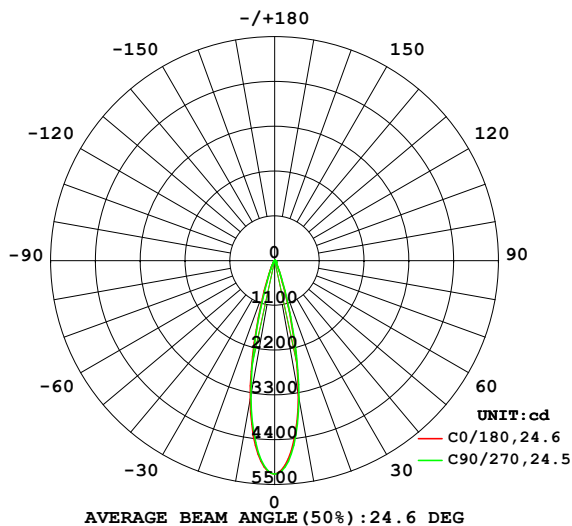


LUMINAIRE PHOTOMETRIC TEST REPORT

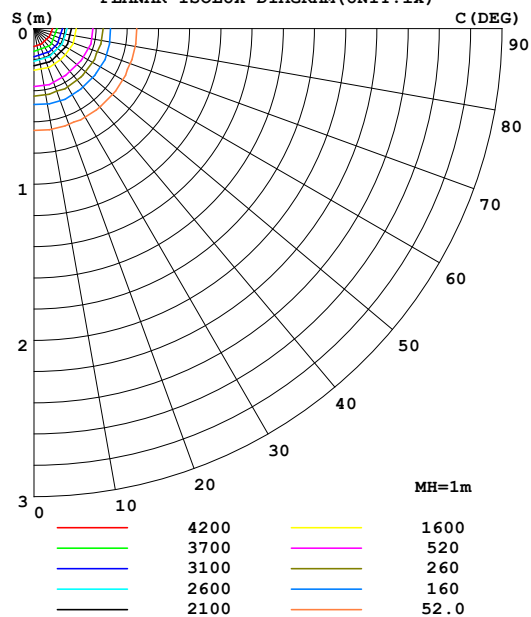
Test:U:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.1lx1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 84.08 lm/W
MODEL		I _{max} (cd)	5242	S/MH(C0/180)	0.41	
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	0.39	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1093.1	η UP,DN(C0-180)	0.0,50.2	
NOMINAL FLUX(lm)	1093.11	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.8	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	240.1	η down(%)	100.0	CIBSE SHR MAX	0.30	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-12-26

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	3374	3400	3440	3457	3462	3447	3377	3357	0- 10	409.2	409.2	37.4,37.4
20	572.1	620.6	634.7	669.6	648.8	637.8	572.5	546.3	10- 20	470.8	880.0	80.5,80.5
30	121.1	130.7	123.9	126.9	131.1	130.6	118.8	113.0	20- 30	126.6	1007	92.1,92.1
40	42.83	45.77	47.56	49.42	48.47	46.74	43.57	42.49	30- 40	46.80	1053	96.4,96.4
50	17.51	18.85	19.85	20.94	20.74	19.86	18.77	17.41	40- 50	23.75	1077	98.5,98.5
60	5.164	5.457	5.821	6.159	5.980	5.900	5.653	5.196	50- 60	10.19	1087	99.5,99.5
70	2.333	2.482	2.593	2.605	2.616	2.559	2.449	2.279	60- 70	3.746	1091	99.8,99.8
80	0.9808	0.9545	0.8871	0.9593	1.110	0.9731	0.7722	0.7877	70- 80	1.740	1093	100,100
90	0.0509	0.0360	0.0576	0.0361	0.0368	0.0395	0.0418	0.0342	80- 90	0.3143	1093	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): 1067.2 lm

%lum = 97.6%

%lamp = 97.6%

Conical surface Flux(120deg): 1087.3 lm

%lum = 99.5%

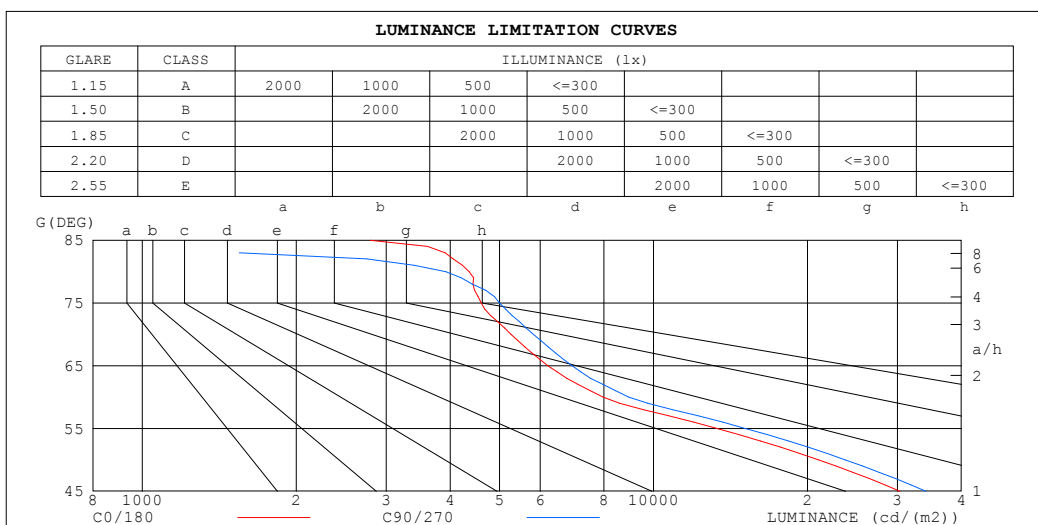
%lamp = 99.5%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: MEDIUM
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:



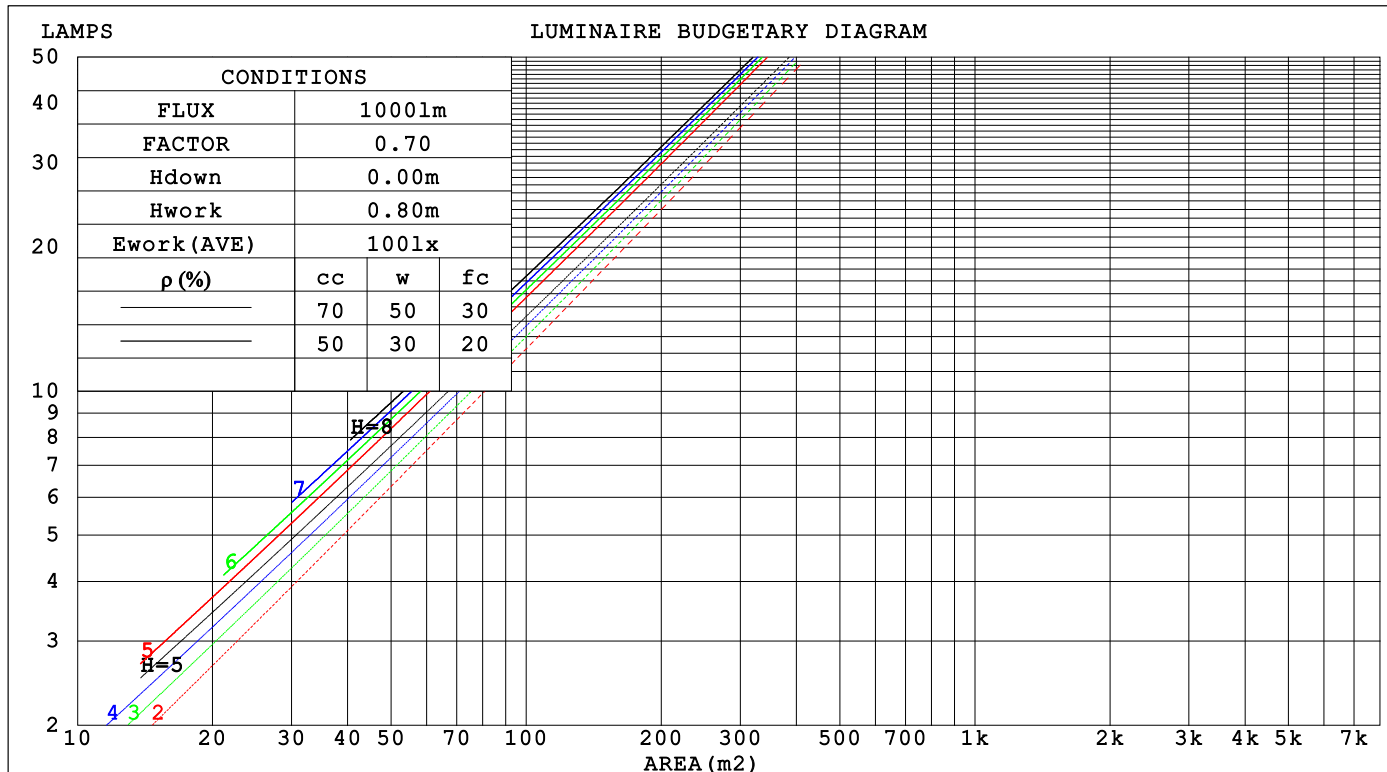
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691		Lamp Flux:1093.11x1 lm
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.91% KDisp:0.9691			Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D			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	.139	.079	.025	.132	.075	.024	.120	.069	.022	.109	.063	.020	.098	.057	.018		
2.0	.129	.071	.022	.124	.068	.021	.113	.063	.020	.104	.058	.018	.095	.054	.017		
3.0	.120	.064	.019	.116	.062	.019	.107	.058	.018	.099	.054	.017	.092	.051	.016		
4.0	.112	.058	.017	.109	.057	.017	.101	.054	.016	.095	.051	.015	.089	.048	.015		
5.0	.106	.054	.016	.103	.053	.015	.096	.050	.015	.091	.048	.014	.085	.046	.014		
6.0	.100	.050	.014	.097	.049	.014	.092	.047	.014	.087	.045	.013	.082	.043	.013		
7.0	.095	.047	.013	.092	.046	.013	.088	.044	.013	.083	.043	.012	.079	.041	.012		
8.0	.090	.044	.012	.088	.043	.012	.084	.042	.012	.080	.041	.012	.077	.039	.011		
9.0	.086	.042	.012	.084	.041	.011	.080	.040	.011	.077	.039	.011	.074	.038	.011		
10.0	.082	.039	.011	.081	.039	.011	.077	.038	.011	.074	.037	.010	.072	.036	.010		

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	.168	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017		
2.0	.151	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014		
3.0	.136	.113	.095	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011		
4.0	.123	.098	.079	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009		
5.0	.113	.086	.066	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008		
6.0	.104	.076	.056	.089	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007		
7.0	.096	.067	.047	.083	.058	.041	.057	.041	.029	.033	.024	.017	.011	.008	.006		
8.0	.090	.061	.041	.077	.053	.036	.053	.037	.025	.031	.022	.015	.010	.007	.005		
9.0	.084	.055	.036	.072	.048	.031	.050	.034	.022	.029	.020	.013	.009	.007	.004		
10.0	.079	.050	.031	.068	.044	.027	.047	.031	.019	.027	.018	.012	.009	.006	.004		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm										
NAME: MD10-13-XX-04 2700K RA90 24D					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	14.9	15.6	15.1	15.7	15.9	15.2	15.9	15.4	16.0	16.2
3H	14.9	15.6	15.2	15.7	15.9	15.3	15.9	15.5	16.1	16.3
4H	15.0	15.5	15.2	15.7	16.0	15.3	15.9	15.6	16.1	16.3
6H	14.9	15.5	15.2	15.7	16.0	15.3	15.8	15.6	16.1	16.3
8H	14.9	15.5	15.2	15.7	16.0	15.3	15.8	15.6	16.0	16.3
12H	14.9	15.4	15.2	15.7	15.9	15.2	15.7	15.5	16.0	16.3
4H 2H	14.8	15.4	15.1	15.6	15.8	15.2	15.7	15.4	16.0	16.2
3H	14.9	15.4	15.2	15.7	16.0	15.3	15.8	15.6	16.0	16.3
4H	15.0	15.4	15.3	15.7	16.0	15.3	15.8	15.6	16.1	16.4
6H	15.0	15.4	15.4	15.7	16.1	15.3	15.7	15.7	16.1	16.4
8H	15.0	15.4	15.4	15.7	16.1	15.3	15.7	15.7	16.0	16.4
12H	15.0	15.3	15.4	15.7	16.1	15.2	15.6	15.6	16.0	16.3
8H 4H	14.9	15.3	15.3	15.6	16.0	15.2	15.6	15.6	16.0	16.3
6H	15.0	15.3	15.4	15.7	16.1	15.3	15.6	15.7	16.0	16.4
8H	15.0	15.3	15.4	15.7	16.1	15.2	15.5	15.7	15.9	16.4
12H	14.9	15.2	15.4	15.6	16.1	15.2	15.4	15.6	15.9	16.3
12H 4H	14.8	15.2	15.3	15.6	16.0	15.2	15.5	15.6	15.9	16.3
6H	14.9	15.2	15.4	15.6	16.1	15.2	15.5	15.7	15.9	16.3
8H	14.9	15.2	15.4	15.6	16.1	15.2	15.4	15.7	15.9	16.3
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.7 / - 3.0					+ 1.7 / - 3.0				
1.5H	+ 2.2 / - 2.3					+ 2.4 / - 2.5				
2.0H	+ 3.4 / - 3.0					+ 3.6 / - 3.3				

CIE Pub.117, 1093 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 0.3)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:

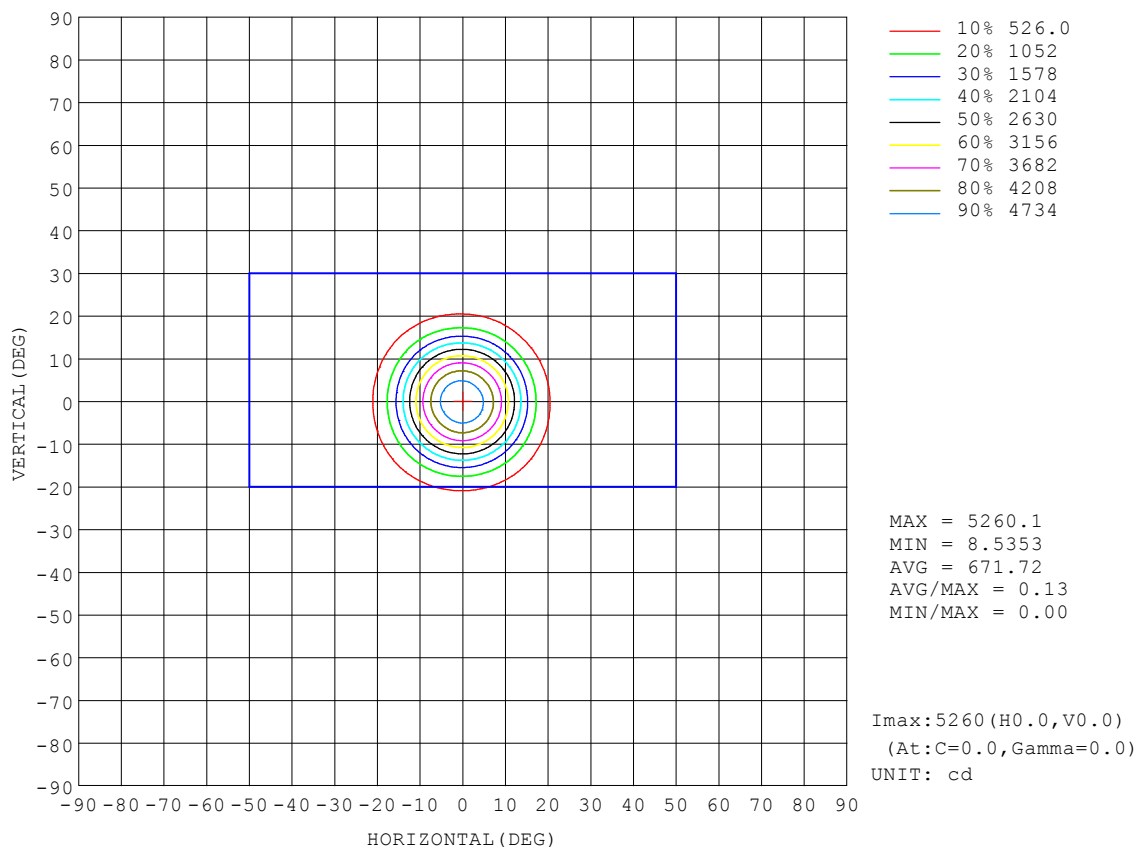
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	89	83	80	88	83	79	76
0.80	96	91	87	96	91	87	95	90	87	83
1.00	101	95	92	100	95	92	98	95	91	87
1.25	104	99	96	103	99	96	101	98	95	91
1.50	107	102	99	106	102	99	103	100	98	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	104	102	96
3.00	112	109	106	110	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	105	98
5.00	115	113	112	113	111	110	109	108	107	99
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: MEDIUM
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:

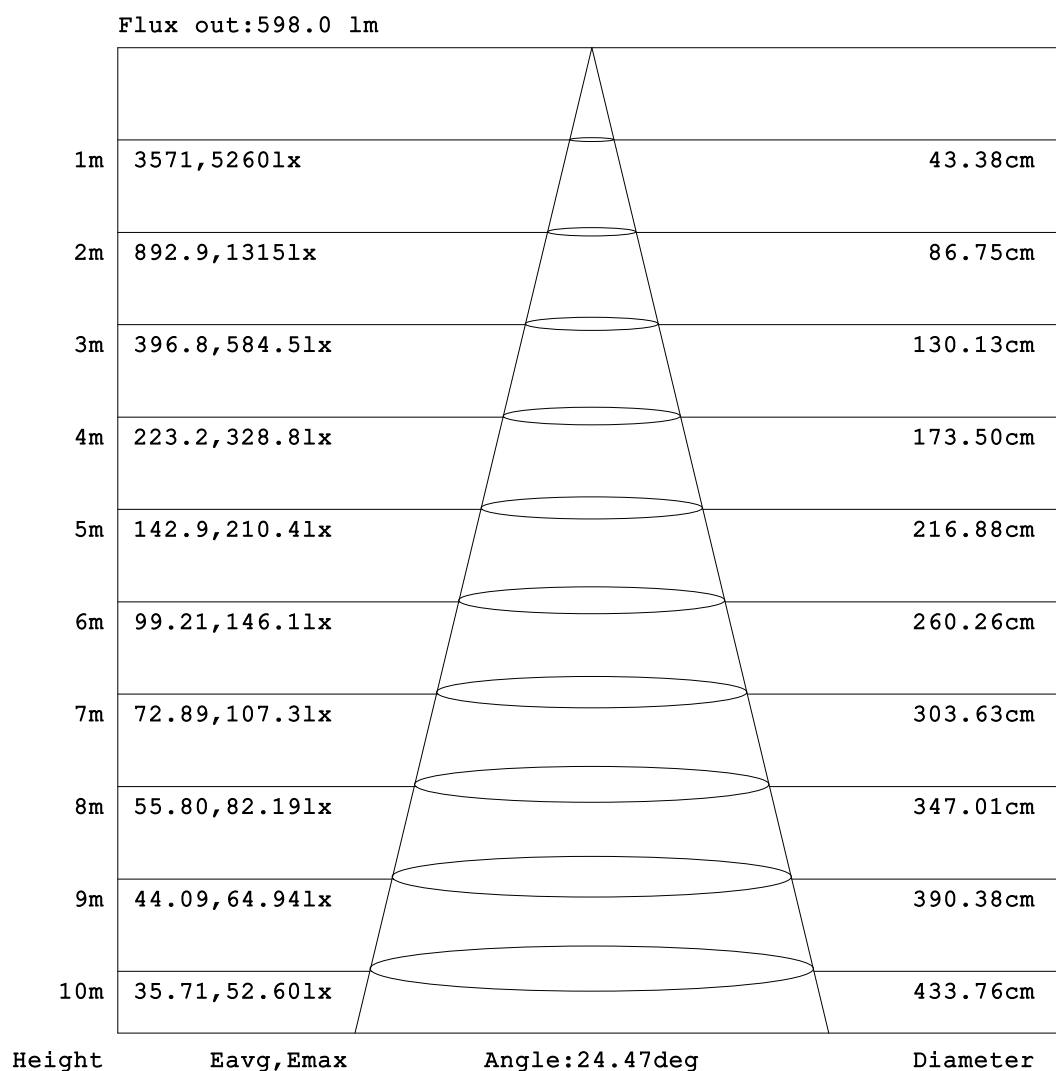


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:



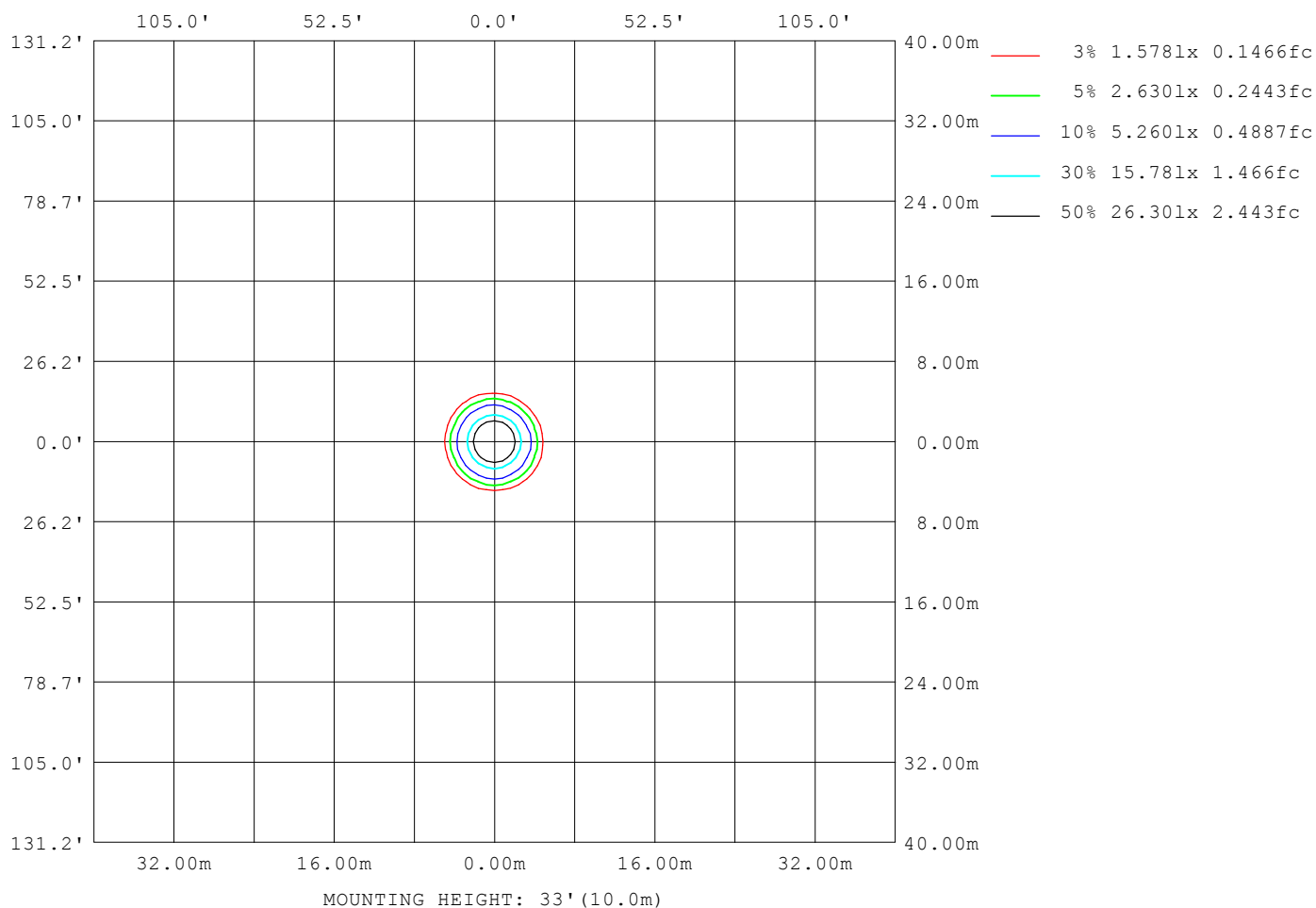
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691		Lamp Flux:1093.11x1 lm
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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:240.2V I:0.0569A P:13.0W PF:0.9520 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.91% KDisp:0.9691 Lamp Flux:1093.11x1 lm		
NAME: MD10-13-XX-04 2700K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.: 41mm	Shielding Angle:

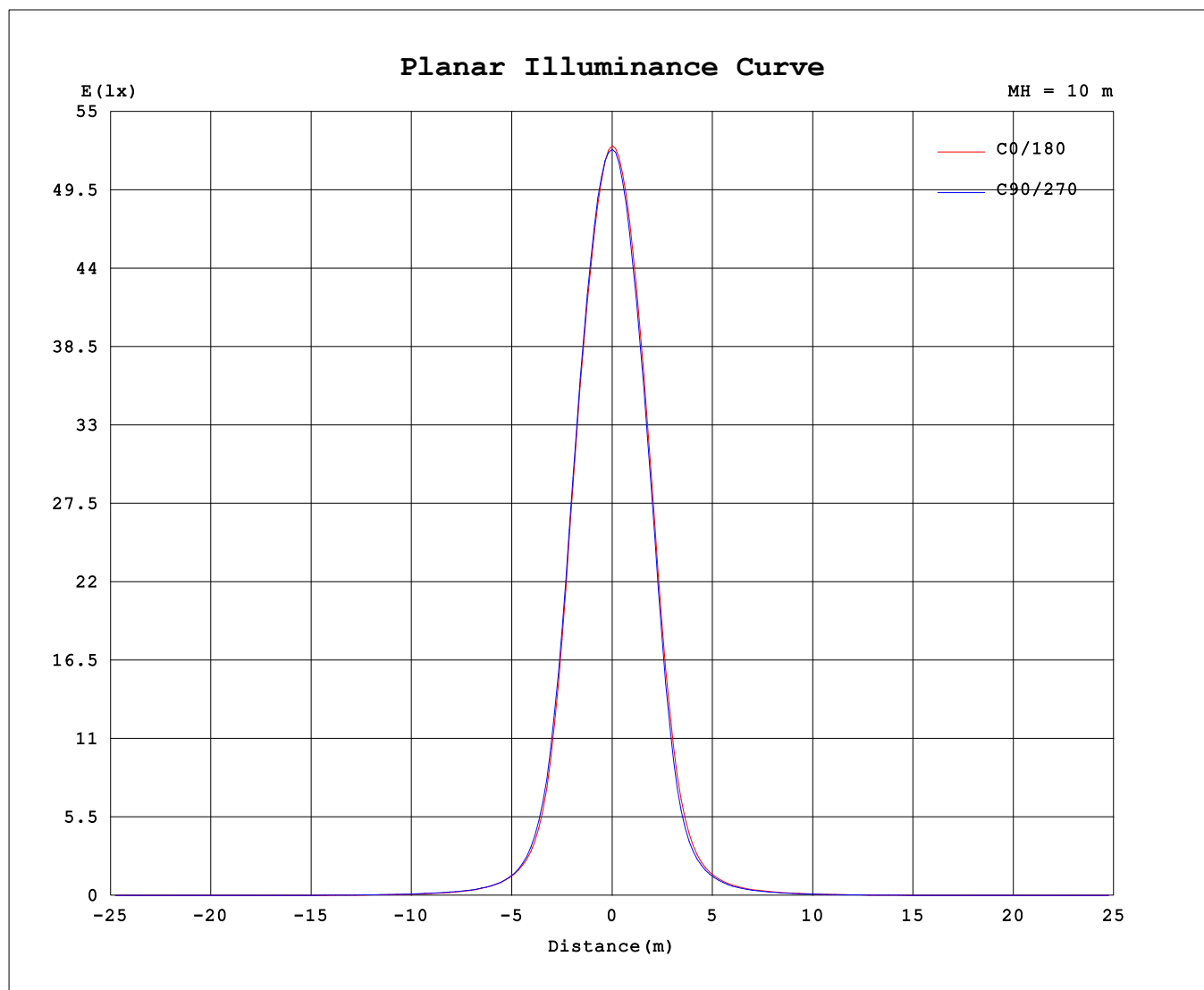
AvgL	cd/m2
L_0~180 (65) av	6568
L_0~180 (75) av	4856
L_0~180 (85) av	3397
L_90~270 (65) av	6759
L_90~270 (75) av	4857
L_90~270 (85) av	550
L_45 (65) av	6654
L_45 (75) av	4756
L_45 (85) av	349

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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: MEDIUM
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-12-26

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	5242	5242	5242	5242	5242	5242	5242	5242
3.0	5023	5055	5072	5073	5071	5060	5043	5005
6.0	4477	4525	4554	4553	4564	4537	4487	4458
9.0	3695	3719	3760	3771	3777	3761	3694	3673
12.0	2674	2703	2748	2773	2780	2768	2694	2670
15.0	1634	1694	1728	1773	1756	1754	1651	1634
18.0	877.4	940.6	955.4	1010	980.0	973.2	881.3	854.7
21.0	468.2	508.7	518.8	546.8	530.9	520.5	468.4	444.5
24.0	278.9	299.0	296.9	308.6	306.2	303.4	278.4	263.2
27.0	180.1	193.1	185.3	190.4	194.3	193.9	178.4	168.2
30.0	121.1	130.7	123.9	126.9	131.1	130.6	118.8	113.0
33.0	84.82	91.35	88.57	90.06	93.04	91.91	82.92	80.47
36.0	61.64	66.34	66.51	68.11	68.78	67.26	61.32	60.02
39.0	46.69	49.98	51.62	53.47	52.76	50.93	47.32	46.25
42.0	36.03	38.50	40.33	42.23	41.18	39.49	37.13	35.86
45.0	27.82	29.91	31.41	33.12	32.35	30.86	29.11	27.86
48.0	21.29	22.92	24.06	25.38	25.00	23.88	22.56	21.22
51.0	15.75	17.02	17.92	18.93	18.79	18.02	17.02	15.72
54.0	11.20	12.08	12.78	13.64	13.51	13.12	12.33	11.25
57.0	7.548	8.044	8.666	9.303	9.108	8.974	8.442	7.652
60.0	5.164	5.457	5.821	6.159	5.980	5.900	5.653	5.196
63.0	3.977	4.218	4.445	4.584	4.462	4.396	4.229	3.913
66.0	3.160	3.356	3.532	3.600	3.536	3.475	3.344	3.095
69.0	2.518	2.676	2.808	2.827	2.820	2.769	2.653	2.462
72.0	1.984	2.101	2.198	2.191	2.220	2.167	2.072	1.928
75.0	1.543	1.603	1.685	1.688	1.725	1.651	1.584	1.459
78.0	1.194	1.207	1.197	1.265	1.347	1.241	1.082	1.071
81.0	0.8565	0.8089	0.6929	0.7919	0.9829	0.8154	0.5919	0.6358
84.0	0.4892	0.2505	0.0698	0.2253	0.5848	0.2745	0.0624	0.0975
87.0	0.0676	0.0347	0.0586	0.0338	0.0608	0.0353	0.0560	0.0332
90.0	0.0509	0.0360	0.0576	0.0361	0.0368	0.0395	0.0418	0.0342

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-12-26

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: