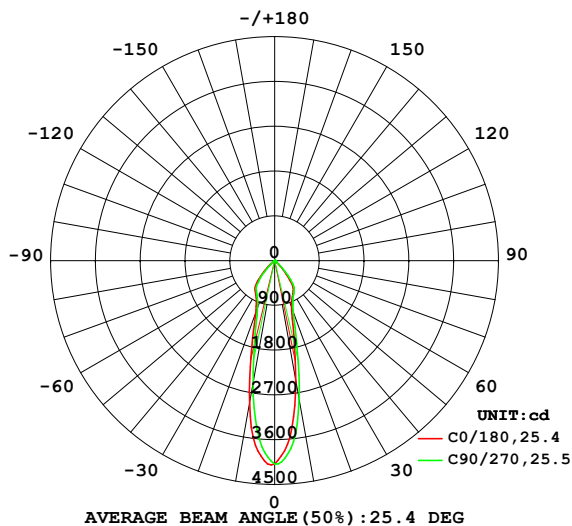


LUMINAIRE PHOTOMETRIC TEST REPORT

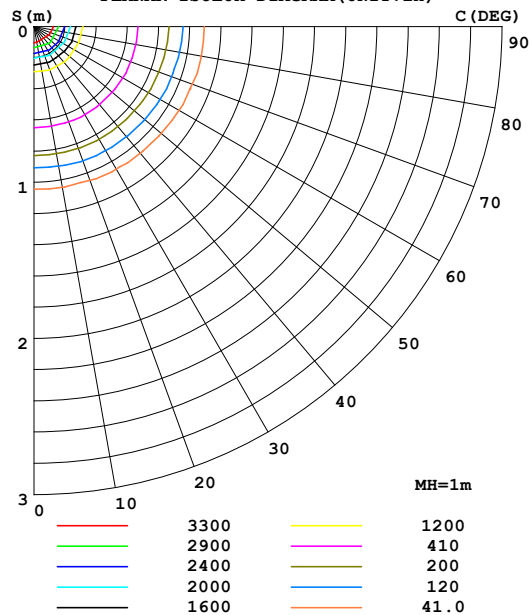
Test:U:240.4V I:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 106.25 lm/W			
MODEL		I _{max} (cd)	4117	S/MH (C0/180)	0.46
NOMINAL POWER(W)	18	LOR (%)	100.0	S/MH (C90/270)	0.41
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1789.6	η UP,DN (C0-180)	0.0,50.7
NOMINAL FLUX(lm)	1789.61	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,49.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	240.28	η down (%)	100.0	CIBSE SHR MAX	0.50

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	2458	2626	2833	2963	2922	2714	2513	2411	0- 10	319.9	319.9	17.9,17.9
20	1004	1049	1099	1146	1127	1070	1017	987.2	10- 20	459.9	779.8	43.6,43.6
30	747.6	758.2	771.4	774.8	768.3	750.0	734.7	732.1	20- 30	399.4	1179	65.9,65.9
40	405.8	446.0	502.1	536.0	527.5	478.6	433.6	399.0	30- 40	401.6	1581	88.3,88.3
50	35.58	41.28	54.95	65.03	64.55	45.66	35.62	33.93	40- 50	171.9	1753	97.9,97.9
60	9.381	10.47	11.27	11.65	11.03	10.15	9.236	9.142	50- 60	18.85	1772	99,99
70	6.512	6.893	7.020	7.083	6.620	6.269	6.090	6.327	60- 70	7.812	1779	99.4,99.4
80	6.399	6.568	7.222	7.212	6.867	6.147	6.332	6.355	70- 80	6.665	1786	99.8,99.8
90	0.0673	0.0453	0.0621	0.0480	0.0532	0.0524	0.0682	0.0557	80- 90	3.539	1790	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): 1705.1 lm

%lum = 95.3%

%lamp = 95.3%

Conical surface Flux(120deg): 1771.6 lm

%lum = 99.0%

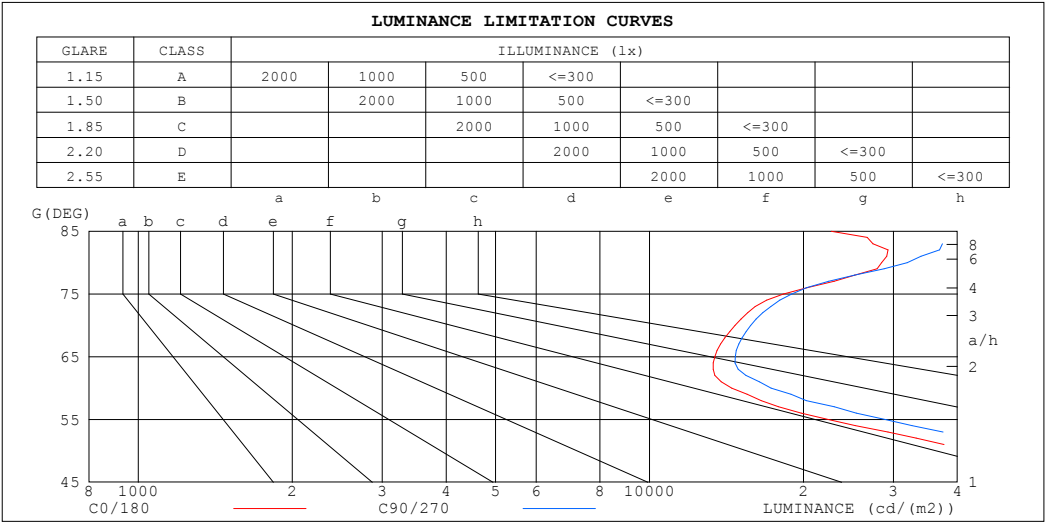
%lamp = 99.0%

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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	22681	39285
80	28432	31932
75	18259	18956
70	14692	15761
65	13410	14712
60	14477	17303
55	22382	28940
50	42709	65636
45	173966	264604

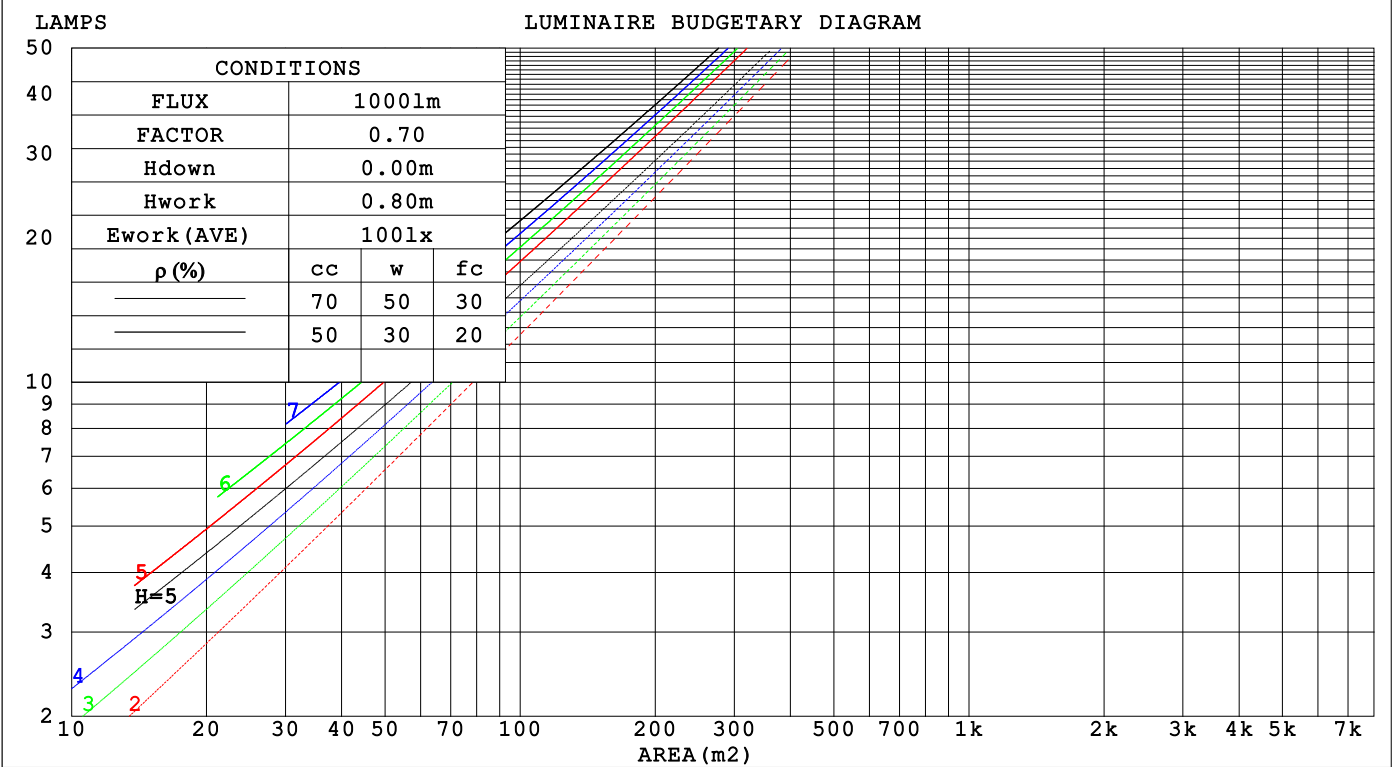
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833		
Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.46% KDisp:0.9833			Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D			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	.179	.102	.032	.172	.098	.031	.159	.092	.029	.148	.085	.027	.137	.080	.026															
2.0	.171	.094	.029	.165	.091	.028	.154	.086	.027	.145	.081	.025	.136	.077	.024															
3.0	.162	.086	.026	.157	.084	.025	.148	.080	.024	.140	.077	.024	.132	.073	.023															
4.0	.154	.080	.024	.150	.078	.023	.142	.075	.023	.135	.072	.022	.128	.070	.021															
5.0	.146	.075	.022	.143	.073	.021	.136	.071	.021	.130	.068	.020	.124	.066	.020															
6.0	.139	.070	.020	.136	.069	.020	.130	.067	.019	.125	.065	.019	.120	.063	.019															
7.0	.133	.066	.019	.130	.065	.018	.125	.063	.018	.120	.061	.018	.115	.060	.018															
8.0	.127	.062	.017	.124	.061	.017	.120	.060	.017	.115	.058	.017	.111	.057	.017															
9.0	.121	.059	.016	.119	.058	.016	.115	.057	.016	.111	.056	.016	.107	.054	.016															
10.0	.116	.056	.015	.114	.055	.015	.110	.054	.015	.107	.053	.015	.103	.052	.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	.171	.157	.145	.147	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.156	.132	.113	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.144	.114	.090	.123	.098	.078	.085	.068	.054	.049	.040	.032	.016	.013	.011	
4.0	.133	.099	.072	.114	.085	.063	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.125	.087	.060	.107	.075	.052	.074	.053	.037	.043	.031	.022	.014	.010	.007	
6.0	.117	.078	.050	.101	.067	.043	.069	.047	.031	.040	.028	.018	.013	.009	.006	
7.0	.111	.070	.042	.095	.061	.037	.066	.043	.026	.038	.025	.016	.012	.008	.005	
8.0	.105	.064	.036	.090	.056	.032	.062	.039	.022	.036	.023	.013	.012	.008	.004	
9.0	.100	.059	.031	.086	.051	.027	.059	.036	.019	.035	.021	.012	.011	.007	.004	
10.0	.095	.054	.028	.082	.047	.024	.057	.033	.017	.033	.020	.010	.011	.006	.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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz										
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833					Lamp Flux:1789.6lx1 lm					
NAME: MD18-18-XX-02 4000K RA90 25D					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	26.6	27.5	26.8	27.7	27.8	27.2	28.1	27.4	28.3	28.5
3H	26.4	27.3	26.7	27.5	27.7	27.0	27.9	27.3	28.1	28.3
4H	26.4	27.2	26.6	27.4	27.6	27.0	27.8	27.2	28.0	28.2
6H	26.3	27.1	26.6	27.3	27.6	26.9	27.7	27.2	27.9	28.2
8H	26.3	27.1	26.6	27.3	27.6	26.9	27.7	27.2	27.9	28.2
12H	26.3	27.0	26.6	27.3	27.5	26.9	27.6	27.3	27.9	28.2
4H 2H	26.3	27.1	26.6	27.4	27.6	26.9	27.8	27.2	28.0	28.2
3H	26.2	26.9	26.5	27.2	27.4	26.8	27.5	27.1	27.8	28.0
4H	26.1	26.8	26.5	27.1	27.4	26.7	27.4	27.1	27.7	28.0
6H	26.1	26.7	26.5	27.0	27.4	26.7	27.3	27.1	27.6	28.0
8H	26.2	26.7	26.5	27.0	27.4	26.8	27.3	27.2	27.6	28.0
12H	26.2	26.6	26.6	27.0	27.4	26.8	27.3	27.2	27.6	28.0
8H 4H	26.0	26.5	26.4	26.9	27.3	26.6	27.1	27.0	27.5	27.9
6H	26.1	26.5	26.5	26.9	27.3	26.7	27.1	27.1	27.5	27.9
8H	26.1	26.5	26.6	26.9	27.4	26.7	27.1	27.2	27.5	28.0
12H	26.2	26.5	26.6	26.9	27.4	26.8	27.1	27.3	27.6	28.0
12H 4H	26.0	26.5	26.4	26.8	27.2	26.6	27.1	27.0	27.4	27.8
6H	26.1	26.4	26.5	26.9	27.3	26.6	27.0	27.1	27.4	27.9
8H	26.1	26.4	26.6	26.9	27.4	26.7	27.0	27.2	27.5	28.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.4 / - 7.7					+ 2.6 / - 7.8				
1.5H	+ 4.7 / - 7.5					+ 4.7 / - 8.0				
2.0H	+ 6.0 / - 2.7					+ 7.1 / - 3.8				

CIE Pub.117, 1790 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.0$)
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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

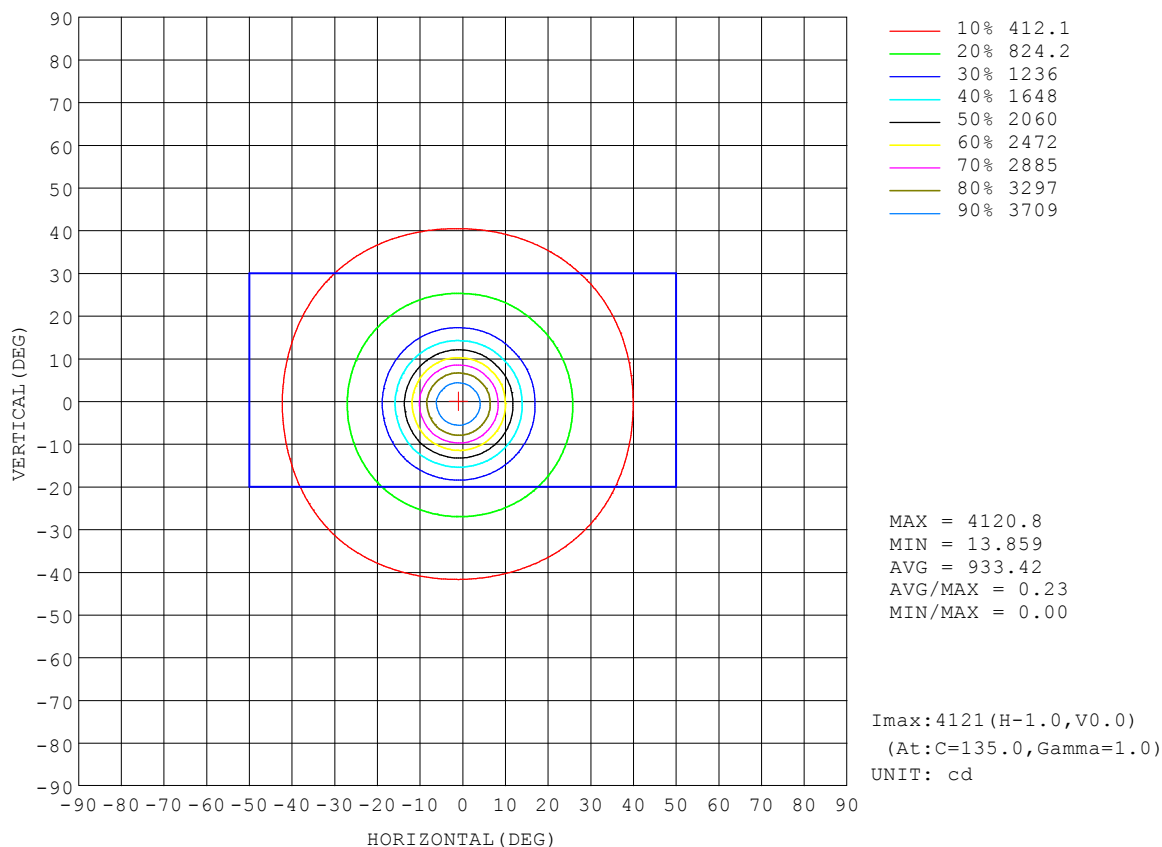
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	84	77	73	83	77	73	69
0.80	92	86	82	92	85	82	90	85	81	77
1.00	97	91	87	96	91	87	95	91	87	82
1.25	102	96	92	101	96	92	99	94	91	87
1.50	105	100	96	103	99	95	101	97	94	90
2.00	108	103	100	106	102	99	103	100	98	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	108	105	109	106	104	106	103	101	95
4.00	113	110	108	111	109	106	107	105	104	97
5.00	114	112	110	112	110	108	108	107	105	98
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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

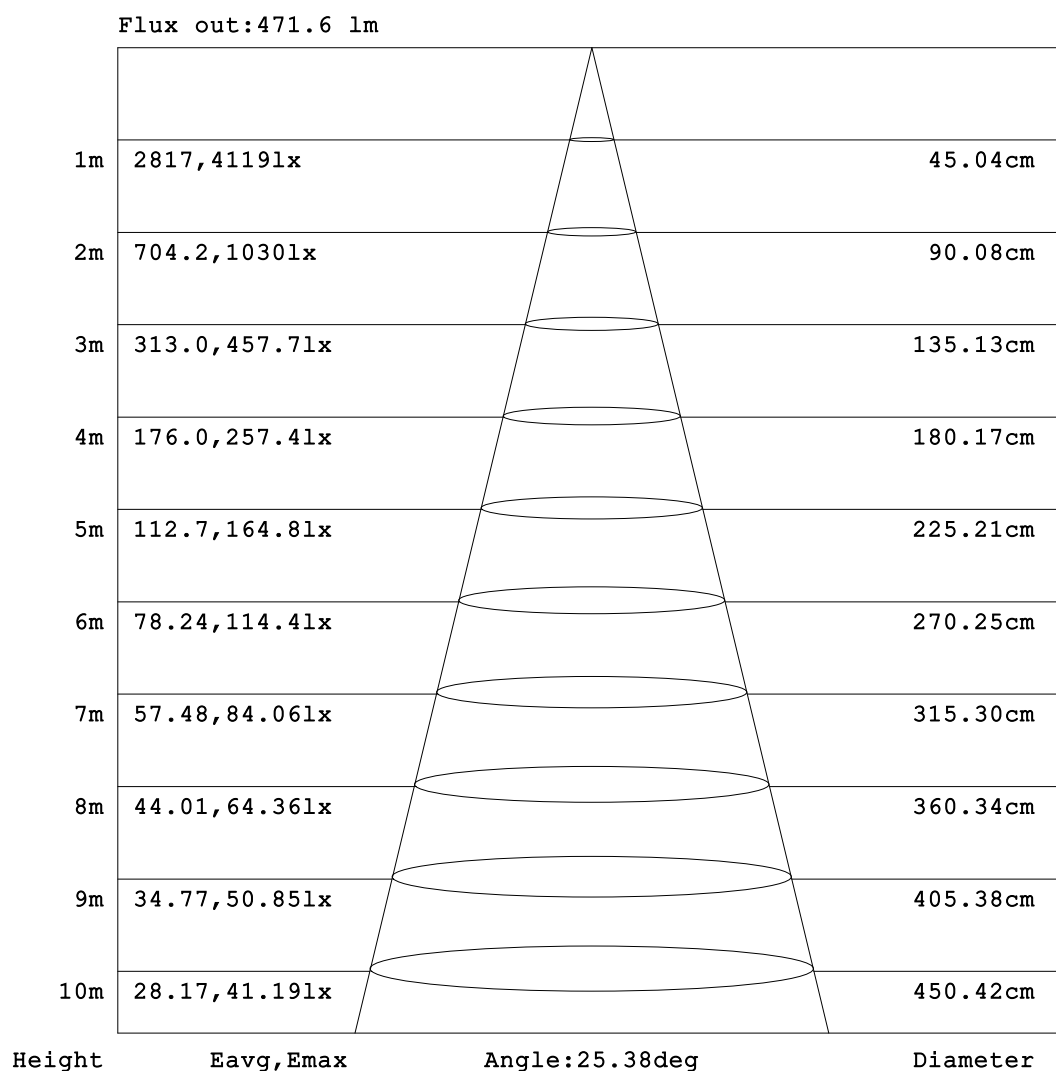


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

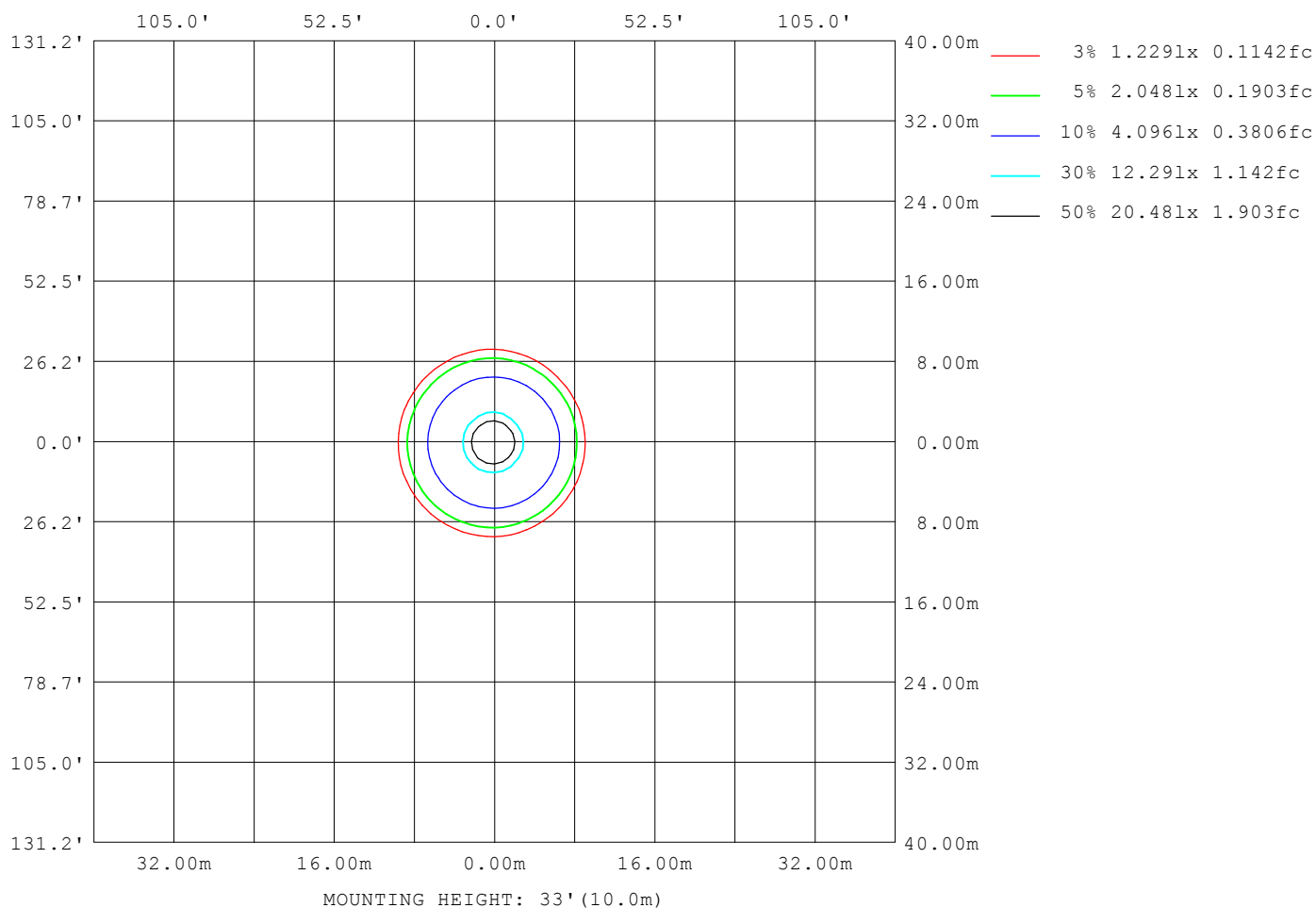


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	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:0.0725A P:16.8W PF:0.9668 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.46% KDisp:0.9833 Lamp Flux:1789.6lx1 lm		
NAME: MD18-18-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

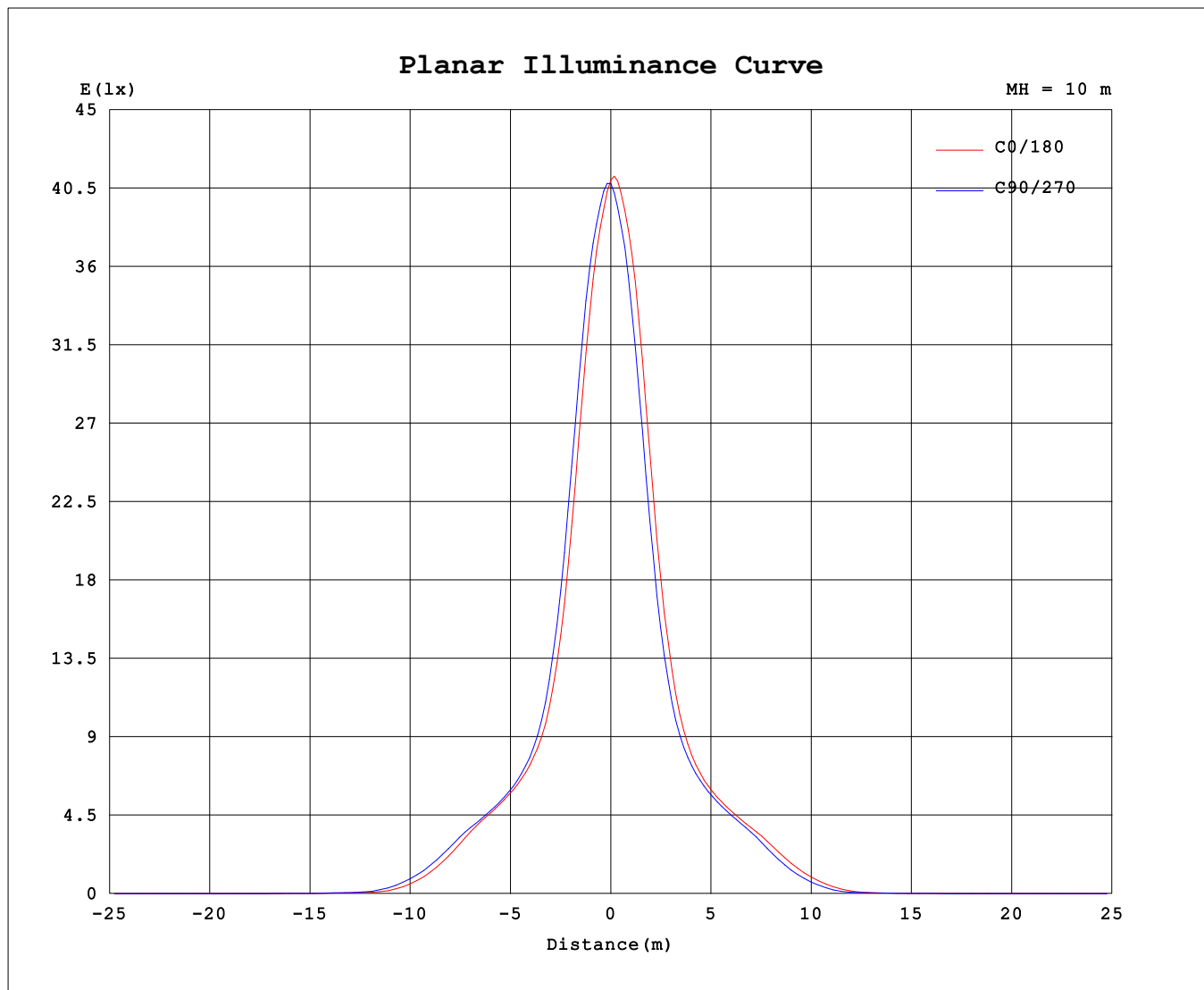
AvgL	cd/m2
L_0~180 (65) av	13792
L_0~180 (75) av	17565
L_0~180 (85) av	29707
L_90~270 (65) av	13845
L_90~270 (75) av	18064
L_90~270 (85) av	30991
L_45 (65) av	14068
L_45 (75) av	17542
L_45 (85) av	29485

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	4084	4084	4084	4084	4084	4084	4084	4084
3.0	3827	3891	3972	4038	4025	3945	3856	3806
6.0	3371	3493	3657	3747	3732	3579	3413	3338
9.0	2704	2861	3067	3199	3164	2952	2757	2659
12.0	1993	2151	2353	2474	2430	2232	2066	1947
15.0	1468	1582	1721	1828	1783	1648	1519	1434
18.0	1132	1199	1283	1357	1329	1243	1160	1111
21.0	962.3	994.1	1035	1071	1054	1006	965.4	946.3
24.0	861.3	882.6	905.2	919.2	908.5	879.0	856.5	845.2
27.0	798.3	811.5	825.9	832.7	823.1	803.4	787.8	782.6
30.0	747.6	758.2	771.4	774.8	768.3	750.0	734.7	732.1
33.0	696.9	706.8	723.3	727.0	720.1	700.8	684.7	684.2
36.0	603.5	629.5	669.3	678.7	670.0	643.9	615.7	596.5
39.0	459.1	495.9	551.0	581.5	574.0	527.6	484.2	453.5
42.0	300.5	341.2	397.4	431.7	426.3	376.2	331.7	292.8
45.0	159.4	199.5	243.7	270.0	270.4	225.5	190.4	153.7
48.0	59.62	83.65	113.1	130.9	133.5	101.4	76.39	58.87
51.0	30.73	35.52	40.36	43.30	42.90	32.69	28.20	29.00
54.0	19.25	22.47	24.98	24.08	23.91	21.25	18.61	18.51
57.0	12.61	14.32	16.29	16.29	16.06	13.97	12.28	12.24
60.0	9.381	10.47	11.27	11.65	11.03	10.15	9.236	9.142
63.0	7.836	8.393	8.813	9.250	8.625	8.057	7.643	7.668
66.0	7.148	7.606	7.834	8.124	7.534	7.201	6.901	6.986
69.0	6.664	7.056	7.214	7.285	6.829	6.482	6.285	6.482
72.0	6.235	6.561	6.709	6.741	6.223	5.877	5.769	6.024
75.0	6.125	6.116	6.390	6.285	5.695	5.392	5.766	5.816
78.0	6.793	6.552	6.815	6.635	6.271	5.982	6.690	6.618
81.0	5.901	6.289	6.923	7.264	6.737	6.078	5.666	5.682
84.0	3.610	4.275	5.459	5.711	4.832	3.883	3.295	3.246
87.0	0.5300	1.123	2.161	2.792	2.062	1.034	0.6957	0.2373
90.0	0.0673	0.0453	0.0621	0.0480	0.0532	0.0524	0.0682	0.0557

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: