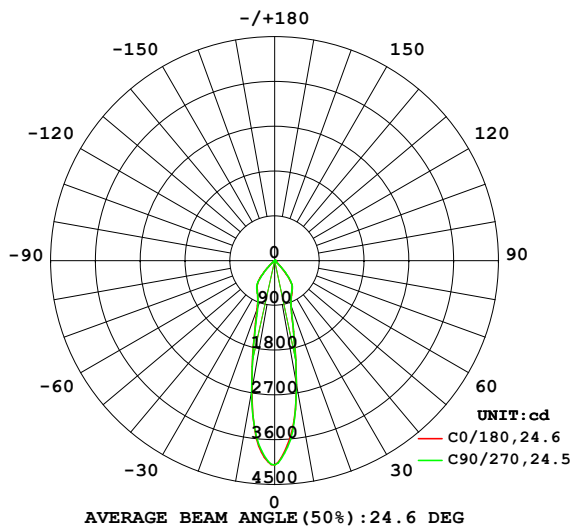


LUMINAIRE PHOTOMETRIC TEST REPORT

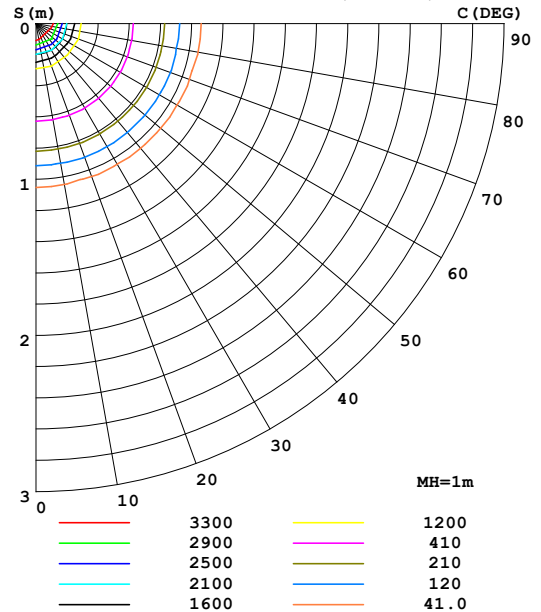
Test:U:240.4V I:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774		Lamp Flux:1690.4x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 115.23 lm/W
MODEL		Imax (cd)	4103	S/MH(C0/180)	0.43	
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	0.43	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1690.4	η UP,DN(C0-180)	0.0,49.2	
NOMINAL FLUX(lm)	1690.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.8	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	240.37	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:2024-10-18

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	2528	2503	2522	2591	2662	2697	2672	2582	0- 10	315.0	315.0	18.6,18.6
20	972.3	975.3	968.2	994.7	1035	1033	1012	977.4	10- 20	436.1	751.1	44.4,44.4
30	705.2	703.9	700.0	698.4	702.3	703.9	711.3	700.9	20- 30	374.4	1125	66.6,66.6
40	413.5	413.7	430.3	450.2	461.3	460.1	448.9	418.7	30- 40	375.4	1501	88.8,88.8
50	39.22	36.08	35.47	33.82	37.33	40.23	40.29	39.70	40- 50	154.6	1655	97.9,97.9
60	10.54	10.31	9.785	9.455	9.040	9.731	9.989	10.75	50- 60	17.36	1673	99,99
70	7.078	7.066	6.383	6.052	5.775	6.107	6.489	7.035	60- 70	7.642	1680	99.4,99.4
80	7.386	7.540	6.804	5.687	5.734	5.831	6.401	6.651	70- 80	6.489	1687	99.8,99.8
90	0.0636	0.0514	0.0717	0.0575	0.0610	0.0581	0.0669	0.0492	80- 90	3.452	1690	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): 1615.6 lm

%lum = 95.6%

%lamp = 95.6%

Conical surface Flux(120deg): 1672.8 lm

%lum = 99.0%

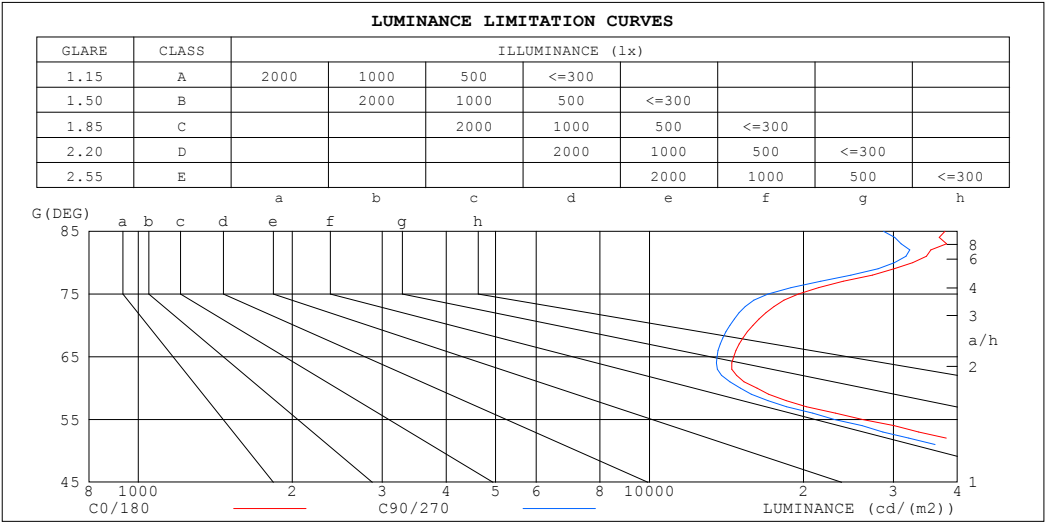
%lamp = 99.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774 Lamp Flux:1690.4x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D 15WTYPE:	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	37818	28707
80	32721	30130
75	19557	17038
70	15921	14351
65	14613	13556
60	16221	15048
55	26113	22994
50	46940	42433
45	184507	199406

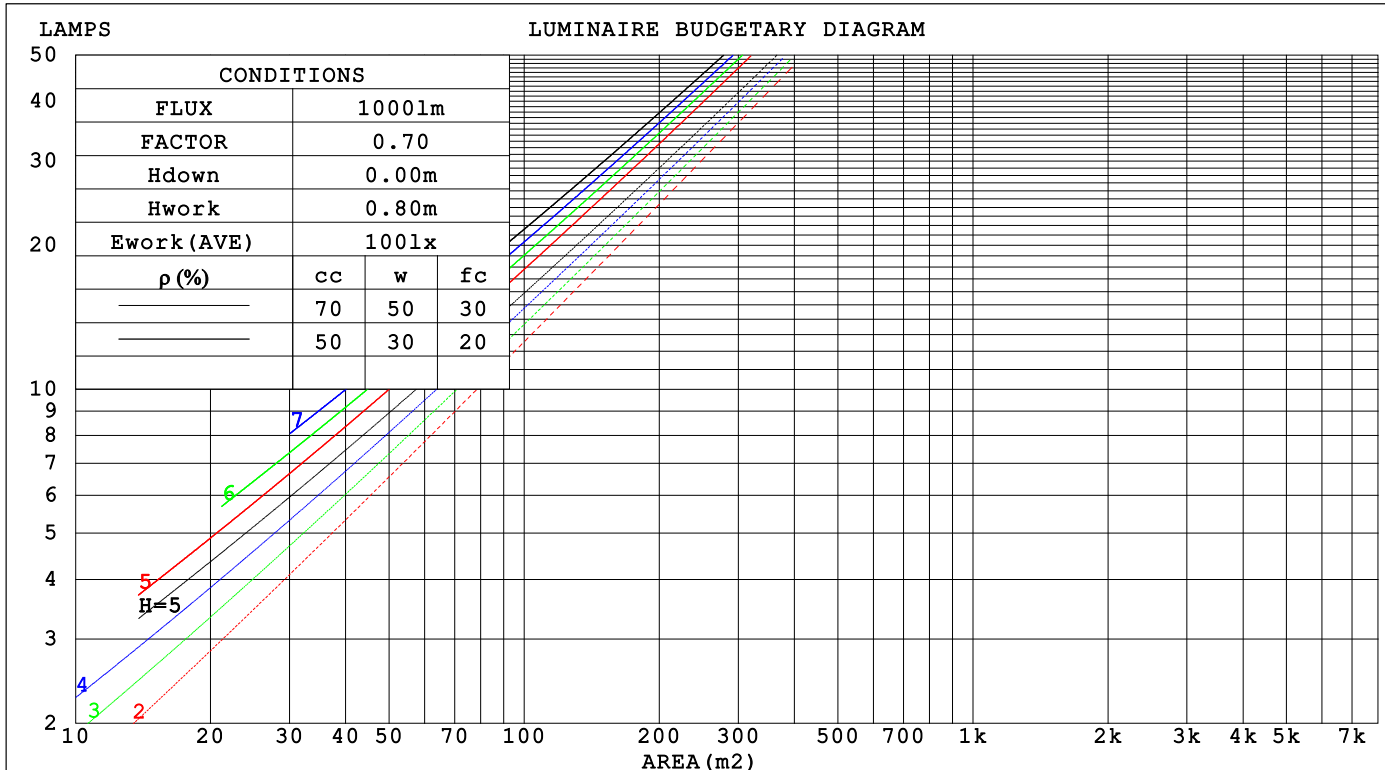
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774		
Lamp Flux:1690.4x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15WTYPE:	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:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz			UTHDi:0.17% ITHDi:17.51% KDisp:0.9774			Lamp Flux:1690.4x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D			15WTYPE:			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	.178	.101	.032	.171	.098	.031	.158	.091	.029	.147	.085	.027	.136	.079	.025		
2.0	.170	.093	.028	.164	.090	.028	.153	.085	.026	.144	.081	.025	.134	.076	.024		
3.0	.161	.086	.026	.156	.084	.025	.147	.080	.024	.139	.076	.023	.131	.073	.022		
4.0	.153	.079	.023	.149	.078	.023	.141	.075	.022	.134	.072	.022	.127	.069	.021		
5.0	.145	.074	.021	.142	.073	.021	.135	.070	.021	.129	.068	.020	.123	.066	.020		
6.0	.138	.069	.020	.135	.068	.020	.129	.066	.019	.124	.064	.019	.118	.062	.019		
7.0	.132	.065	.018	.129	.064	.018	.124	.063	.018	.119	.061	.018	.114	.059	.017		
8.0	.126	.061	.017	.123	.061	.017	.119	.059	.017	.114	.058	.017	.110	.057	.016		
9.0	.120	.058	.016	.118	.058	.016	.114	.056	.016	.110	.055	.016	.106	.054	.016		
10.0	.115	.055	.015	.113	.055	.015	.109	.054	.015	.106	.053	.015	.102	.051	.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	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016		
2.0	.156	.133	.113	.134	.114	.098	.092	.079	.068	.053	.046	.040	.017	.015	.013		
3.0	.143	.114	.090	.123	.098	.078	.084	.068	.055	.049	.040	.032	.016	.013	.011		
4.0	.133	.099	.073	.114	.085	.063	.079	.060	.044	.045	.035	.026	.015	.011	.009		
5.0	.124	.087	.060	.107	.075	.052	.074	.053	.037	.043	.031	.022	.014	.010	.007		
6.0	.117	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006		
7.0	.110	.070	.042	.095	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005		
8.0	.104	.064	.036	.090	.056	.032	.062	.039	.022	.036	.023	.013	.012	.008	.004		
9.0	.099	.059	.032	.085	.051	.028	.059	.036	.020	.034	.021	.012	.011	.007	.004		
10.0	.094	.054	.028	.081	.047	.024	.056	.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:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz UTHDi:0.17% ITHDi:17.51% KDisp:0.9774Lamp Flux:1690.4x1 lm										
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D 15WTYPE:						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	27.4	26.7	27.6	27.7	26.5	27.5	26.8	27.6	27.8
3H	26.3	27.2	26.6	27.4	27.6	26.4	27.2	26.6	27.4	27.6
4H	26.3	27.1	26.5	27.3	27.5	26.3	27.1	26.6	27.4	27.6
6H	26.3	27.0	26.5	27.3	27.5	26.3	27.1	26.6	27.3	27.5
8H	26.3	27.0	26.6	27.3	27.5	26.3	27.0	26.6	27.3	27.5
12H	26.3	27.0	26.6	27.2	27.5	26.3	27.0	26.6	27.3	27.5
4H 2H	26.2	27.0	26.5	27.2	27.5	26.3	27.1	26.6	27.3	27.5
3H	26.1	26.8	26.4	27.1	27.3	26.1	26.8	26.5	27.1	27.4
4H	26.0	26.7	26.4	27.0	27.3	26.1	26.7	26.4	27.0	27.3
6H	26.1	26.7	26.5	27.0	27.3	26.1	26.7	26.5	27.0	27.4
8H	26.1	26.7	26.5	27.0	27.4	26.2	26.7	26.6	27.0	27.4
12H	26.2	26.7	26.6	27.0	27.4	26.2	26.7	26.6	27.0	27.4
8H 4H	25.9	26.5	26.3	26.8	27.2	26.0	26.5	26.4	26.9	27.2
6H	26.1	26.5	26.5	26.9	27.3	26.1	26.5	26.5	26.9	27.3
8H	26.2	26.5	26.6	27.0	27.4	26.2	26.5	26.6	27.0	27.4
12H	26.3	26.6	26.7	27.0	27.5	26.2	26.6	26.7	27.0	27.5
12H 4H	25.9	26.4	26.3	26.8	27.1	26.0	26.4	26.4	26.8	27.2
6H	26.0	26.4	26.5	26.8	27.3	26.1	26.5	26.5	26.9	27.3
8H	26.2	26.5	26.6	26.9	27.4	26.2	26.5	26.6	26.9	27.4
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 6.7					+ 2.5 / - 7.2				
1.5H	+ 4.7 / - 6.7					+ 4.8 / - 7.2				
2.0H	+ 5.9 / - 2.2					+ 6.4 / - 2.6				

CIE Pub.117, 1690 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.8$)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774		Lamp Flux:1690.4x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

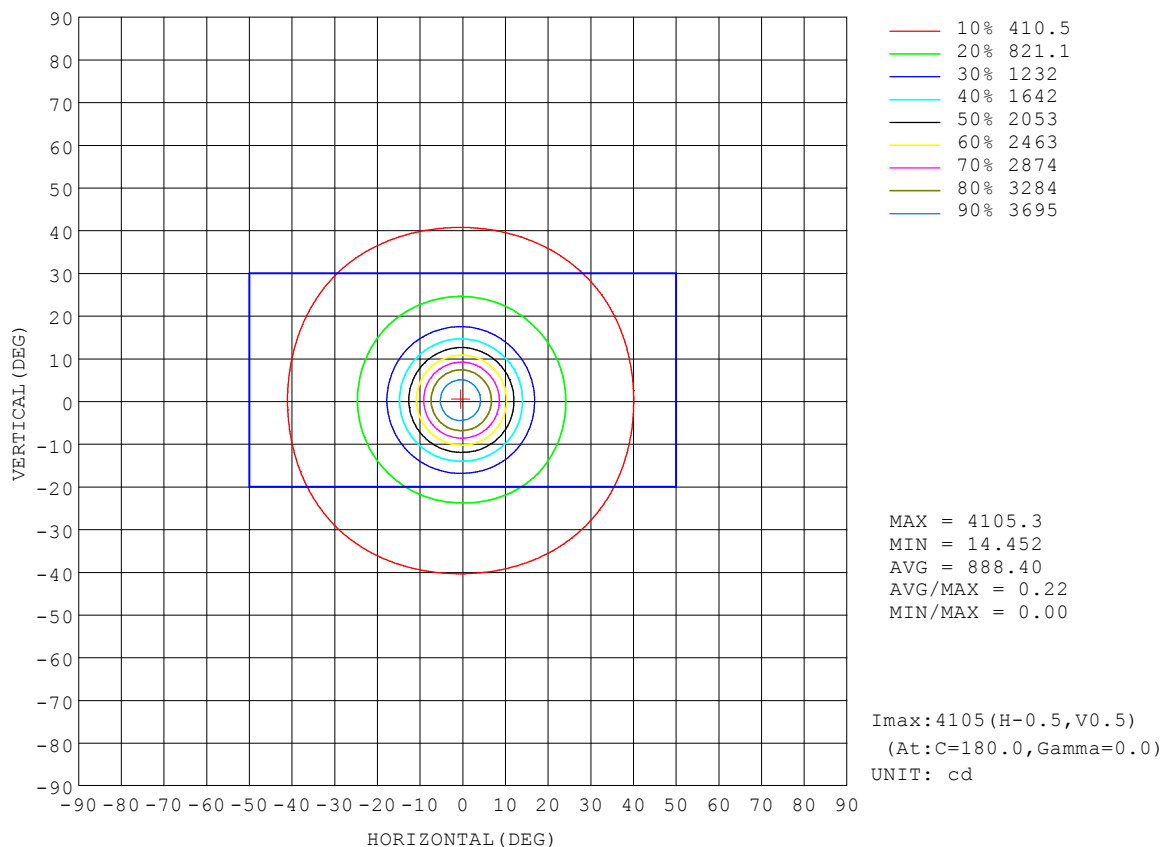
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	77	73	70
0.80	92	86	82	92	86	82	91	85	82	78
1.00	98	92	88	97	91	87	95	91	87	83
1.25	102	96	93	101	96	92	99	95	91	87
1.50	105	100	96	103	99	96	101	97	95	90
2.00	108	103	100	106	102	99	104	100	98	92
2.50	110	105	102	108	104	101	105	102	100	93
3.00	111	108	105	109	106	104	106	103	101	95
4.00	113	110	108	111	109	107	108	106	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:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774 Lamp Flux:1690.4x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D 15WTYPE:	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

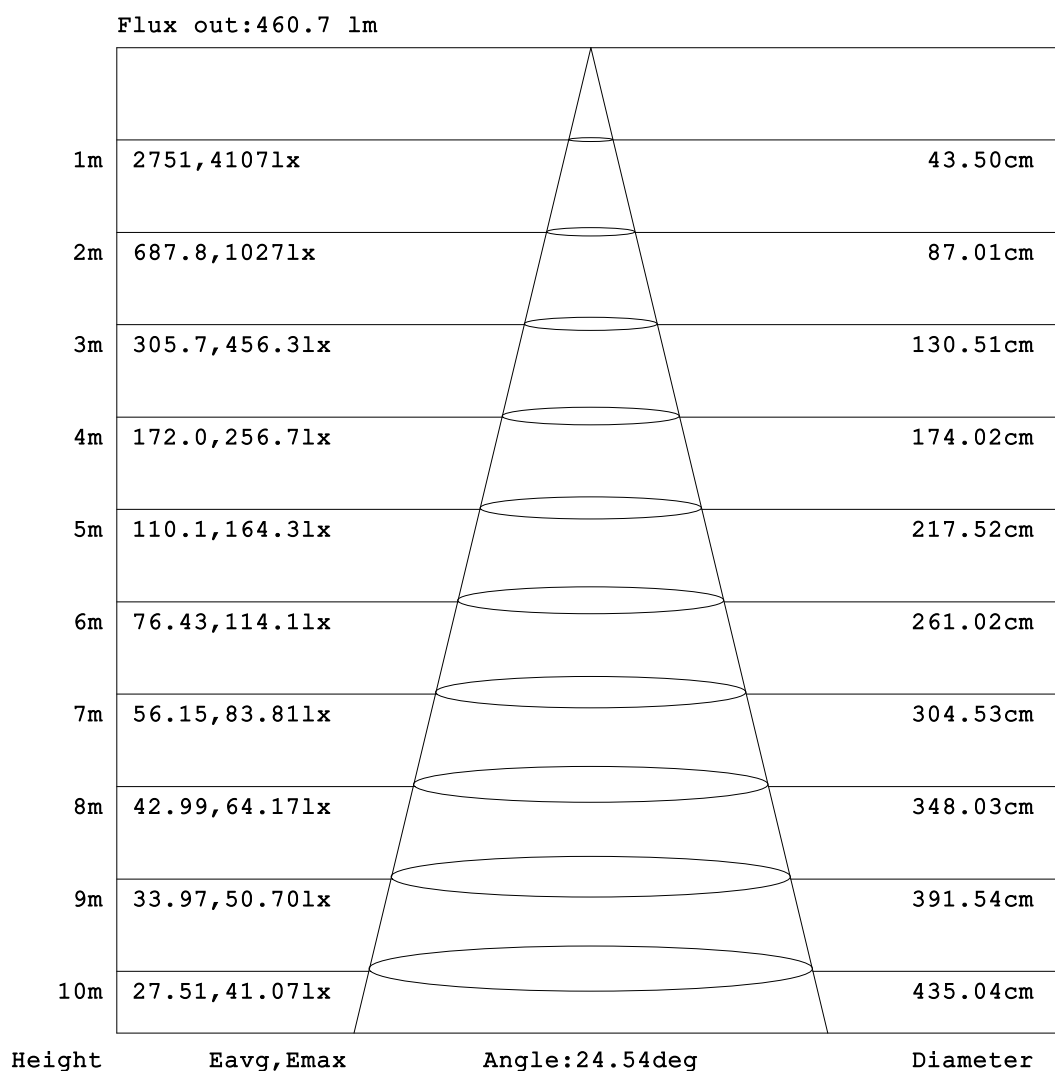


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774		Lamp Flux:1690.4x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



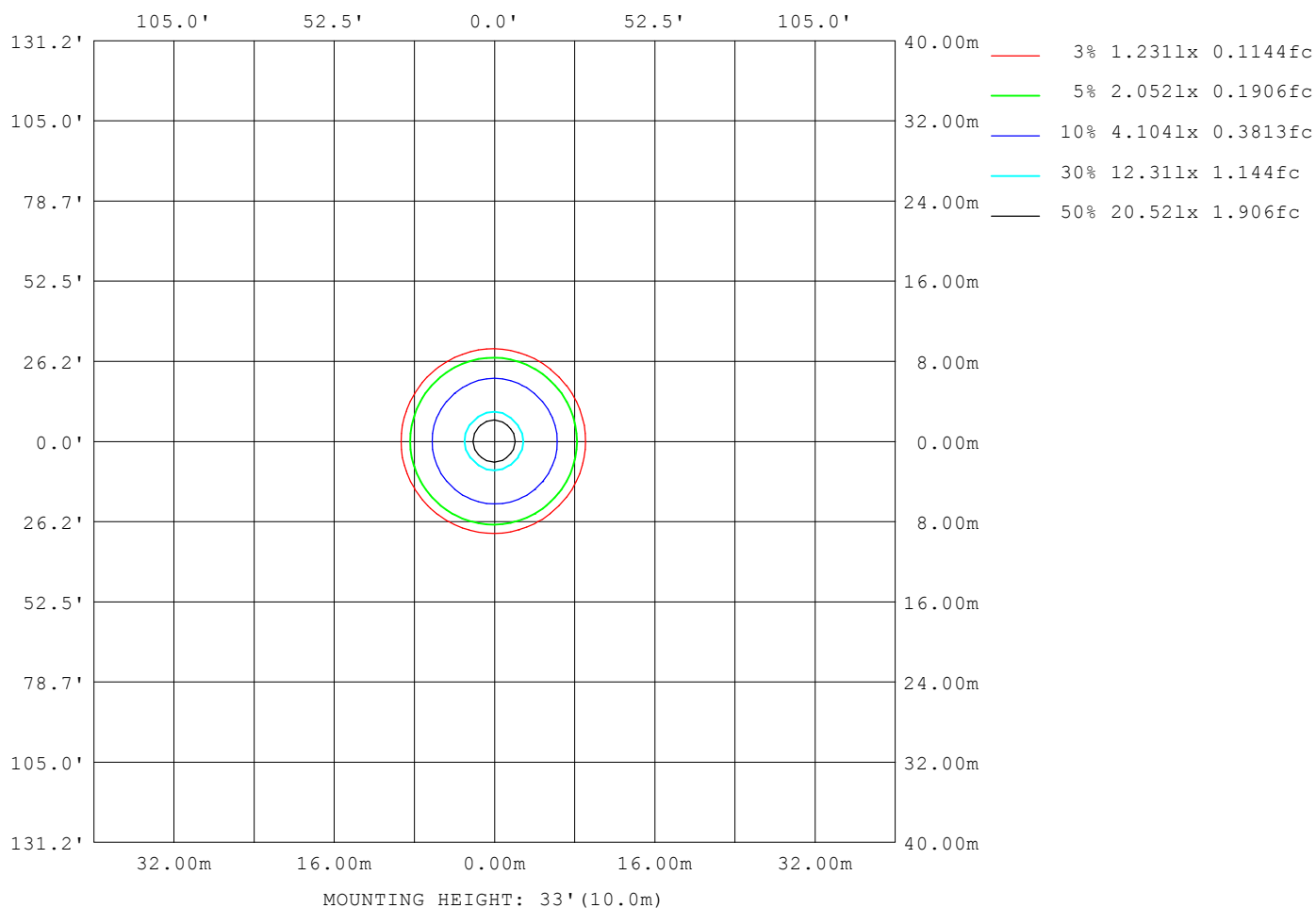
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774		Lamp Flux:1690.4x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15WTYPE:	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:2024-10-18

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:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.51% KDisp:0.9774 Lamp Flux:1690.4x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 25D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

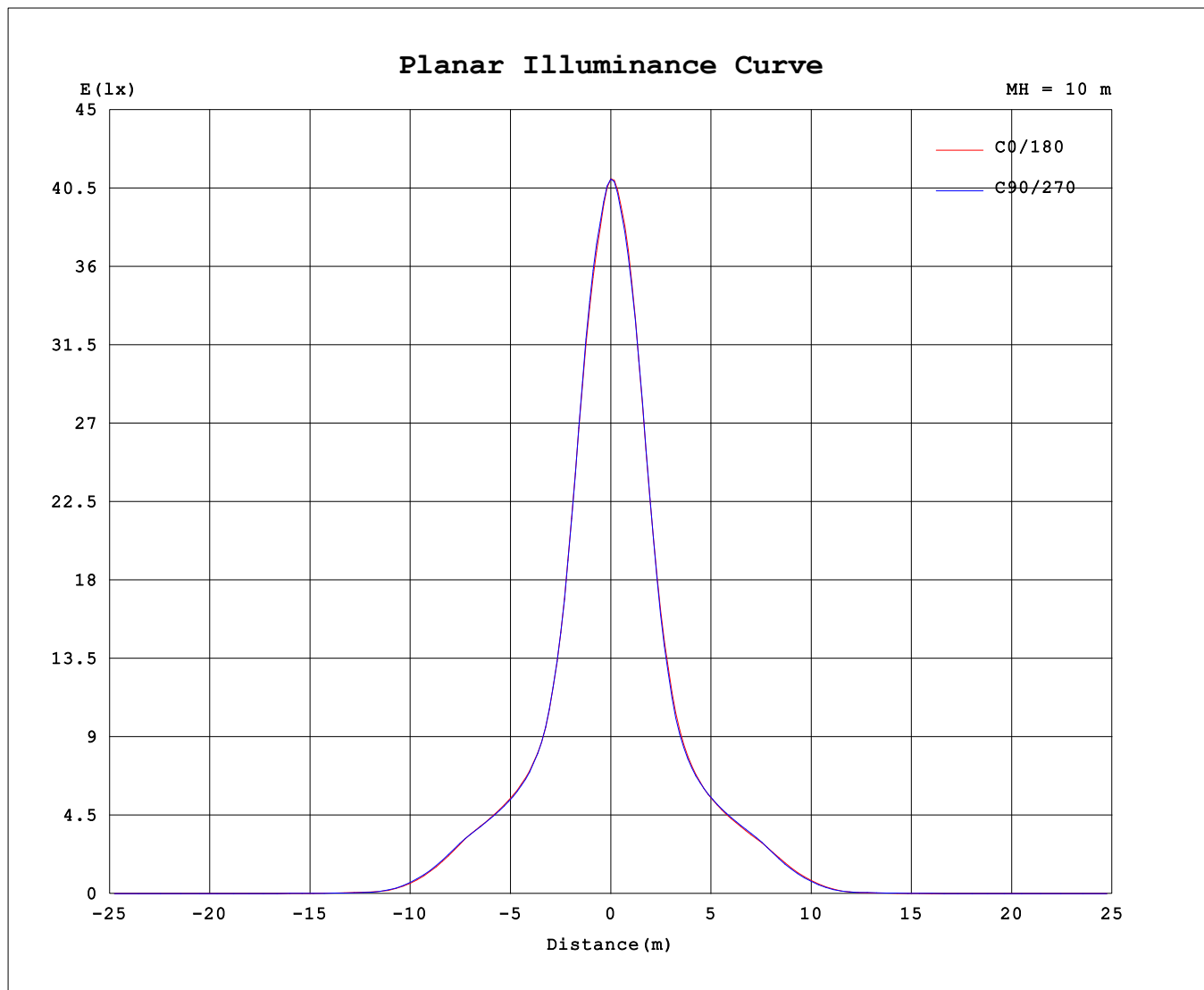
AvgL	cd/m2
L_0~180 (65) av	13513
L_0~180 (75) av	17236
L_0~180 (85) av	30390
L_90~270 (65) av	13510
L_90~270 (75) av	17109
L_90~270 (85) av	30084
L_45 (65) av	13865
L_45 (75) av	17216
L_45 (85) av	29860

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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: 2024-10-18

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	4103	4103	4103	4103	4103	4103	4103	4103
3.0	3838	3842	3871	3922	3960	3962	3933	3875
6.0	3420	3411	3457	3526	3573	3587	3549	3465
9.0	2772	2750	2778	2846	2909	2951	2922	2824
12.0	2047	2043	2043	2111	2181	2202	2179	2094
15.0	1476	1477	1481	1543	1611	1611	1580	1501
18.0	1109	1113	1112	1154	1207	1205	1173	1121
21.0	928.8	926.8	922.5	938.0	972.1	969.5	954.0	931.8
24.0	824.7	826.0	814.8	822.1	841.9	841.1	836.6	822.5
27.0	758.2	758.3	748.7	751.1	760.6	761.2	763.9	754.5
30.0	705.2	703.9	700.0	698.4	702.3	703.9	711.3	700.9
33.0	657.6	656.0	653.6	651.6	651.2	655.7	665.3	652.8
36.0	592.2	593.2	597.4	600.2	597.7	604.7	610.9	592.3
39.0	463.1	464.2	479.8	496.7	504.8	507.4	498.4	468.1
42.0	312.1	313.2	327.5	347.8	363.4	357.8	345.4	318.8
45.0	169.6	171.4	183.4	200.2	215.0	209.1	200.4	177.6
48.0	65.70	63.40	75.50	76.18	88.52	90.28	80.92	75.67
51.0	34.64	31.56	29.63	28.27	26.63	30.11	32.83	35.06
54.0	22.97	20.52	19.90	19.22	18.35	19.87	21.43	23.00
57.0	14.35	13.53	13.13	12.78	12.38	13.42	14.15	14.87
60.0	10.54	10.31	9.785	9.455	9.040	9.731	9.989	10.75
63.0	8.549	8.756	8.015	7.730	7.378	7.648	7.974	8.622
66.0	7.804	7.885	7.200	6.943	6.586	6.835	7.175	7.809
69.0	7.239	7.237	6.581	6.267	5.969	6.277	6.639	7.222
72.0	6.786	6.744	6.014	5.671	5.427	5.784	6.186	6.687
75.0	6.580	6.502	5.735	5.171	5.019	5.311	5.778	6.187
78.0	7.371	7.550	6.701	5.472	5.647	5.405	6.091	6.376
81.0	7.080	7.305	6.456	5.472	5.601	5.666	6.031	6.291
84.0	5.010	4.999	4.103	3.252	3.466	3.845	4.310	4.609
87.0	1.542	1.282	0.9065	0.7597	0.8254	1.126	1.477	1.515
90.0	0.0636	0.0514	0.0717	0.0575	0.0610	0.0581	0.0669	0.0492

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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: