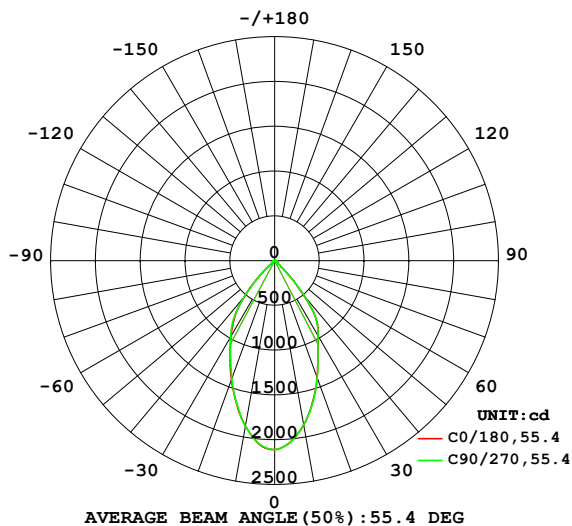


LUMINAIRE PHOTOMETRIC TEST REPORT

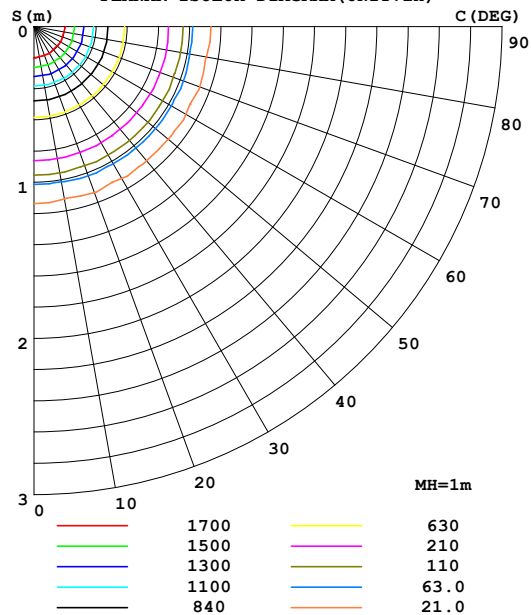
Test:U:240.4V I:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 107.77 lm/W
MODEL		I _{max} (cd)	2110	S/MH(C0/180)		0.81
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)		0.80
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1923.1	η UP,DN(C0-180)		0.0,49.9
NOMINAL FLUX(lm)	1923.08	CIE CLASS	DIRECT	η UP,DN(C180-360)		0.0,50.1
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.75
TEST VOLTAGE(V)	240.38	η down (%)	100.0	CIBSE SHR MAX		0.95

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:2024-10-17

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	1867	1868	1862	1874	1877	1877	1879	1873	0- 10	189.4	189.4	9.85,9.85
20	1388	1405	1393	1403	1413	1406	1400	1378	10- 20	458.3	647.7	33.7,33.7
30	974.1	979.9	971.5	979.3	980.6	983.6	986.1	979.6	20- 30	536.4	1184	61.6,61.6
40	515.4	531.6	529.5	541.3	538.6	538.4	529.6	511.6	30- 40	490.4	1675	87.1,87.1
50	47.97	46.29	41.11	44.18	45.23	45.38	48.24	48.30	40- 50	179.6	1854	96.4,96.4
60	28.48	28.33	27.24	27.02	25.73	25.47	26.72	28.92	50- 60	30.05	1884	98,98
70	17.77	17.14	16.35	16.79	18.18	18.58	18.58	18.10	60- 70	22.45	1907	99.1,99.1
80	8.012	7.520	6.631	6.369	6.793	7.488	7.954	8.238	70- 80	12.91	1920	99.8,99.8
90	0.0801	0.0719	0.0878	0.0744	0.0798	0.0751	0.0804	0.0715	80- 90	3.526	1923	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): 1809.4 lm

%lum = 94.1%

%lamp = 94.1%

Conical surface Flux(120deg): 1884.2 lm

%lum = 98.0%

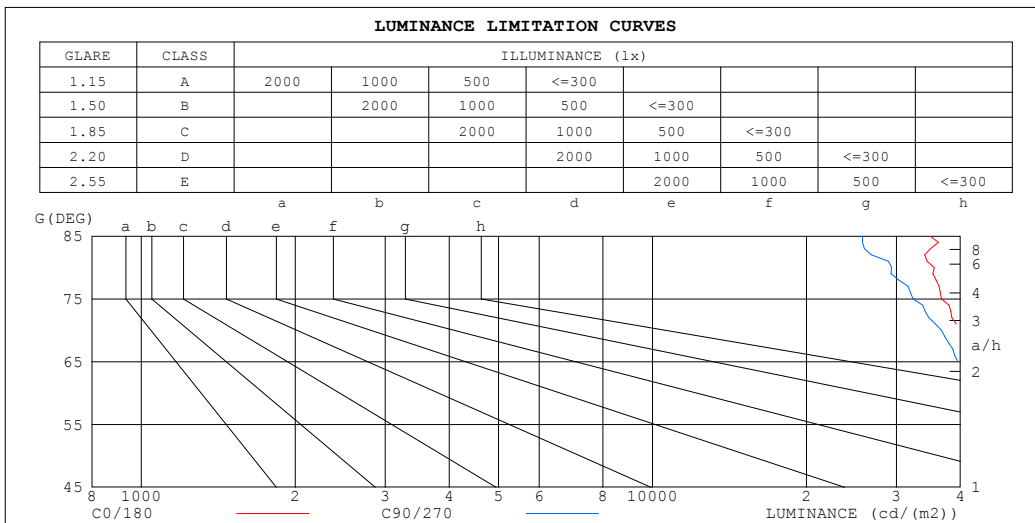
%lamp = 98.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz			Lamp Flux:1923.08x1 lm		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861					
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D 18WTYPE:			WEIGHT:		
SPEC.:			DIM.:		
MFR.: Norming lighting			SUR.: 41mm		
			Shielding Angle:		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	34958	25752
80	35579	29350
75	36781	32352
70	40066	36744
65	42072	39547
60	43922	41872
55	48377	43377
50	57542	49162
45	209971	218359

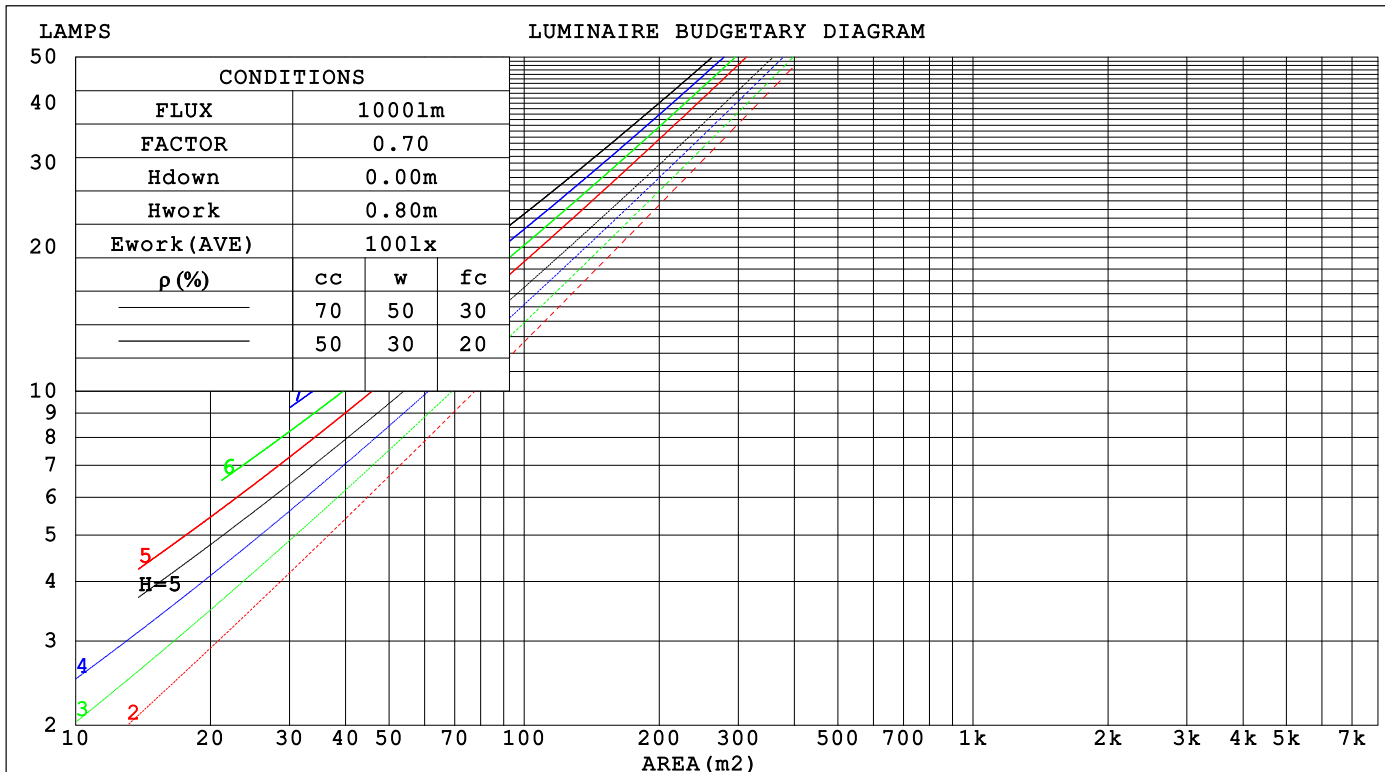
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18WTYPE:	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:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz			UTHDi:0.17% ITHDi:17.56% KDisp:0.9861			Lamp Flux:1923.08x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D			18WTYPE:			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	.192	.109	.035	.185	.106	.034	.172	.099	.032	.161	.093	.030	.150	.087	.028		
2.0	.184	.101	.031	.178	.098	.030	.168	.093	.029	.158	.088	.028	.149	.084	.026		
3.0	.175	.093	.028	.170	.091	.027	.161	.087	.027	.153	.084	.026	.145	.080	.025		
4.0	.167	.087	.025	.162	.085	.025	.154	.082	.024	.147	.079	.024	.140	.076	.023		
5.0	.159	.081	.023	.155	.080	.023	.148	.077	.023	.141	.075	.022	.135	.072	.022		
6.0	.151	.076	.022	.148	.075	.021	.142	.073	.021	.136	.071	.021	.130	.069	.020		
7.0	.144	.071	.020	.141	.070	.020	.136	.069	.020	.131	.067	.019	.126	.065	.019		
8.0	.138	.067	.019	.135	.066	.019	.130	.065	.019	.125	.064	.018	.121	.062	.018		
9.0	.132	.064	.018	.129	.063	.018	.125	.062	.017	.121	.060	.017	.117	.059	.017		
10.0	.126	.060	.017	.124	.060	.017	.120	.059	.017	.116	.058	.016	.113	.057	.016		

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	.101	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013		
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.137	.099	.071	.117	.086	.061	.081	.060	.043	.047	.035	.026	.015	.011	.008		
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.036	.044	.031	.021	.014	.010	.007		
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.025	.015	.013	.008	.005		
8.0	.109	.065	.035	.094	.056	.030	.065	.040	.022	.038	.023	.013	.012	.008	.004		
9.0	.104	.060	.030	.090	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004		
10.0	.099	.056	.027	.086	.048	.023	.059	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz UTHDi:0.17% ITHDi:17.56% KDisp:0.9861Lamp Flux:1923.08x1 lm										
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D 18WTYPE:						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	27.9	28.9	28.1	29.1	29.2	27.9	28.9	28.1	29.1	29.2
3H	27.8	28.8	28.1	29.0	29.2	27.8	28.8	28.1	29.0	29.2
4H	27.8	28.7	28.1	28.9	29.1	27.8	28.7	28.1	28.9	29.1
6H	27.8	28.6	28.1	28.9	29.1	27.7	28.6	28.0	28.8	29.1
8H	27.8	28.6	28.1	28.8	29.1	27.7	28.5	28.0	28.8	29.0
12H	27.7	28.5	28.1	28.8	29.1	27.7	28.4	28.0	28.7	29.0
4H 2H	27.7	28.5	27.9	28.8	29.0	27.7	28.6	27.9	28.8	29.0
3H	27.7	28.4	28.0	28.7	29.0	27.6	28.4	28.0	28.7	29.0
4H	27.7	28.4	28.0	28.7	29.0	27.7	28.3	28.0	28.6	29.0
6H	27.7	28.3	28.1	28.6	29.0	27.6	28.3	28.0	28.6	28.9
8H	27.7	28.3	28.1	28.6	29.0	27.6	28.2	28.0	28.6	28.9
12H	27.7	28.2	28.1	28.6	29.0	27.6	28.1	28.0	28.5	28.9
8H 4H	27.6	28.2	28.0	28.5	28.9	27.6	28.1	28.0	28.5	28.9
6H	27.6	28.1	28.1	28.5	28.9	27.6	28.1	28.0	28.5	28.9
8H	27.7	28.1	28.1	28.5	28.9	27.6	28.0	28.0	28.4	28.9
12H	27.7	28.1	28.2	28.5	29.0	27.6	27.9	28.1	28.4	28.9
12H 4H	27.6	28.1	28.0	28.4	28.8	27.5	28.0	27.9	28.4	28.8
6H	27.6	28.0	28.1	28.4	28.9	27.6	28.0	28.0	28.4	28.8
8H	27.7	28.0	28.1	28.4	28.9	27.6	27.9	28.0	28.4	28.8
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 5.9					+ 2.6 / - 6.4				
1.5H	+ 4.8 / - 5.8					+ 4.9 / - 6.4				
2.0H	+ 5.0 / - 1.4					+ 5.4 / - 1.6				

CIE Pub.117, 1923 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 2.3)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

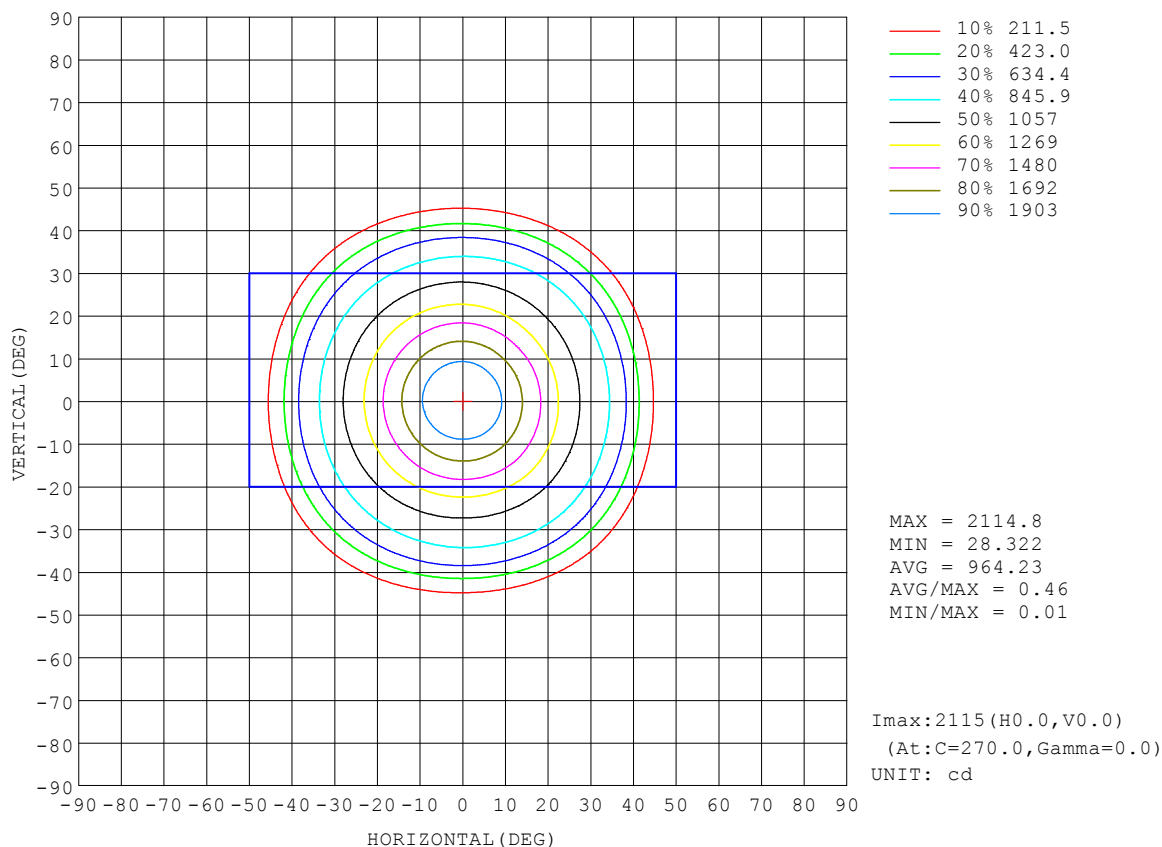
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	76	72	83	76	72	82	76	72	68
0.80	91	85	81	91	85	81	90	84	80	76
1.00	97	90	86	96	90	86	94	90	86	81
1.25	101	95	92	100	95	91	98	94	90	86
1.50	104	99	95	103	98	95	100	97	94	89
2.00	107	103	99	106	102	98	103	100	97	91
2.50	109	105	102	107	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	103	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:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861 Lamp Flux:1923.08x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D 18WTYPE:	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

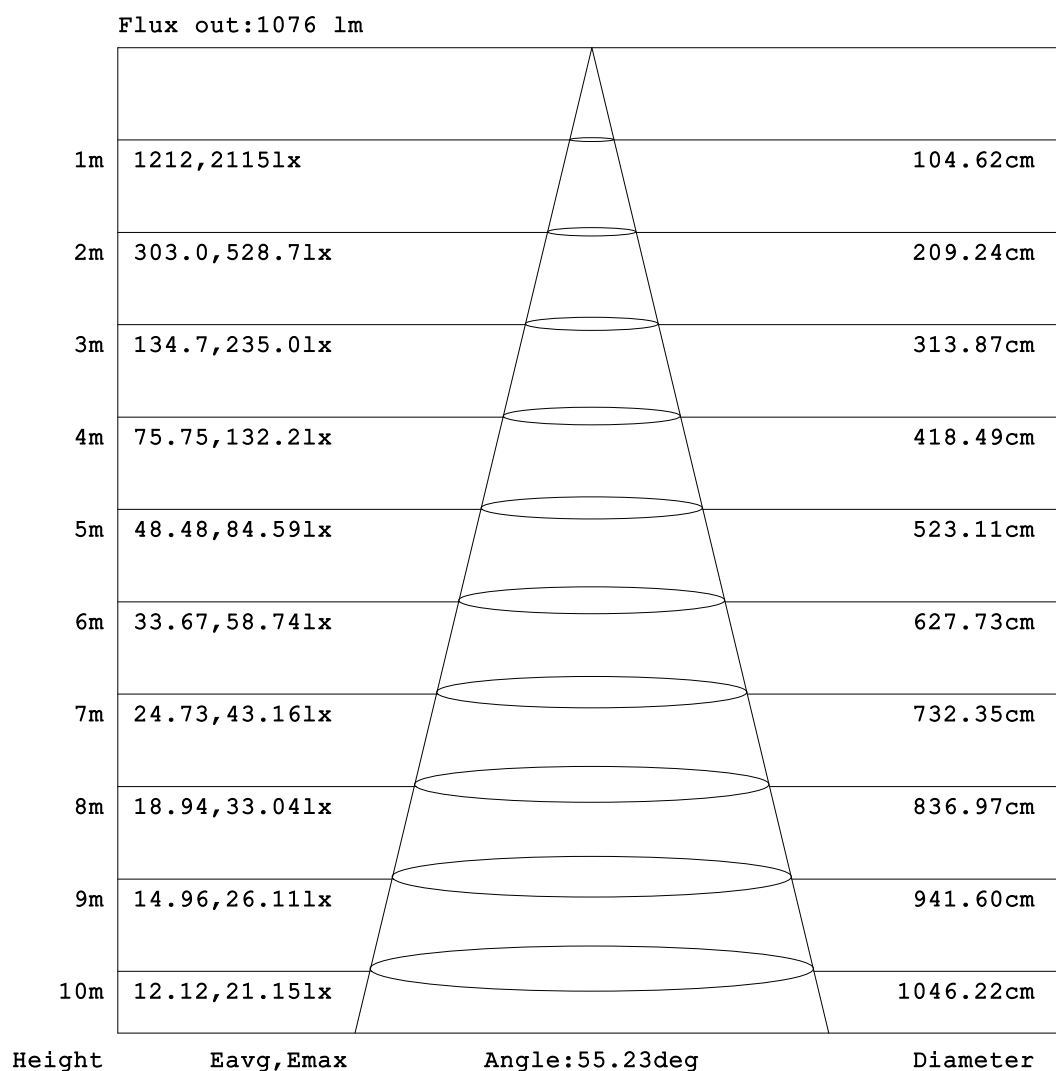


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



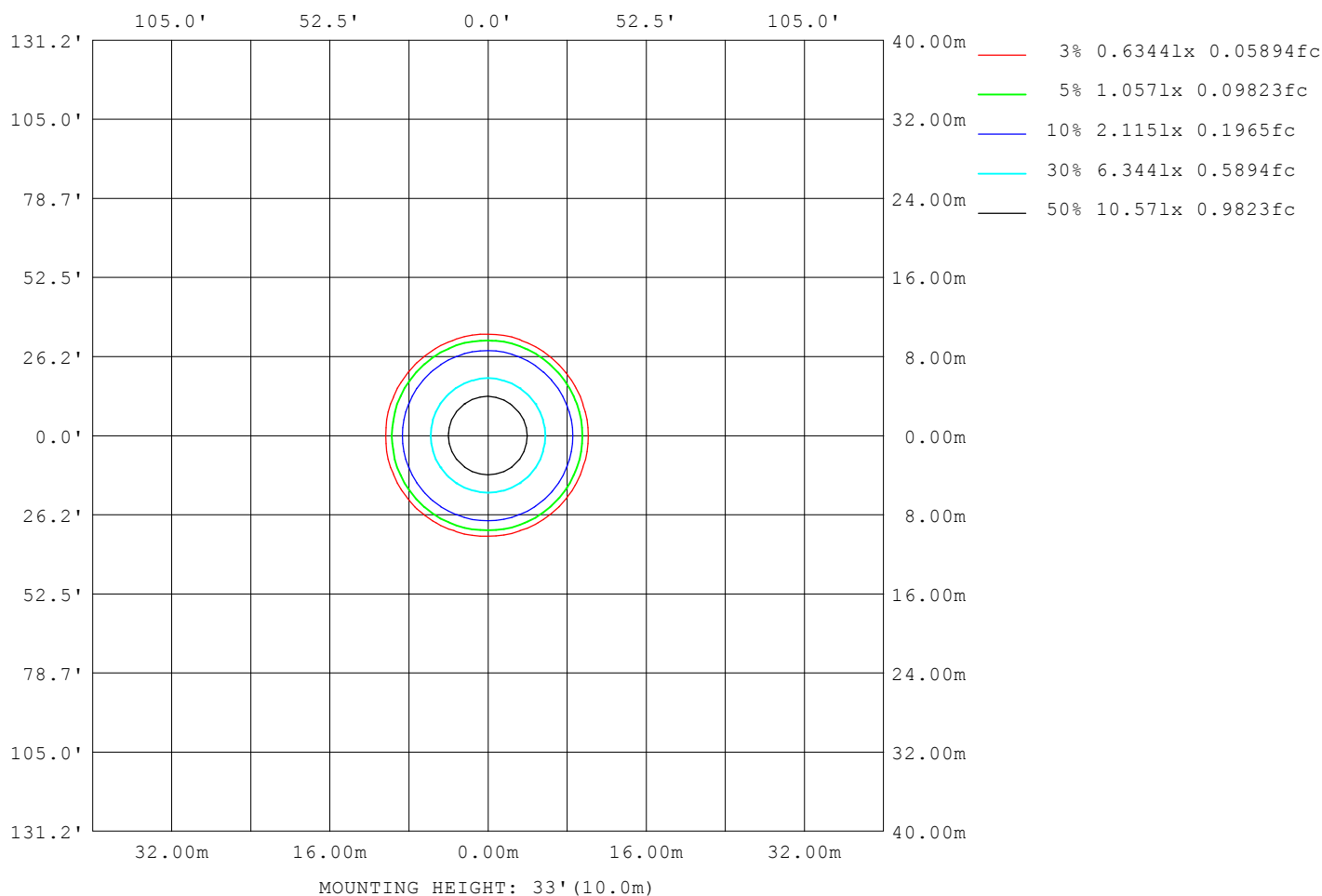
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18WTYPE:	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:2024-10-17

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:0.0764A P:17.8W PF:0.9711 Freq:49.99Hz		
UTHDi:0.17% ITHDi:17.56% KDisp:0.9861		Lamp Flux:1923.08x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 60D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

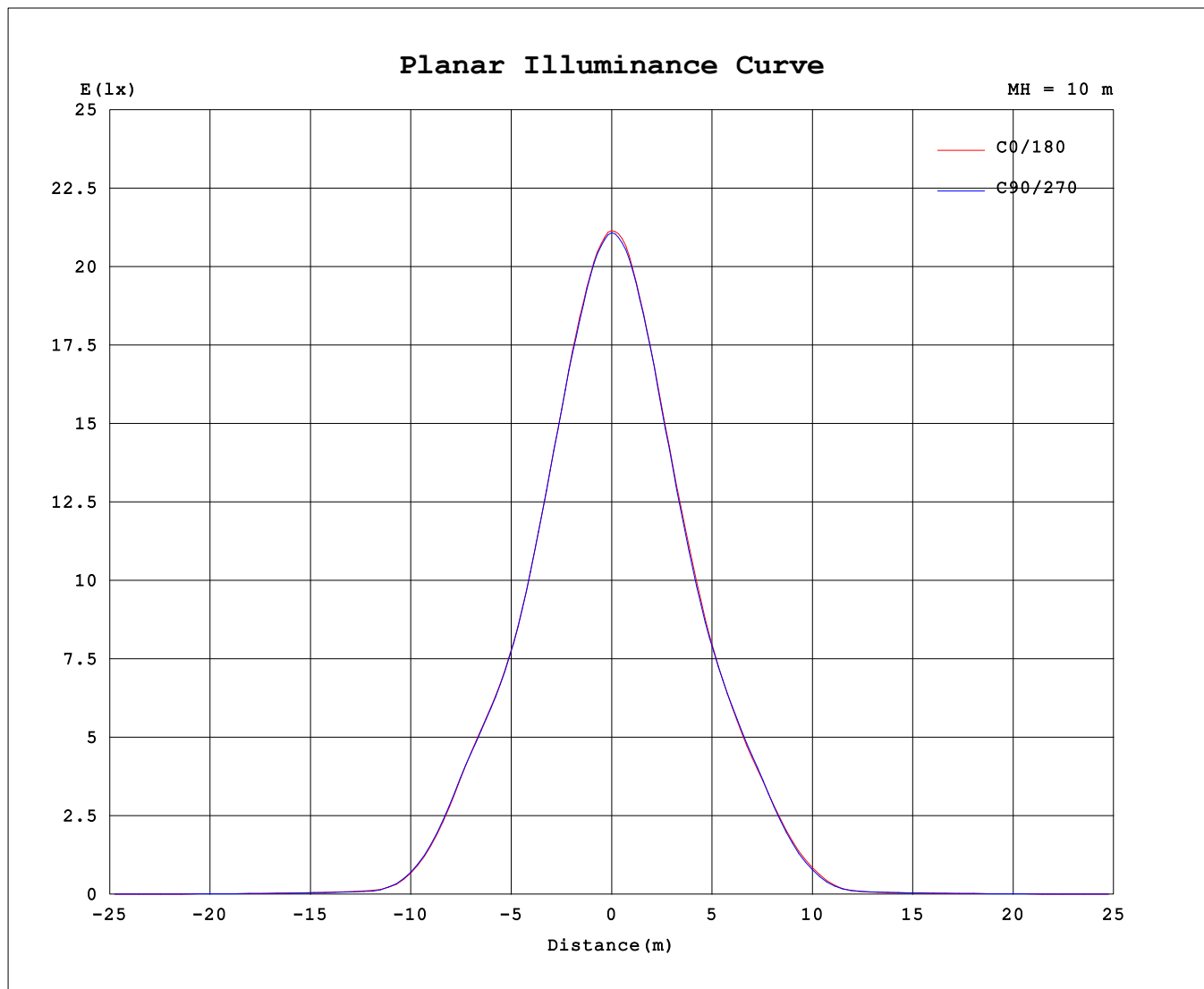
AvgL	cd/m2
L_0~180 (65) av	41747
L_0~180 (75) av	36413
L_0~180 (85) av	30243
L_90~270 (65) av	41224
L_90~270 (75) av	35104
L_90~270 (85) av	31410
L_45 (65) av	41709
L_45 (75) av	35816
L_45 (85) av	31359

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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: 2024-10-17

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	2110	2110	2110	2110	2110	2110	2110	2110
3.0	2077	2079	2077	2086	2093	2091	2086	2081
6.0	2005	2007	2007	2017	2023	2026	2023	2011
9.0	1904	1905	1899	1912	1917	1918	1918	1910
12.0	1781	1785	1783	1790	1792	1791	1796	1783
15.0	1640	1647	1644	1649	1652	1647	1647	1634
18.0	1491	1505	1497	1502	1508	1503	1499	1482
21.0	1337	1355	1342	1355	1366	1358	1351	1327
24.0	1190	1207	1191	1211	1224	1221	1211	1186
27.0	1070	1081	1069	1088	1094	1095	1091	1075
30.0	974.1	979.9	971.5	979.3	980.6	983.6	986.1	979.6
33.0	889.1	891.3	885.9	875.0	865.6	873.1	880.1	887.9
36.0	774.5	781.6	779.8	764.5	750.8	757.5	764.9	770.0
39.0	585.8	599.8	600.1	605.2	600.7	600.2	594.8	581.8
42.0	376.5	391.8	388.0	409.3	413.0	411.8	399.5	377.9
45.0	192.5	205.6	200.9	234.8	241.1	230.4	223.2	200.1
48.0	78.37	74.80	79.55	91.69	98.44	92.81	88.89	82.34
51.0	44.64	42.70	38.13	37.17	36.54	38.29	42.65	44.88
54.0	37.78	36.11	33.33	32.13	30.84	30.77	34.08	37.80
57.0	32.54	31.47	30.25	29.93	27.59	27.32	29.31	33.34
60.0	28.48	28.33	27.24	27.02	25.73	25.47	26.72	28.92
63.0	25.20	24.97	23.89	24.34	23.99	23.82	24.76	25.81
66.0	22.01	21.69	20.63	21.36	21.90	21.99	22.64	22.52
69.0	18.71	18.21	17.39	17.88	19.31	19.54	19.76	19.03
72.0	15.44	14.86	13.94	14.40	15.83	16.17	16.15	15.73
75.0	12.35	11.86	10.89	10.99	12.16	12.77	12.73	12.59
78.0	9.676	9.028	8.212	8.169	8.990	9.527	9.690	9.966
81.0	6.986	6.584	5.889	5.631	6.080	6.711	7.166	7.291
84.0	4.911	4.168	3.503	3.289	3.441	4.090	4.854	5.354
87.0	1.274	1.049	0.8490	1.162	1.200	1.392	1.620	1.535
90.0	0.0801	0.0719	0.0878	0.0744	0.0798	0.0751	0.0804	0.0715

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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: