43% KDisp:0.9830			Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K 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	.143	.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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz										
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm										
NAME: MD18-18-XX-02 3000K 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	27.7	27.8	27.2	28.2	27.4	28.3	28.5
3H	26.4	27.3	26.7	27.5	27.7	27.1	28.0	27.3	28.2	28.4
4H	26.4	27.2	26.7	27.4	27.7	27.0	27.9	27.3	28.1	28.3
6H	26.4	27.2	26.7	27.4	27.7	27.1	27.8	27.4	28.1	28.3
8H	26.4	27.2	26.7	27.4	27.7	27.1	27.8	27.4	28.1	28.3
12H	26.4	27.1	26.7	27.4	27.7	27.1	27.8	27.4	28.1	28.3
4H 2H	26.3	27.1	26.6	27.4	27.6	27.0	27.8	27.3	28.0	28.3
3H	26.2	26.9	26.5	27.2	27.5	26.9	27.6	27.2	27.9	28.2
4H	26.2	26.9	26.6	27.2	27.5	26.9	27.5	27.2	27.8	28.1
6H	26.3	26.9	26.7	27.2	27.6	26.9	27.5	27.3	27.9	28.2
8H	26.3	26.9	26.7	27.2	27.6	27.0	27.5	27.4	27.9	28.2
12H	26.4	26.9	26.8	27.2	27.6	27.0	27.5	27.4	27.9	28.3
8H 4H	26.2	26.7	26.6	27.1	27.4	26.8	27.3	27.2	27.7	28.1
6H	26.3	26.8	26.8	27.2	27.6	26.9	27.4	27.4	27.8	28.2
8H	26.4	26.8	26.8	27.2	27.6	27.0	27.4	27.5	27.8	28.3
12H	26.5	26.8	26.9	27.2	27.7	27.1	27.4	27.6	27.9	28.3
12H 4H	26.1	26.6	26.6	27.0	27.4	26.8	27.3	27.2	27.6	28.0
6H	26.3	26.7	26.8	27.1	27.6	26.9	27.3	27.4	27.7	28.2
8H	26.4	26.7	26.9	27.2	27.7	27.0	27.4	27.5	27.8	28.3
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.2 / - 5.6					+ 2.4 / - 5.9				
1.5H	+ 4.2 / - 5.4					+ 4.3 / - 5.9				
2.0H	+ 4.7 / - 2.0					+ 6.1 / - 2.7				

CIE Pub.117, 1651 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.7$)
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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

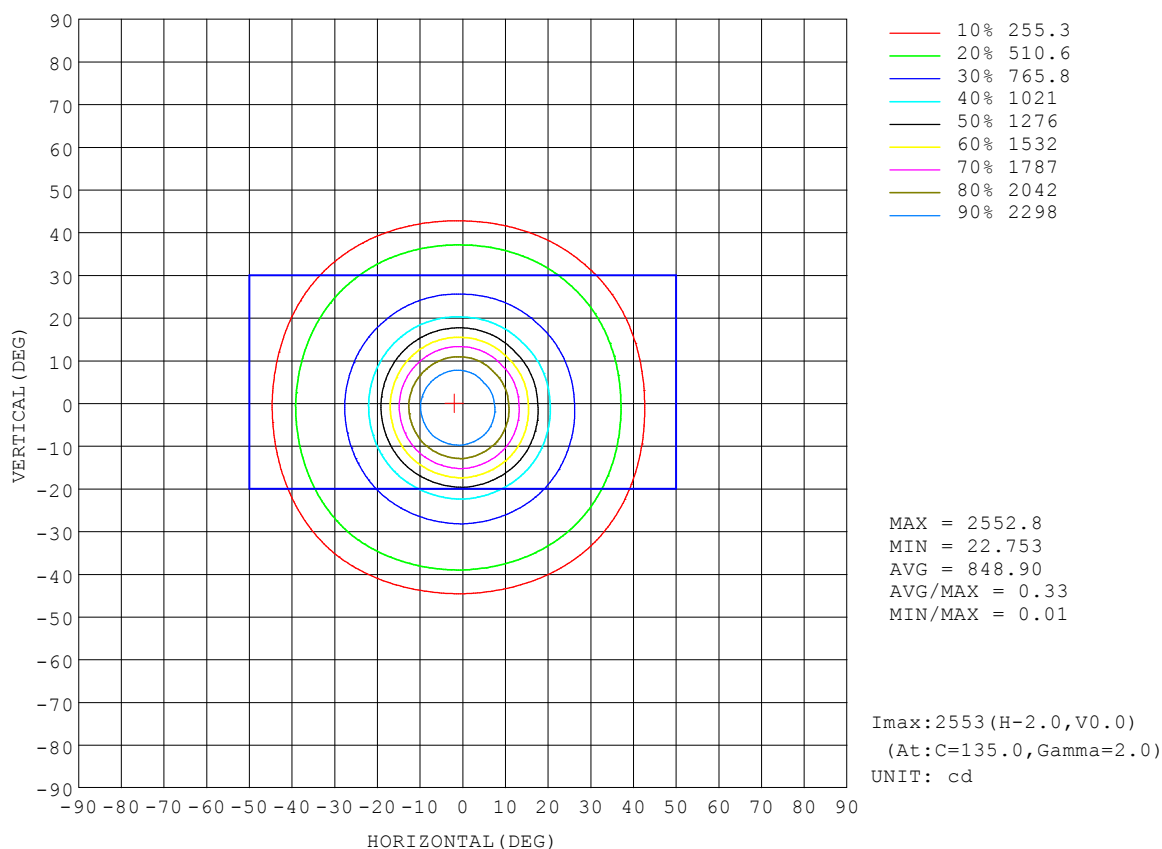
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	76	72	82	76	72	68
0.80	92	85	81	91	85	81	90	84	81	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
 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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

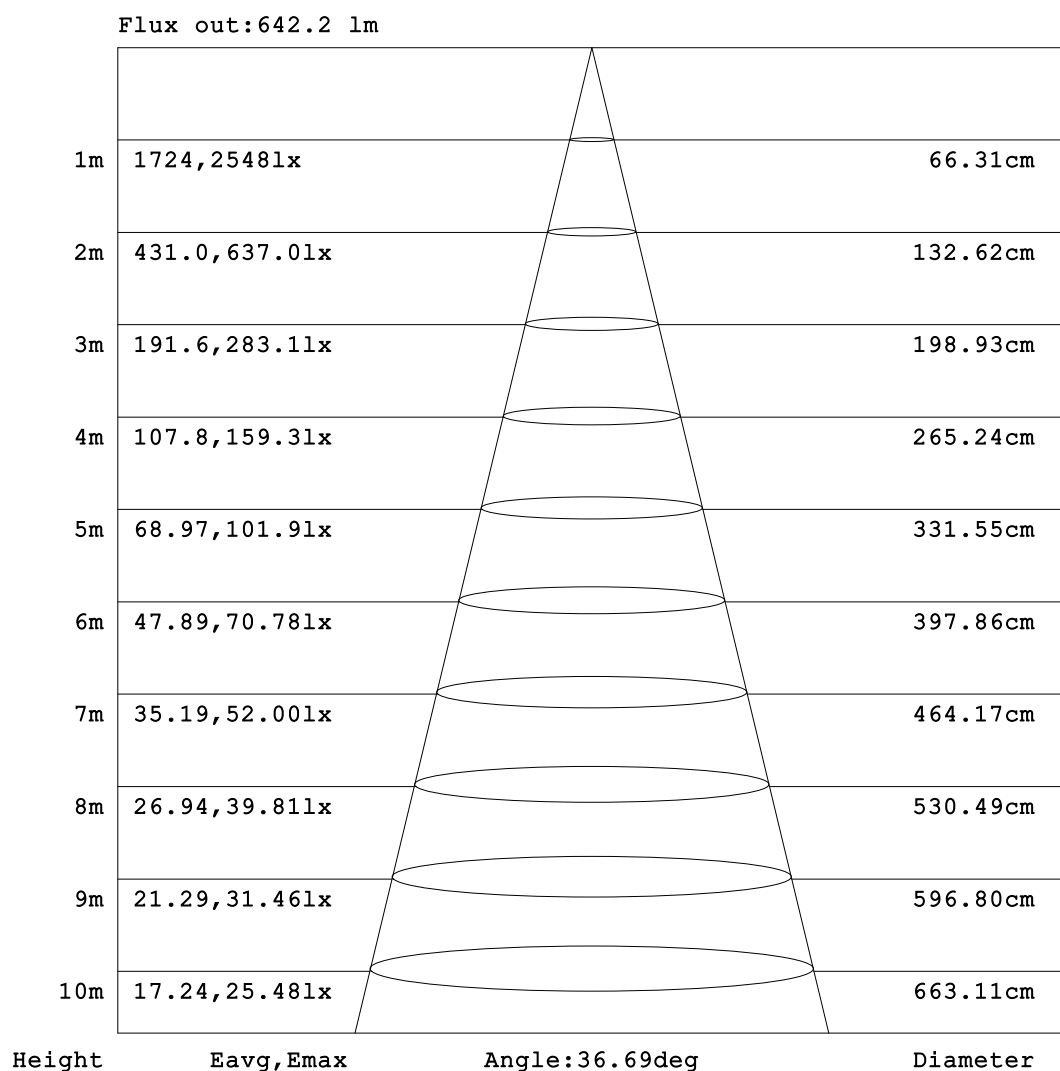


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

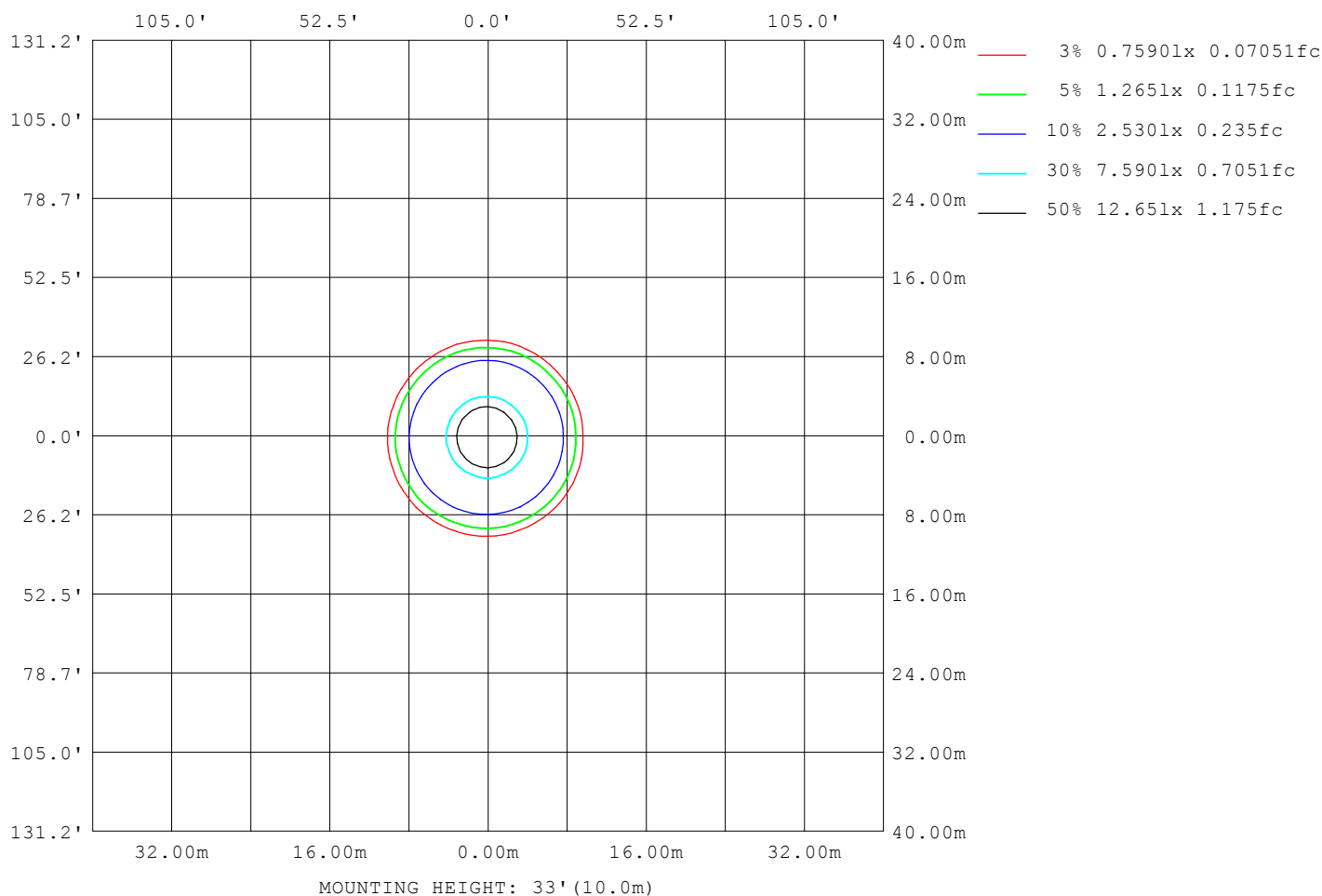


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:

ISOLUX DIAGRAM

Test:U:240.4V I:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K 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:0.0721A P:16.8W PF:0.9665 Freq:49.99Hz		
UTHDi:0.18% ITHDi:18.43% KDisp:0.9830 Lamp Flux:1651.16x1 lm		
NAME: MD18-18-XX-02 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

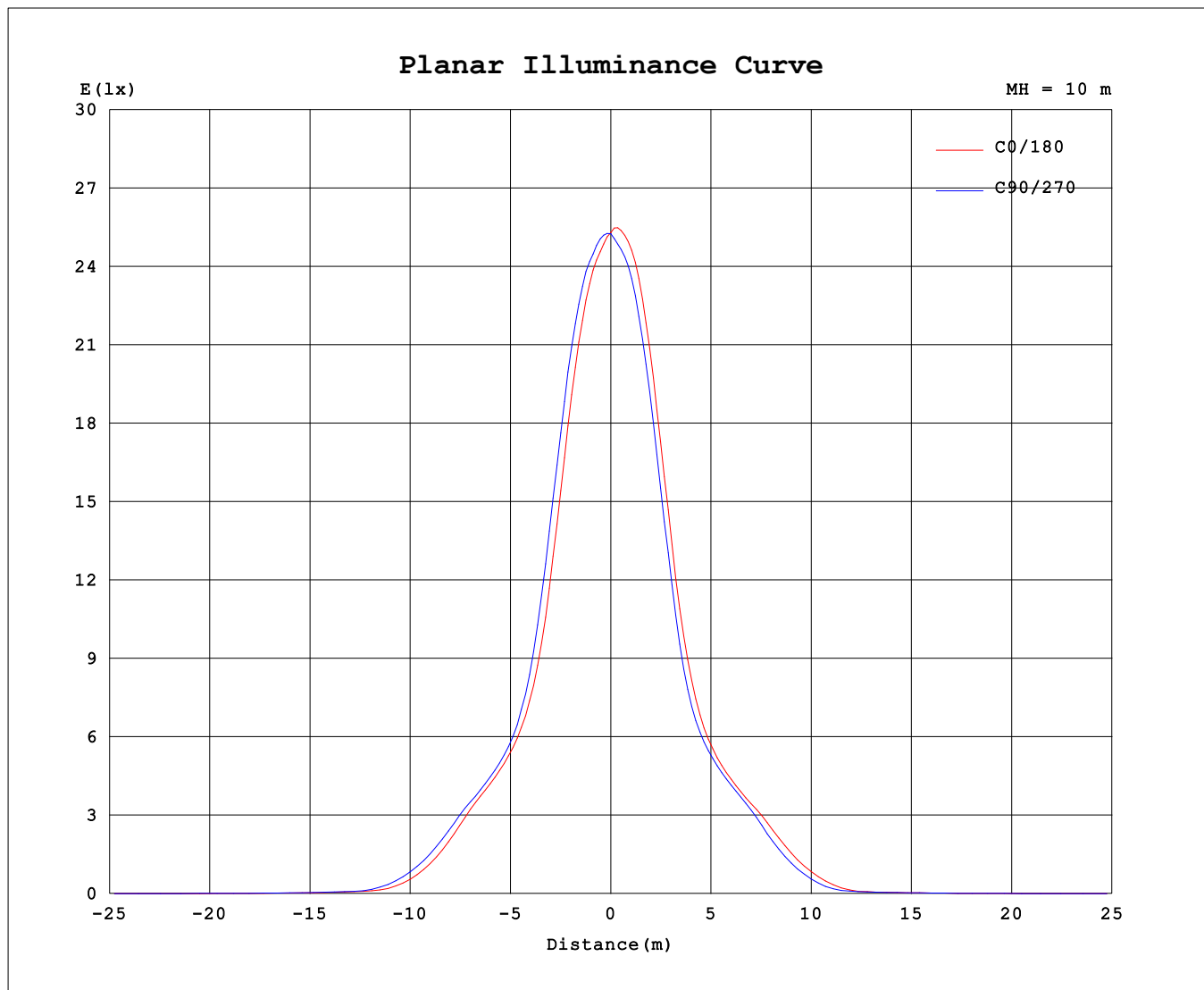
AvgL	cd/m2
L_0~180 (65) av	19711
L_0~180 (75) av	25360
L_0~180 (85) av	28804
L_90~270 (65) av	21058
L_90~270 (75) av	27360
L_90~270 (85) av	29320
L_45 (65) av	20493
L_45 (75) av	26639
L_45 (85) av	28019

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	2526	2526	2526	2526	2526	2526	2526	2526
3.0	2463	2482	2517	2544	2545	2507	2476	2464
6.0	2369	2413	2460	2508	2499	2431	2393	2356
9.0	2187	2276	2341	2392	2358	2270	2202	2158
12.0	1909	2036	2134	2161	2106	2005	1924	1872
15.0	1569	1715	1822	1834	1769	1669	1580	1526
18.0	1228	1369	1468	1470	1400	1315	1238	1183
21.0	978.9	1062	1140	1144	1098	1029	961.1	948.6
24.0	832.8	875.2	925.0	927.1	896.5	845.6	810.2	808.0
27.0	745.8	775.5	796.9	801.1	781.8	747.4	731.7	730.2
30.0	686.2	710.2	728.4	729.5	712.6	684.9	676.1	677.3
33.0	632.3	655.1	674.1	675.9	660.4	633.6	625.6	628.3
36.0	551.0	589.6	618.2	624.8	609.4	576.0	552.6	542.6
39.0	421.9	469.5	512.0	533.8	516.3	462.1	425.2	407.2
42.0	282.1	333.3	373.4	396.9	379.0	324.3	287.2	264.2
45.0	156.2	204.3	236.9	253.7	238.9	190.0	160.0	139.3
48.0	66.58	98.21	119.7	129.0	114.6	83.81	63.48	58.50
51.0	39.11	45.53	47.63	47.57	38.74	34.56	33.63	36.51
54.0	29.01	33.06	32.37	29.82	27.75	26.24	26.04	27.45
57.0	21.27	24.95	24.53	23.33	22.04	20.89	20.93	20.69
60.0	15.89	18.41	18.96	18.20	16.93	16.21	16.18	15.70
63.0	12.30	14.08	14.41	13.71	12.69	12.32	12.48	12.16
66.0	10.37	11.38	11.53	10.75	10.01	10.03	10.19	10.12
69.0	9.160	9.936	9.769	8.944	8.318	8.427	9.009	8.793
72.0	9.159	10.06	8.921	7.948	7.295	7.923	9.297	8.789
75.0	9.471	10.40	9.312	8.188	7.594	8.166	9.099	9.098
78.0	8.532	9.592	9.078	8.238	7.589	7.574	7.697	8.106
81.0	6.457	7.460	7.624	6.929	6.022	5.628	5.442	5.929
84.0	4.236	4.875	5.140	4.616	3.643	3.254	3.110	3.490
87.0	1.068	1.954	2.562	2.159	1.447	0.6420	0.4183	0.2596
90.0	0.0626	0.0491	0.0680	0.0548	0.0613	0.0616	0.0736	0.0589

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: