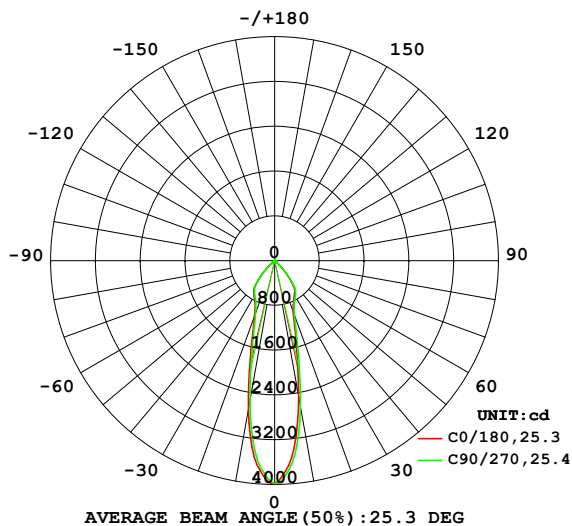


LUMINAIRE PHOTOMETRIC TEST REPORT

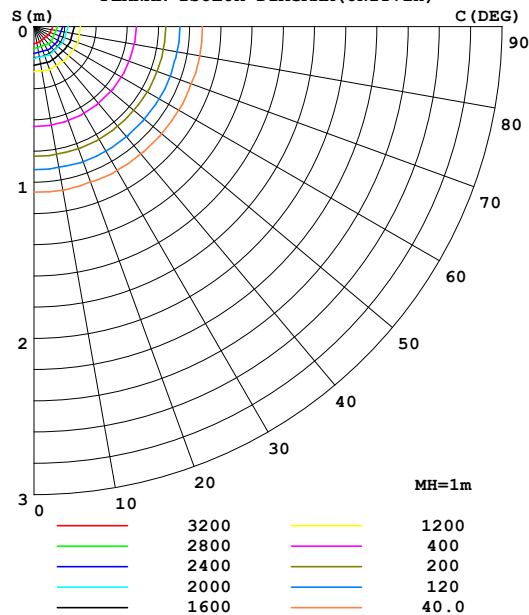
Test:U:240.4V I:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.41 lm/W			
MODEL		I _{max} (cd)	3983	S/MH(C0/180)	0.44
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.42
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1724.3	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	1724.35	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	240.39	η down(%)	100.0	CIBSE SHR MAX	0.50

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	2474	2557	2660	2728	2713	2638	2543	2465	0- 10	310.7	310.7	18,18
20	984.4	1015	1040	1058	1053	1033	1004	970.3	10- 20	443.1	753.8	43.7,43.7
30	713.1	723.0	738.7	744.8	737.5	726.0	715.7	707.8	20- 30	383.9	1138	66,66
40	421.9	437.4	455.0	478.5	476.1	465.0	446.3	430.5	30- 40	387.1	1525	88.4,88.4
50	33.84	39.48	44.59	47.86	47.94	43.54	38.42	36.29	40- 50	164.6	1689	98,98
60	9.076	9.465	10.06	10.29	10.71	10.21	9.581	9.352	50- 60	17.70	1707	99,99
70	5.869	5.986	6.350	6.545	6.828	6.742	6.423	5.960	60- 70	7.451	1714	99.4,99.4
80	6.007	6.257	6.577	6.429	6.714	6.993	6.954	6.248	70- 80	6.462	1721	99.8,99.8
90	0.0673	0.0530	0.0689	0.0467	0.0494	0.0504	0.0637	0.0557	80- 90	3.413	1724	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): 1644.7 lm

%lum = 95.4%

%lamp = 95.4%

Conical surface Flux(120deg): 1707 lm

%lum = 99.0%

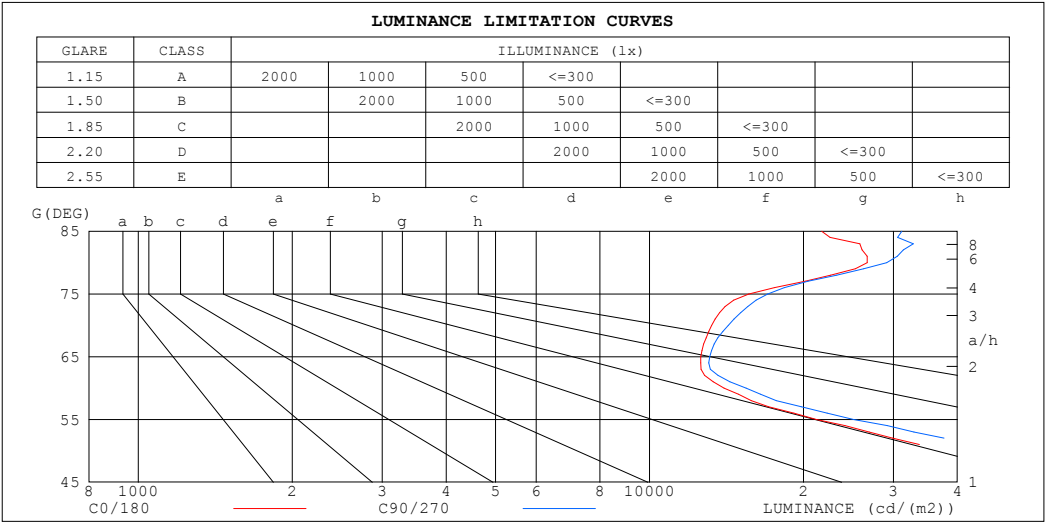
%lamp = 99.0%

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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K 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	21710	31157
80	26672	29095
75	15640	17020
70	13231	14261
65	12595	13111
60	13995	15455
55	21209	25072
50	40592	53291
45	197377	228946

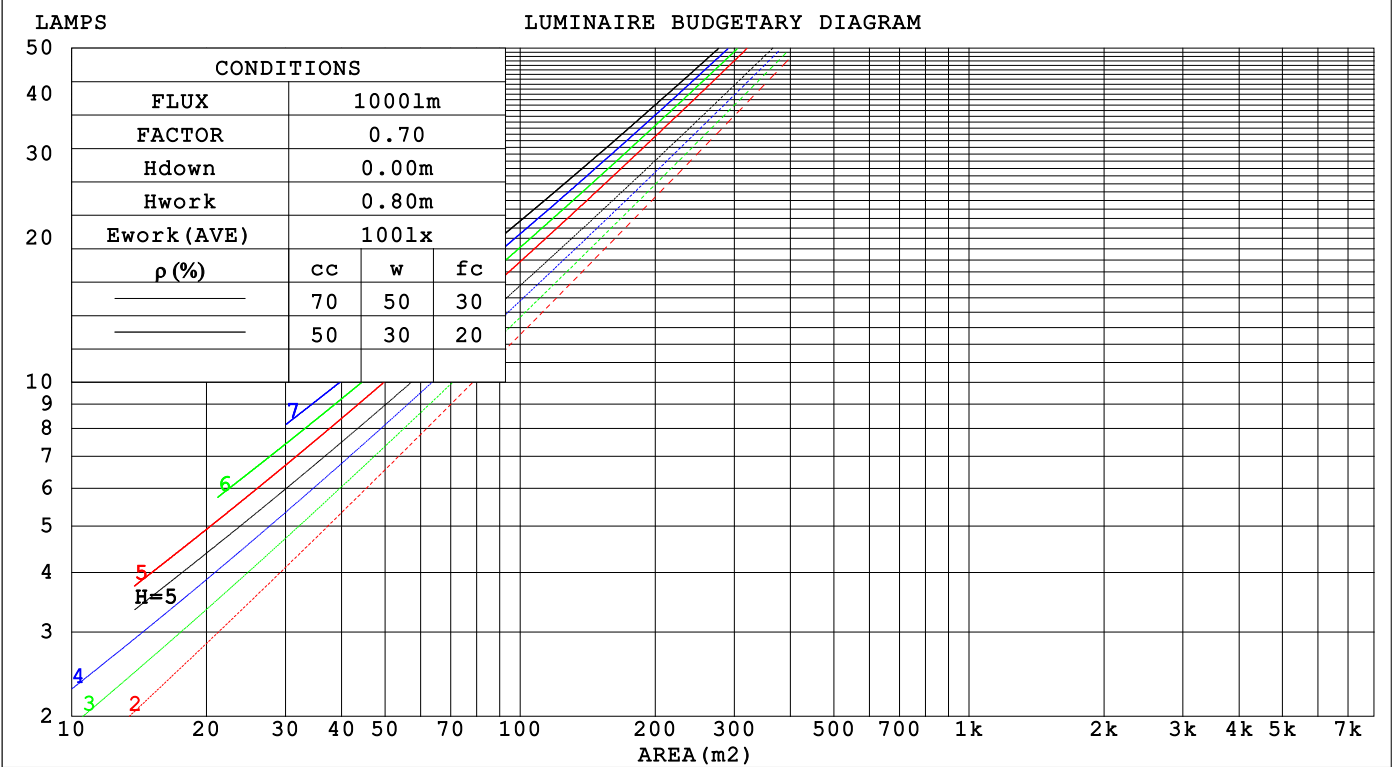
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833		
Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K 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															



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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz			UTHDi:0.16% ITHDi:18.52% KDisp:0.9833			Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K 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	.091	.029	.148	.085	.027	.137	.079	.026															
2.0	.170	.093	.029	.165	.091	.028	.154	.086	.027	.144	.081	.025	.135	.077	.024															
3.0	.162	.086	.026	.157	.084	.025	.148	.080	.024	.140	.077	.023	.132	.073	.023															
4.0	.154	.080	.024	.150	.078	.023	.142	.075	.022	.135	.072	.022	.128	.069	.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	.119	.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	.073	.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	.110	.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	.099	.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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz										
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833					Lamp Flux:1724.35x1 lm					
NAME: MD18-18-XX-02 3500K 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	27.6	26.8	27.7	27.9	26.9	27.8	27.1	28.0	28.2
3H	26.5	27.3	26.7	27.5	27.7	26.7	27.6	27.0	27.8	28.0
4H	26.4	27.2	26.7	27.4	27.7	26.7	27.5	26.9	27.7	27.9
6H	26.4	27.1	26.7	27.4	27.6	26.6	27.4	26.9	27.6	27.9
8H	26.3	27.1	26.7	27.3	27.6	26.6	27.4	26.9	27.6	27.9
12H	26.3	27.0	26.6	27.3	27.6	26.6	27.3	26.9	27.6	27.9
4H 2H	26.4	27.2	26.6	27.4	27.6	26.6	27.5	26.9	27.7	27.9
3H	26.2	26.9	26.5	27.2	27.5	26.5	27.2	26.8	27.5	27.7
4H	26.2	26.8	26.5	27.1	27.4	26.4	27.1	26.8	27.4	27.7
6H	26.2	26.7	26.5	27.1	27.4	26.4	27.0	26.8	27.3	27.7
8H	26.2	26.7	26.6	27.0	27.4	26.4	27.0	26.8	27.3	27.7
12H	26.2	26.6	26.6	27.0	27.4	26.5	26.9	26.9	27.3	27.7
8H 4H	26.0	26.6	26.4	26.9	27.3	26.3	26.8	26.7	27.2	27.6
6H	26.1	26.5	26.5	26.9	27.3	26.4	26.8	26.8	27.2	27.6
8H	26.1	26.5	26.6	26.9	27.4	26.4	26.8	26.9	27.2	27.6
12H	26.1	26.5	26.6	26.9	27.4	26.4	26.8	26.9	27.2	27.7
12H 4H	26.0	26.5	26.4	26.9	27.2	26.3	26.7	26.7	27.1	27.5
6H	26.1	26.4	26.5	26.9	27.3	26.3	26.7	26.8	27.1	27.6
8H	26.1	26.4	26.6	26.9	27.3	26.4	26.7	26.9	27.2	27.6
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 8.2					+ 2.5 / - 8.0				
1.5H	+ 4.7 / - 8.1					+ 4.6 / - 8.1				
2.0H	+ 6.6 / - 3.4					+ 6.9 / - 3.6				

CIE Pub.117, 1724 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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

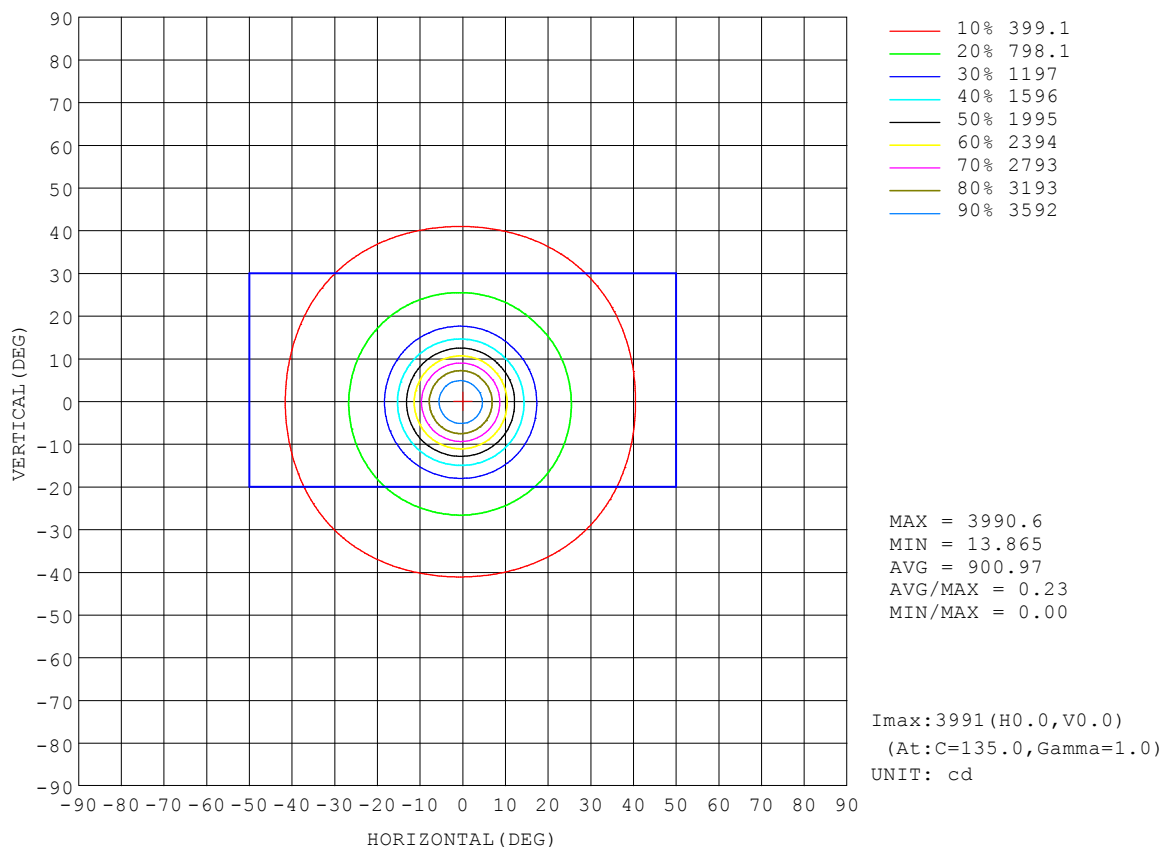
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	84	77	73	83	77	73	69
0.80	92	86	82	92	86	82	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	96	101	97	94	90
2.00	108	103	100	106	102	99	104	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	108	105	104	97
5.00	115	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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

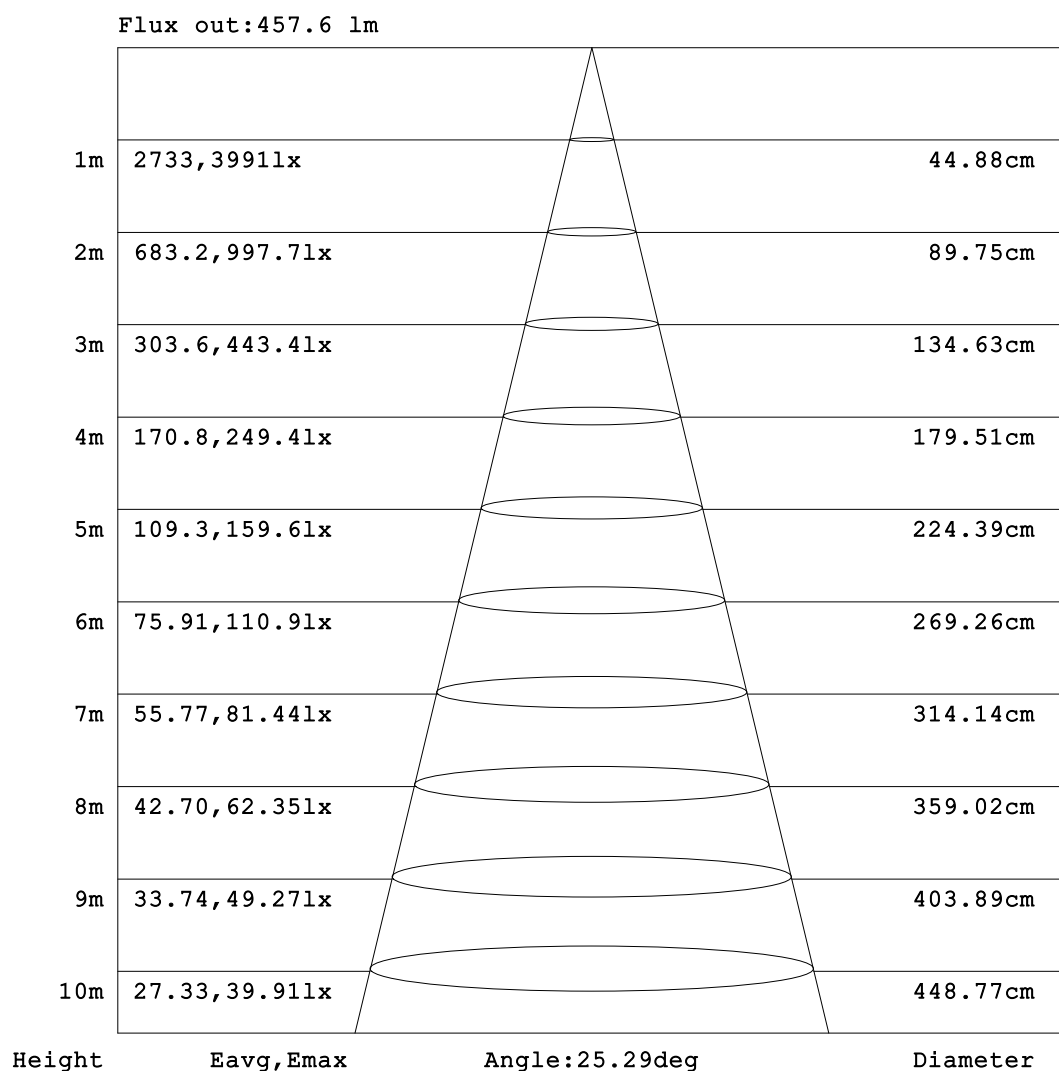


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



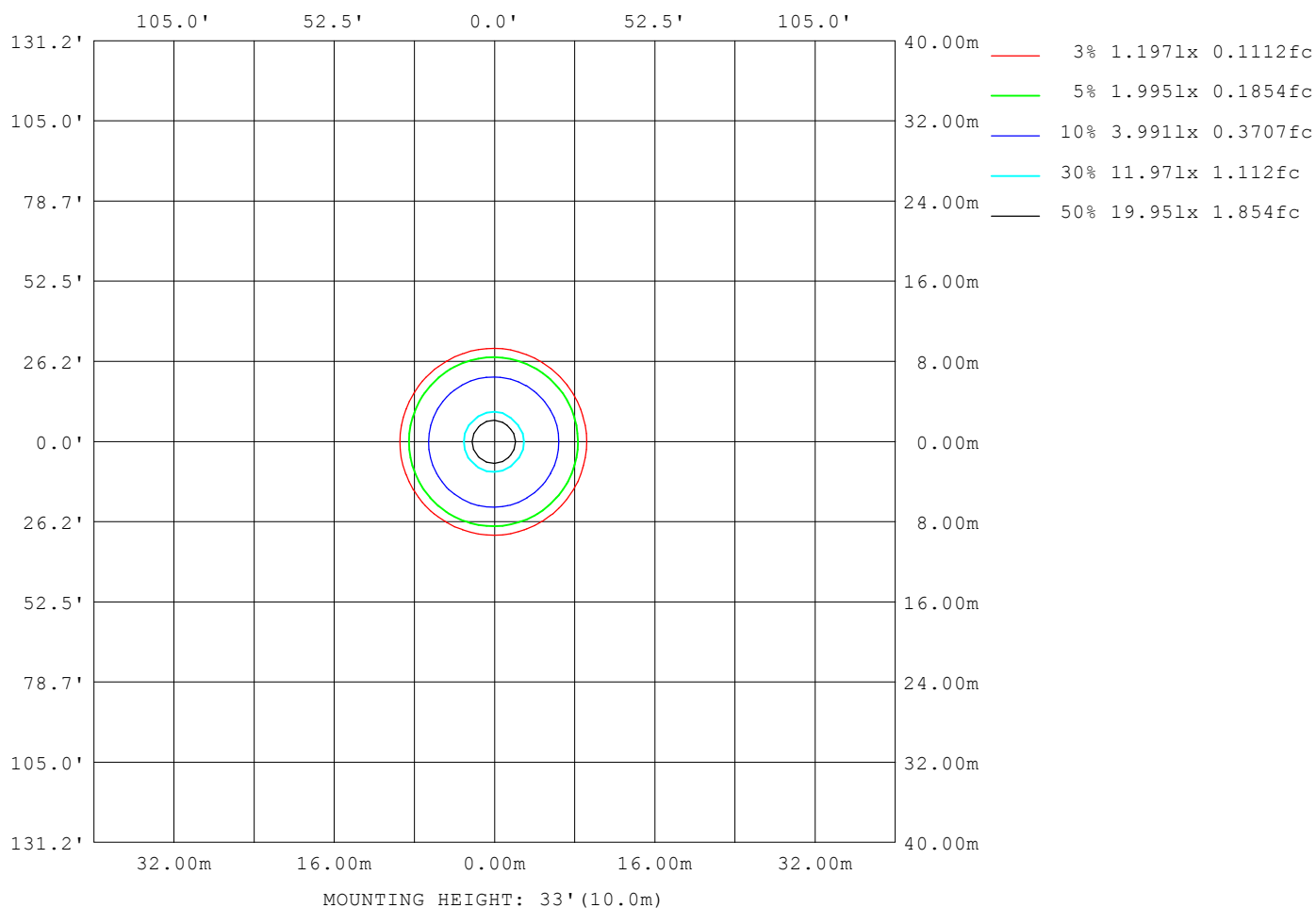
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K 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:0.0724A P:16.8W PF:0.9667 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.52% KDisp:0.9833 Lamp Flux:1724.35x1 lm		
NAME: MD18-18-XX-02 3500K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

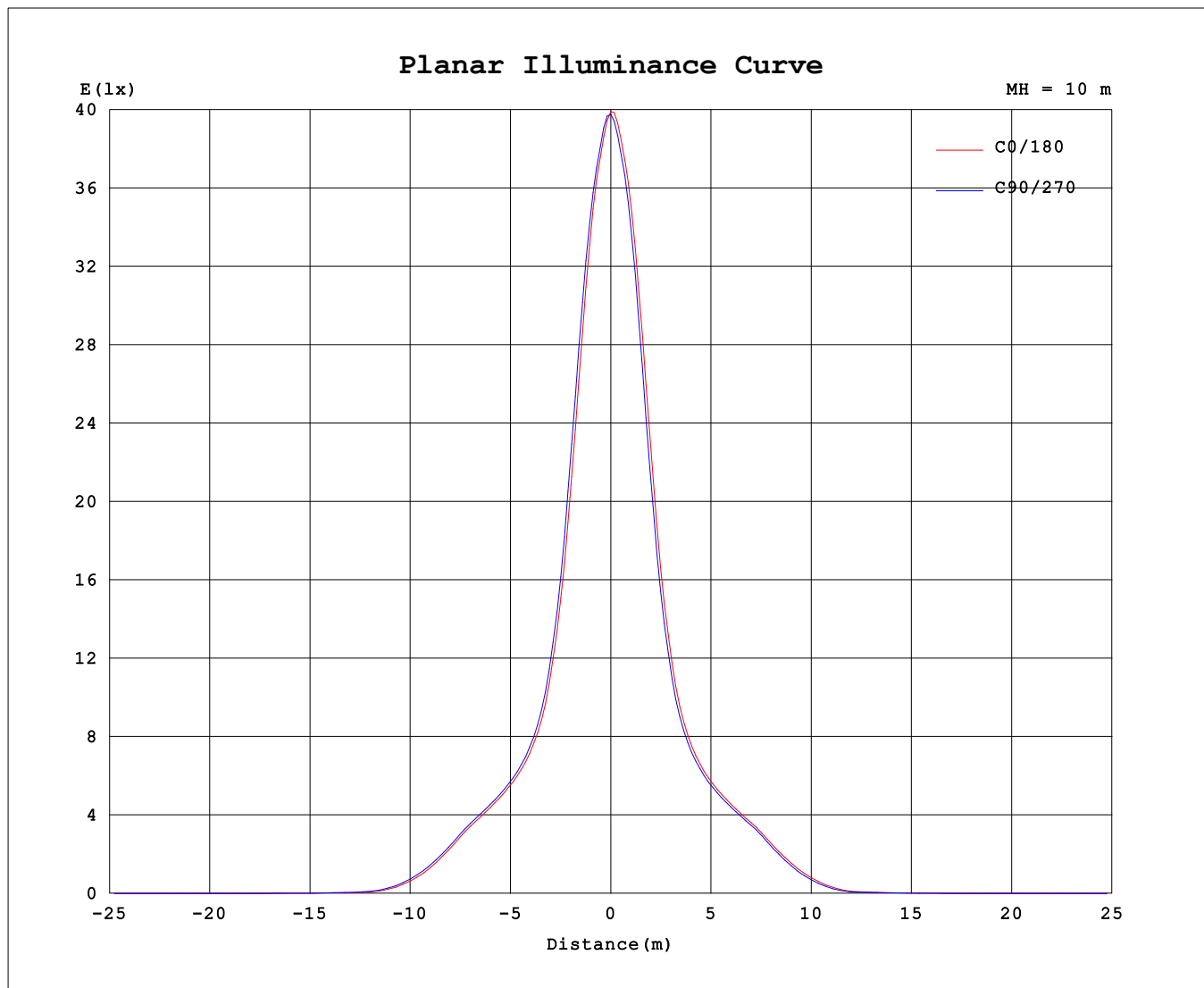
AvgL	cd/m2
L_0~180 (65) av	13370
L_0~180 (75) av	16883
L_0~180 (85) av	28803
L_90~270 (65) av	13276
L_90~270 (75) av	17359
L_90~270 (85) av	30036
L_45 (65) av	13266
L_45 (75) av	17002
L_45 (85) av	29274

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	3981	3981	3981	3981	3981	3981	3981	3981
3.0	3762	3791	3829	3860	3852	3827	3792	3755
6.0	3358	3405	3483	3526	3527	3487	3415	3354
9.0	2709	2788	2892	2954	2942	2872	2781	2704
12.0	2017	2098	2194	2256	2239	2166	2092	2000
15.0	1486	1544	1599	1651	1637	1590	1529	1460
18.0	1128	1167	1203	1231	1226	1198	1155	1109
21.0	939.0	959.7	982.0	996.2	993.0	972.6	948.8	925.7
24.0	830.0	845.9	864.7	870.0	866.2	849.3	836.5	818.8
27.0	764.7	775.5	792.3	795.9	789.9	776.5	765.4	755.6
30.0	713.1	723.0	738.7	744.8	737.5	726.0	715.7	707.8
33.0	661.2	670.1	689.3	697.8	689.2	680.2	669.2	660.4
36.0	595.9	603.3	624.8	638.6	635.2	625.8	612.8	598.3
39.0	470.8	483.4	502.0	526.7	523.3	511.5	495.0	479.4
42.0	321.7	337.2	355.8	374.7	377.2	362.9	346.0	326.4
45.0	181.0	196.3	210.7	223.4	230.4	215.0	201.9	181.3
48.0	75.23	86.57	95.30	98.58	103.6	95.17	82.53	77.46
51.0	27.53	30.23	35.24	36.38	36.99	33.65	29.72	28.68
54.0	18.39	19.60	22.35	23.43	23.98	20.96	19.04	19.08
57.0	12.07	12.99	14.04	14.56	15.12	13.85	12.72	12.53
60.0	9.076	9.465	10.06	10.29	10.71	10.21	9.581	9.352
63.0	7.427	7.533	7.777	8.074	8.389	8.184	7.868	7.575
66.0	6.684	6.761	6.999	7.246	7.545	7.464	7.163	6.768
69.0	6.070	6.158	6.489	6.699	6.982	6.907	6.583	6.155
72.0	5.498	5.674	6.062	6.259	6.536	6.438	6.104	5.591
75.0	5.250	5.538	5.734	5.867	6.111	6.136	5.947	5.341
78.0	6.099	6.506	6.292	6.164	6.295	6.814	7.067	6.290
81.0	5.410	5.920	6.218	6.123	6.338	6.656	6.710	5.804
84.0	3.057	3.724	4.157	4.699	4.941	4.621	4.340	3.311
87.0	0.6541	0.8422	1.324	1.698	1.813	1.574	0.9849	0.6093
90.0	0.0673	0.0530	0.0689	0.0467	0.0494	0.0504	0.0637	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: