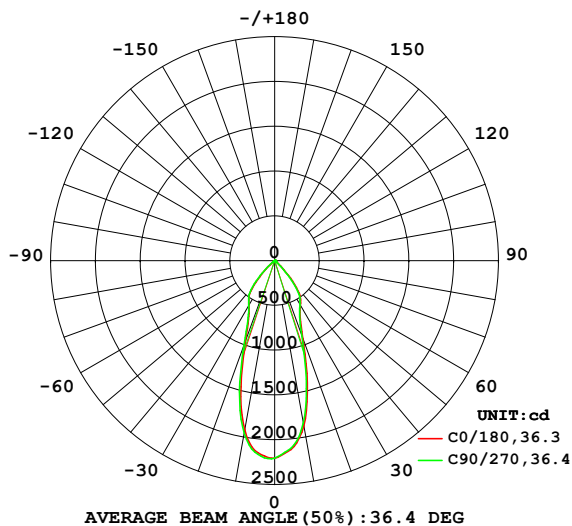


LUMINAIRE PHOTOMETRIC TEST REPORT

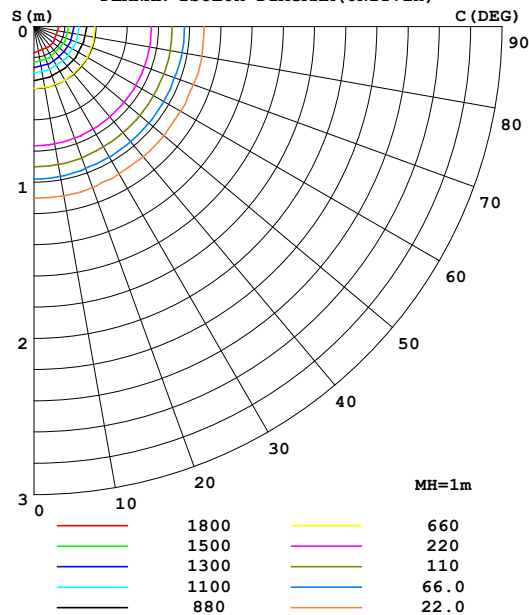
Test:U:240.4V I:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655		Lamp Flux:1385.1x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 110.52 lm/W
MODEL		I _{max} (cd)	2215	S/MH (C0/180)		0.61
NOMINAL POWER(W)	13	LOR (%)	100.0	S/MH (C90/270)		0.63
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1385.1	η UP,DN (C0-180)		0.0,48.5
NOMINAL FLUX(lm)	1385.1	CIE CLASS	DIRECT	η UP,DN (C180-360)		0.0,51.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.50
TEST VOLTAGE(V)	240.4	η down (%)	100.0	CIBSE SHR MAX		0.60

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	1874	1838	1844	1885	1922	1963	1955	1929	0- 10	196.8	196.8	14.2,14.2
20	927.8	896.7	895.3	930.6	953.5	975.2	1006	976.3	10- 20	391.2	588.0	42.5,42.5
30	576.8	570.9	567.7	574.6	578.9	580.8	583.7	577.0	20- 30	322.3	910.4	65.7,65.7
40	347.6	323.4	320.6	340.2	362.7	385.7	386.0	367.8	30- 40	303.9	1214	87.7,87.7
50	37.51	35.44	36.25	36.04	37.96	42.81	42.99	39.82	40- 50	131.1	1345	97.1,97.1
60	13.95	13.03	13.54	13.86	13.48	14.04	14.60	14.73	50- 60	20.10	1365	98.6,98.6
70	7.154	7.054	7.678	7.259	6.707	6.667	7.111	7.475	60- 70	9.504	1375	99.3,99.3
80	5.880	5.777	5.870	5.986	5.703	5.696	5.948	5.919	70- 80	7.427	1382	99.8,99.8
90	0.0548	0.0449	0.0595	0.0471	0.0487	0.0472	0.0569	0.0471	80- 90	2.736	1385	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): 1308.9 lm

%lum = 94.5%

%lamp = 94.5%

Conical surface Flux(120deg): 1365.4 lm

%lum = 98.6%

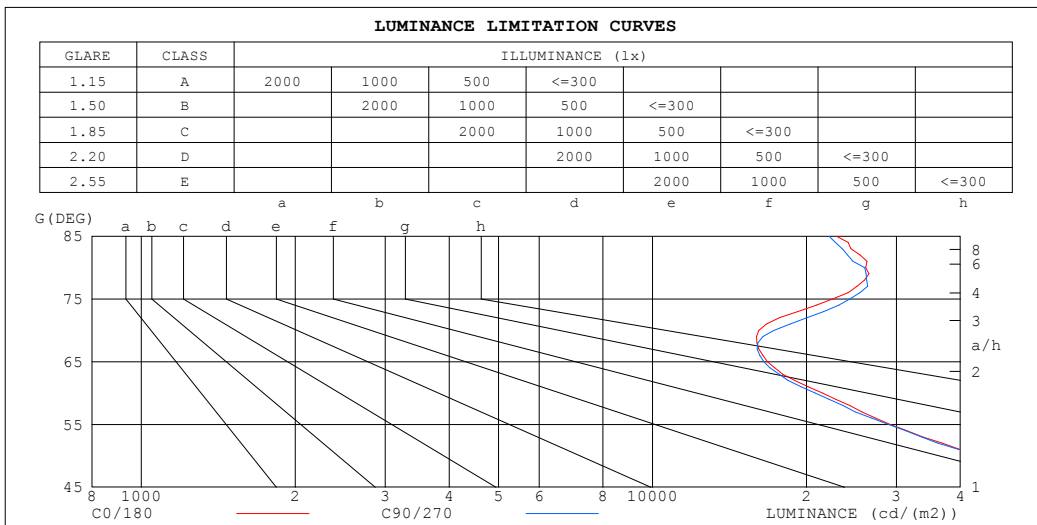
%lamp = 98.6%

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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655		Lamp Flux:1385.1x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	22905	22157
80	26116	25996
75	22500	24310
70	16131	17264
65	16785	16504
60	21520	20825
55	29174	28984
50	44999	43362
45	167770	148109

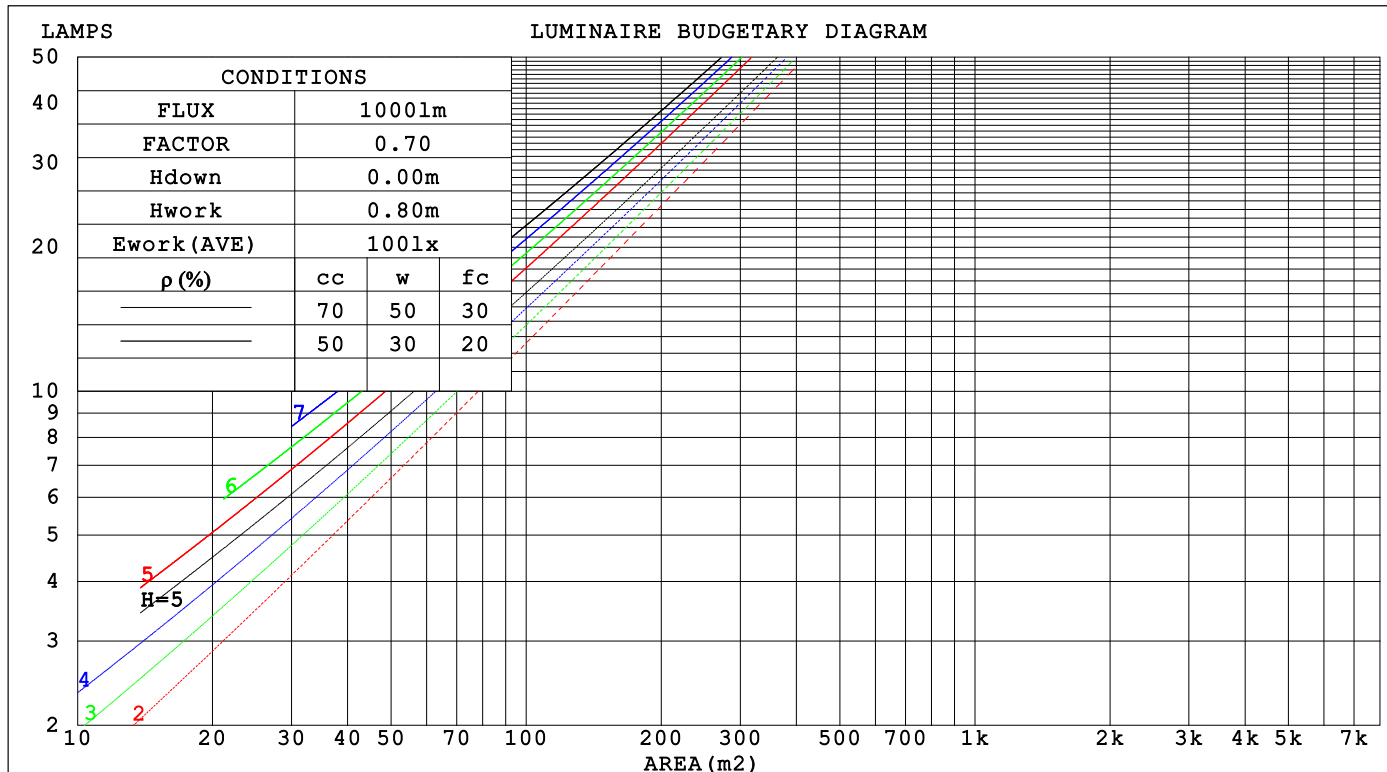
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655 Lamp Flux:1385.1x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D 13WTYPE:	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															



WEC AND CCEC

Test:U:240.4V I:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz			UTHDi:0.16% ITHDi:18.89% KDisp:0.9655			Lamp Flux:1385.1x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D			13WTYPE:			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	.183	.104	.033	.176	.101	.032	.164	.094	.030	.152	.088	.028	.141	.082	.026		
2.0	.175	.096	.029	.169	.093	.029	.158	.088	.027	.149	.083	.026	.140	.079	.025		
3.0	.166	.088	.026	.161	.086	.026	.152	.082	.025	.144	.079	.024	.136	.075	.023		
4.0	.158	.082	.024	.154	.080	.024	.146	.077	.023	.138	.074	.022	.132	.072	.022		
5.0	.150	.076	.022	.146	.075	.022	.139	.073	.021	.133	.070	.021	.127	.068	.020		
6.0	.143	.072	.020	.140	.070	.020	.134	.068	.020	.128	.066	.020	.123	.065	.019		
7.0	.136	.067	.019	.133	.066	.019	.128	.065	.019	.123	.063	.018	.118	.061	.018		
8.0	.130	.063	.018	.127	.063	.018	.123	.061	.017	.118	.060	.017	.114	.058	.017		
9.0	.124	.060	.017	.122	.059	.017	.118	.058	.016	.114	.057	.016	.110	.056	.016		
10.0	.119	.057	.016	.117	.056	.016	.113	.055	.016	.109	.054	.015	.106	.053	.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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013		
3.0	.144	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010		
4.0	.134	.099	.072	.115	.085	.062	.079	.060	.044	.046	.035	.026	.015	.011	.009		
5.0	.126	.087	.059	.108	.076	.051	.074	.053	.036	.043	.031	.022	.014	.010	.007		
6.0	.118	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006		
7.0	.112	.071	.042	.096	.061	.036	.066	.043	.026	.039	.025	.015	.012	.008	.005		
8.0	.106	.064	.036	.091	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004		
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004		
10.0	.096	.055	.027	.083	.048	.024	.057	.033	.017	.034	.020	.010	.011	.006	.003		

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

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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz											
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655						Lamp Flux:1385.1x1 lm					
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D 13W						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		25.8	26.8	26.0	26.9	27.1	25.6	26.5	25.8	26.7	26.9
	3H	25.7	26.6	25.9	26.8	27.0	25.5	26.3	25.7	26.5	26.8
	4H	25.7	26.5	25.9	26.7	26.9	25.4	26.3	25.7	26.5	26.7
	6H	25.7	26.4	26.0	26.7	26.9	25.5	26.2	25.8	26.5	26.7
	8H	25.7	26.4	26.0	26.7	26.9	25.5	26.2	25.8	26.5	26.7
	12H	25.6	26.4	26.0	26.6	26.9	25.4	26.2	25.8	26.4	26.7
4H	2H	25.6	26.4	25.9	26.6	26.9	25.3	26.2	25.6	26.4	26.6
	3H	25.5	26.2	25.8	26.5	26.7	25.3	26.0	25.6	26.2	26.5
	4H	25.5	26.1	25.8	26.4	26.7	25.3	25.9	25.6	26.2	26.5
	6H	25.5	26.1	25.9	26.5	26.8	25.4	25.9	25.7	26.3	26.6
	8H	25.6	26.1	26.0	26.5	26.8	25.4	25.9	25.8	26.3	26.6
	12H	25.6	26.1	26.0	26.4	26.8	25.4	25.9	25.8	26.2	26.6
8H	4H	25.4	25.9	25.8	26.3	26.7	25.2	25.7	25.6	26.1	26.5
	6H	25.5	26.0	25.9	26.4	26.8	25.3	25.8	25.8	26.2	26.6
	8H	25.6	26.0	26.0	26.4	26.8	25.4	25.8	25.8	26.2	26.6
	12H	25.6	26.0	26.1	26.4	26.9	25.4	25.8	25.9	26.2	26.7
12H	4H	25.4	25.9	25.8	26.2	26.6	25.2	25.7	25.6	26.0	26.4
	6H	25.5	25.9	25.9	26.3	26.7	25.3	25.7	25.8	26.1	26.6
	8H	25.6	25.9	26.0	26.3	26.8	25.4	25.7	25.9	26.2	26.6
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 2.5 / - 6.2					+ 2.4 / - 6.0				
1.5H		+ 4.7 / - 6.1					+ 4.6 / - 5.8				
2.0H		+ 6.0 / - 2.3					+ 5.4 / - 2.0				

CIE Pub.117, 1385 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.1$)
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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz			UTHDi:0.16% ITHDi:18.89% KDisp:0.9655			Lamp Flux:1385.1x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D			13WTYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			Shielding Angle:		

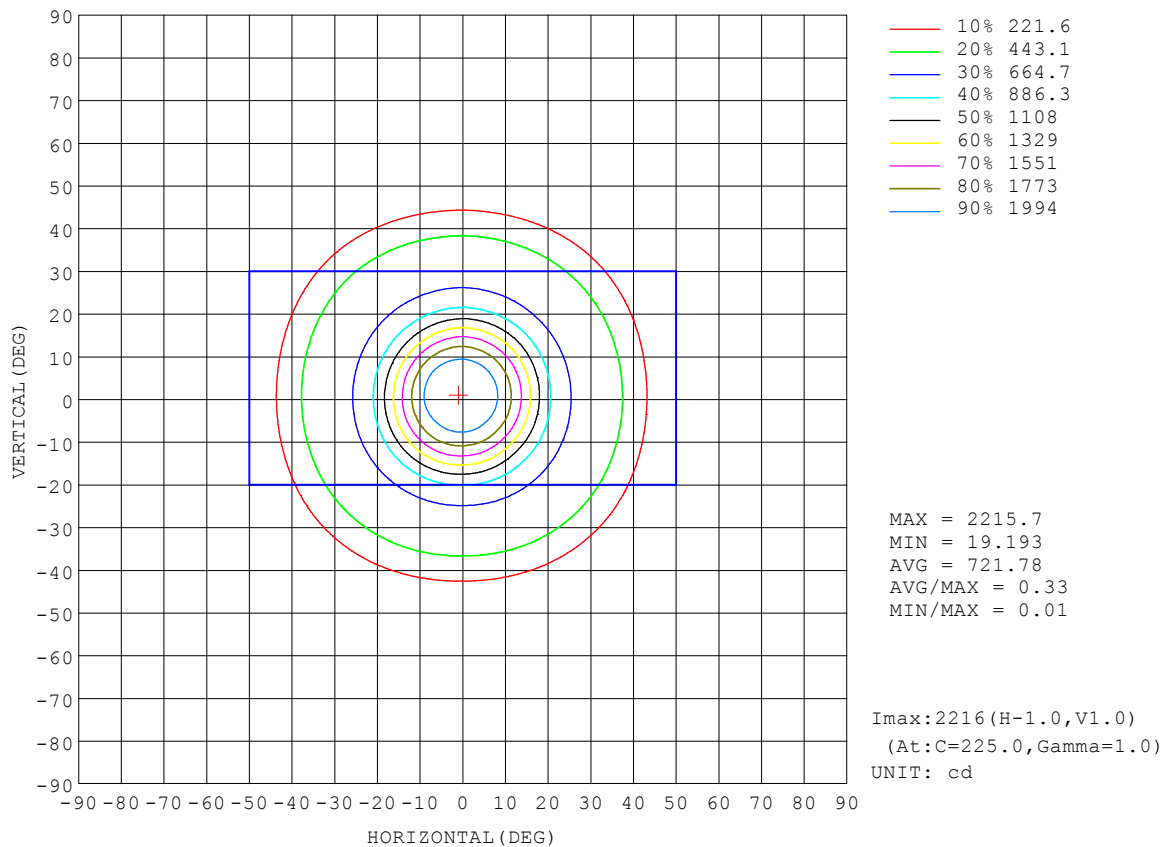
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	83	77	73	82	76	72	69
0.80	92	85	81	91	85	81	90	84	81	77
1.00	97	91	87	96	90	87	94	90	86	82
1.25	101	96	92	100	95	92	98	94	91	86
1.50	104	99	96	103	98	95	101	97	94	89
2.00	107	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	104	102	99	93
3.00	111	107	104	109	106	103	106	103	101	95
4.00	113	110	108	111	108	106	107	105	104	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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655		Lamp Flux:1385.1x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

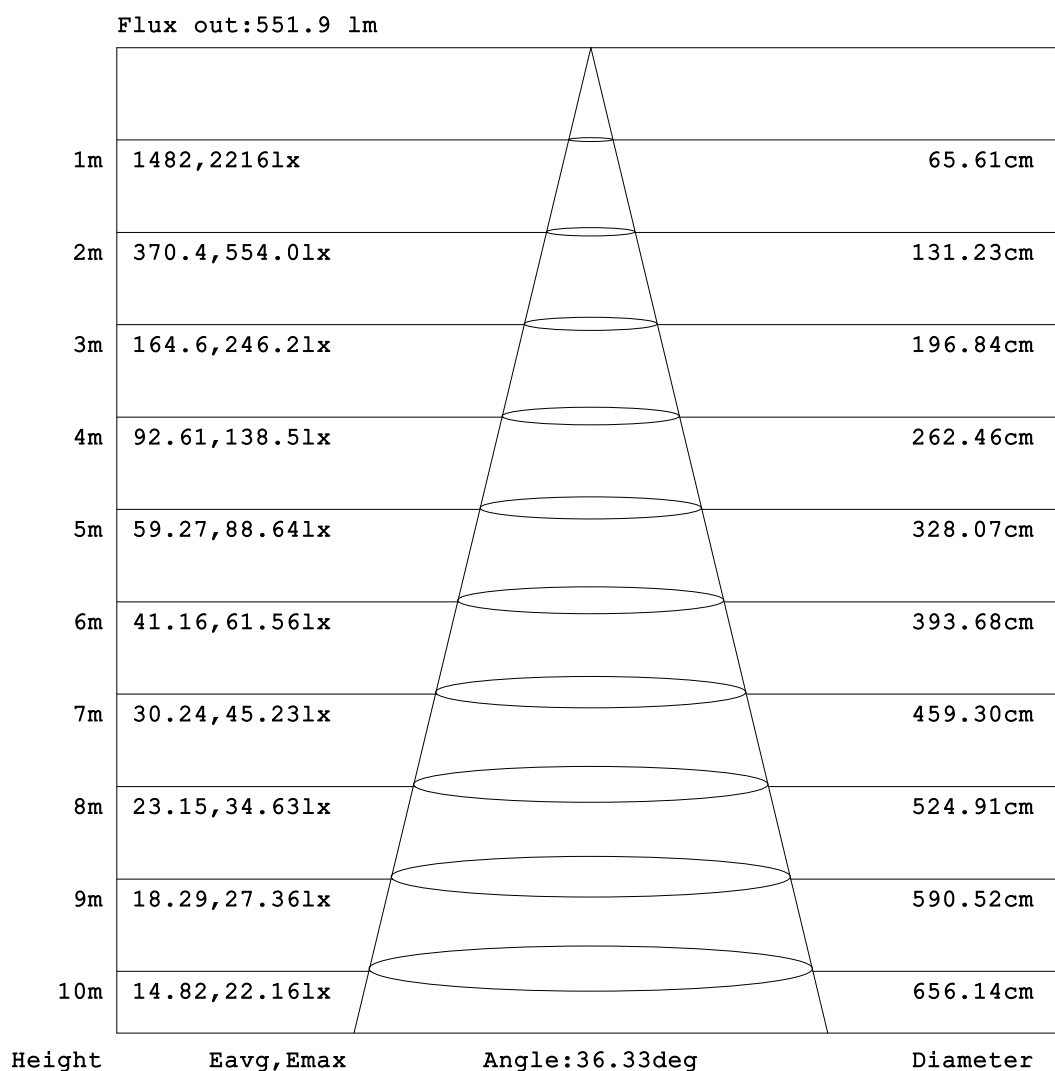


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655		Lamp Flux:1385.1x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



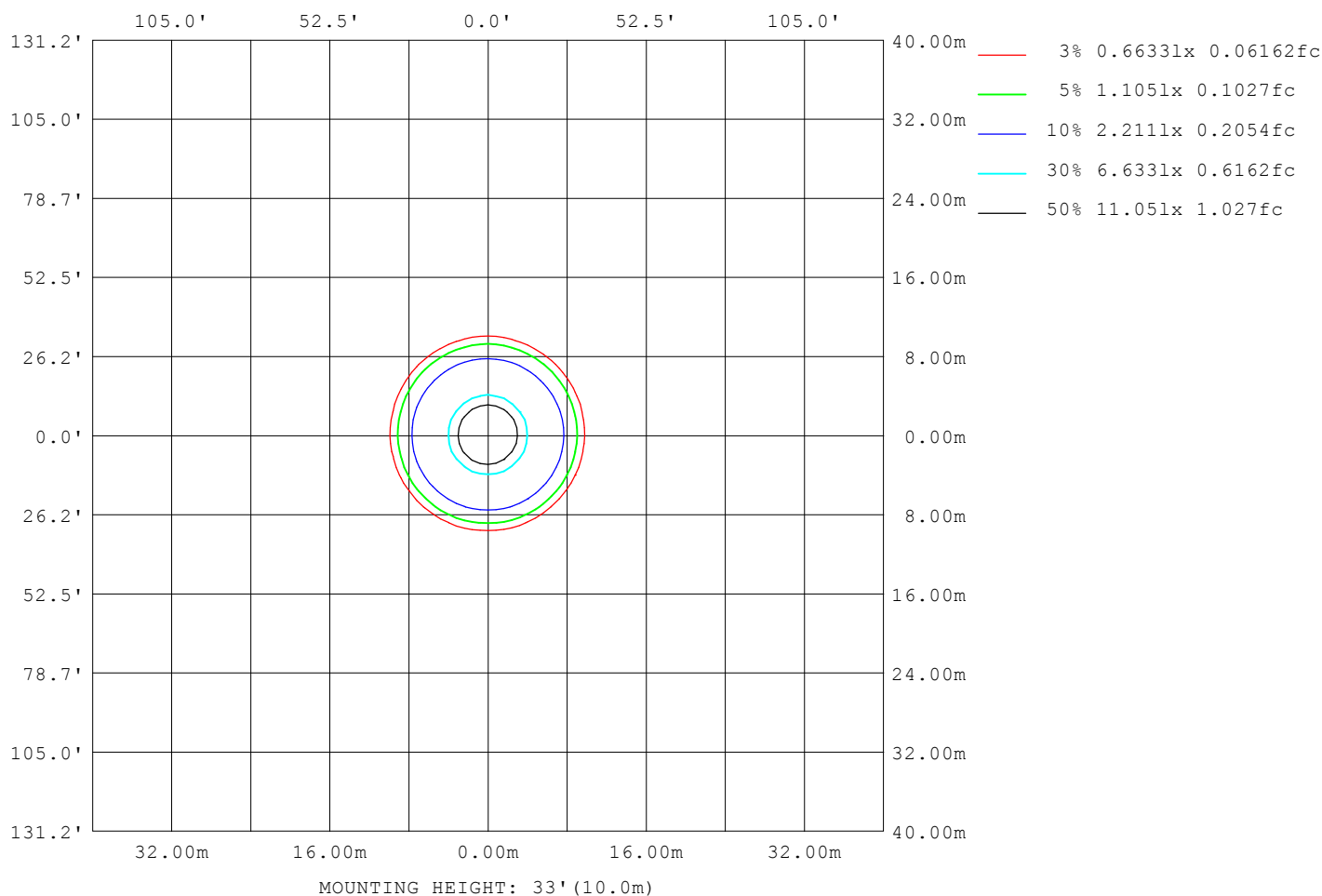
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655		Lamp Flux:1385.1x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13WTYPE:	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:0.0550A P:12.5W PF:0.9486 Freq:49.99Hz		
UTHDi:0.16% ITHDi:18.89% KDisp:0.9655 Lamp Flux:1385.1x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 38D	13WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

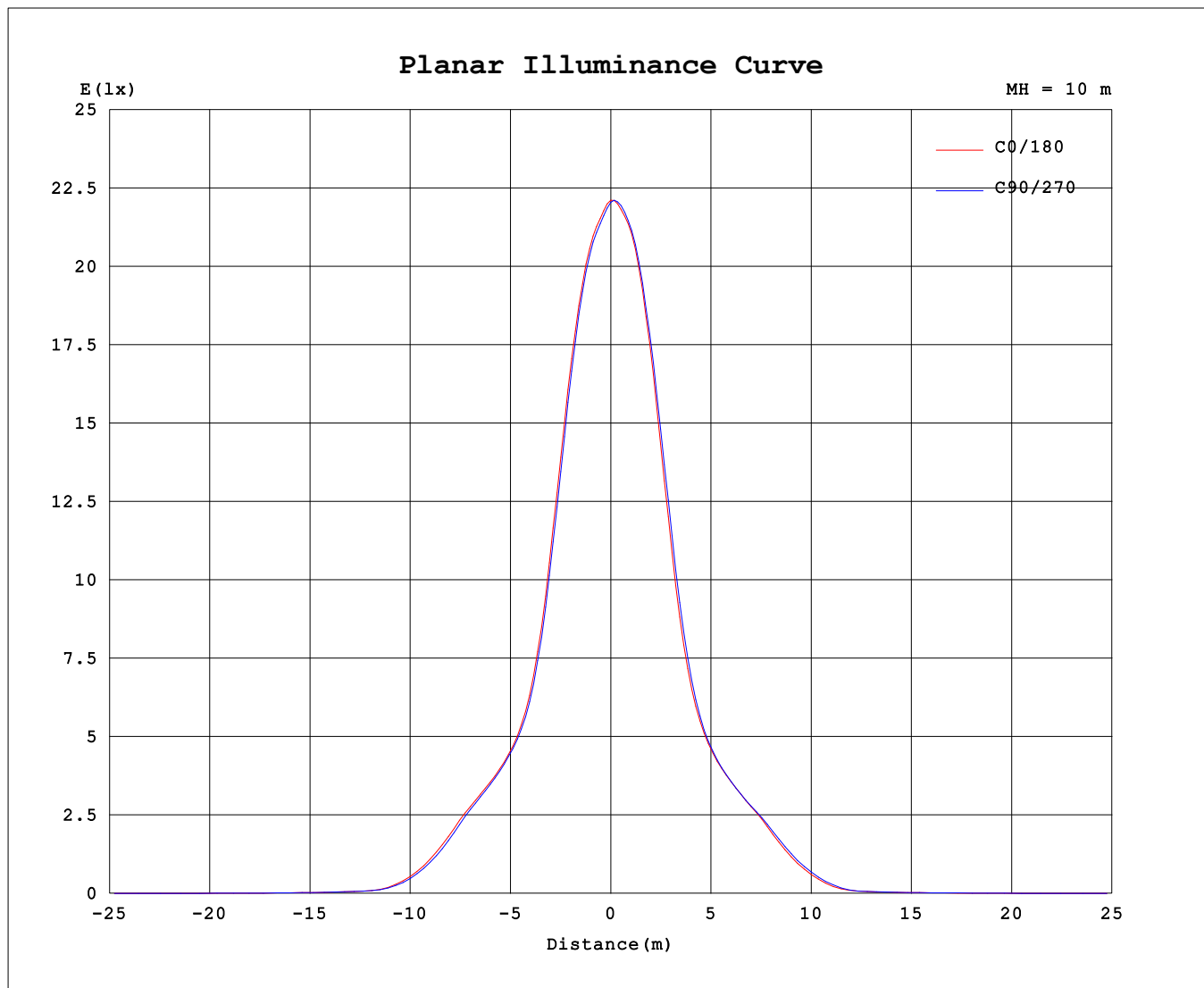
AvgL	cd/m2
L_0~180 (65) av	16326
L_0~180 (75) av	21721
L_0~180 (85) av	21974
L_90~270 (65) av	16940
L_90~270 (75) av	22616
L_90~270 (85) av	23196
L_45 (65) av	16811
L_45 (75) av	21680
L_45 (85) av	22427

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	2205	2205	2205	2205	2205	2205	2205	2205
3.0	2156	2146	2146	2161	2184	2202	2203	2178
6.0	2086	2067	2070	2094	2133	2160	2150	2119
9.0	1941	1910	1917	1947	1993	2030	2021	1992
12.0	1713	1664	1674	1724	1763	1801	1808	1774
15.0	1414	1357	1368	1425	1458	1495	1519	1486
18.0	1100	1054	1062	1113	1138	1166	1199	1172
21.0	852.2	831.4	822.5	856.5	879.4	904.5	924.1	898.7
24.0	704.7	696.9	689.1	705.1	720.1	731.3	742.0	719.3
27.0	626.2	621.5	617.9	626.0	631.6	637.5	642.1	630.9
30.0	576.8	570.9	567.7	574.6	578.9	580.8	583.7	577.0
33.0	535.3	526.9	523.1	529.6	535.2	535.4	537.0	533.0
36.0	484.5	468.5	464.8	475.1	486.9	492.1	492.9	487.2
39.0	386.5	364.1	359.8	378.6	400.2	420.7	421.0	404.3
42.0	267.5	244.1	243.1	260.2	285.3	307.0	309.8	290.3
45.0	153.8	135.4	136.2	149.4	170.5	190.9	195.2	174.3
48.0	65.61	56.55	58.23	64.83	74.79	90.63	91.57	81.49
51.0	32.61	31.60	32.51	31.97	31.01	32.07	32.11	31.00
54.0	23.95	23.33	23.89	23.67	22.42	23.24	23.31	23.23
57.0	18.11	17.18	17.62	17.79	17.45	18.26	18.71	18.64
60.0	13.95	13.03	13.54	13.86	13.48	14.04	14.60	14.73
63.0	10.58	10.07	10.45	10.55	10.13	10.53	11.09	11.31
66.0	8.668	8.390	8.567	8.639	8.187	8.437	8.911	9.178
69.0	7.424	7.294	7.666	7.452	6.960	7.012	7.477	7.708
72.0	7.098	7.014	8.058	7.350	6.593	6.229	6.696	7.415
75.0	7.551	7.308	8.182	7.706	7.066	6.492	7.037	7.672
78.0	6.999	6.642	7.089	7.228	6.681	6.463	6.787	6.967
81.0	5.332	4.963	5.017	5.376	5.073	5.018	5.318	5.274
84.0	3.271	3.128	3.097	3.219	2.946	2.983	3.220	3.272
87.0	0.8851	0.7552	0.7166	0.7557	0.9346	1.133	1.257	1.129
90.0	0.0548	0.0449	0.0595	0.0471	0.0487	0.0472	0.0569	0.0471

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: