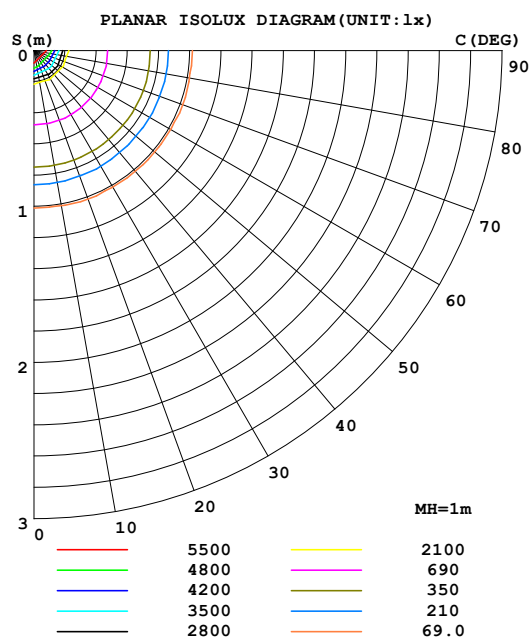
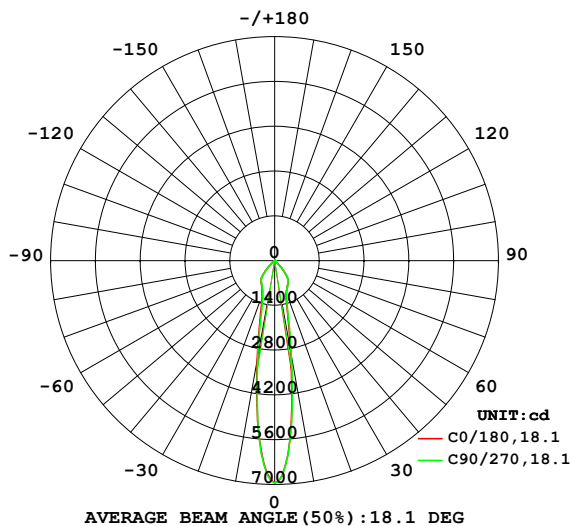


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.4V I:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 111.95 lm/W
MODEL		I _{max} (cd)	6945	S/MH(C0/180)	0.32	
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.31	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2018.8	η UP,DN(C0-180)	0.0,49.7	
NOMINAL FLUX(lm)	2018.79	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.3	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	240.38	η down (%)	100.0	CIBSE SHR MAX	0.30	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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	2889	2914	3047	3119	3202	3159	3057	2969	0- 10	445.1	445.1	22,22
20	1078	1088	1099	1117	1147	1128	1093	1069	10- 20	470.2	915.3	45.3,45.3
30	830.5	832.6	827.8	826.9	835.8	821.4	821.5	817.2	20- 30	433.0	1348	66.8,66.8
40	510.9	511.8	521.6	552.2	558.3	559.1	546.7	517.6	30- 40	447.9	1796	89,89
50	35.70	38.95	36.50	40.48	38.01	34.94	35.57	33.55	40- 50	185.6	1982	98.2,98.2
60	11.92	11.94	11.13	10.78	10.79	10.39	10.94	11.42	50- 60	16.32	1998	99,99
70	9.081	8.744	8.444	7.855	7.529	7.361	7.799	8.733	60- 70	9.405	2008	99.4,99.4
80	7.113	6.859	6.683	5.704	5.087	4.792	5.563	6.662	70- 80	7.484	2015	99.8,99.8
90	0.0739	0.0551	0.0831	0.0648	0.0710	0.0702	0.0802	0.0593	80- 90	3.801	2019	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): 1936.2 lm

%lum = 95.9%

%lamp = 95.9%

Conical surface Flux(120deg): 1998.1 lm

%lum = 99.0%

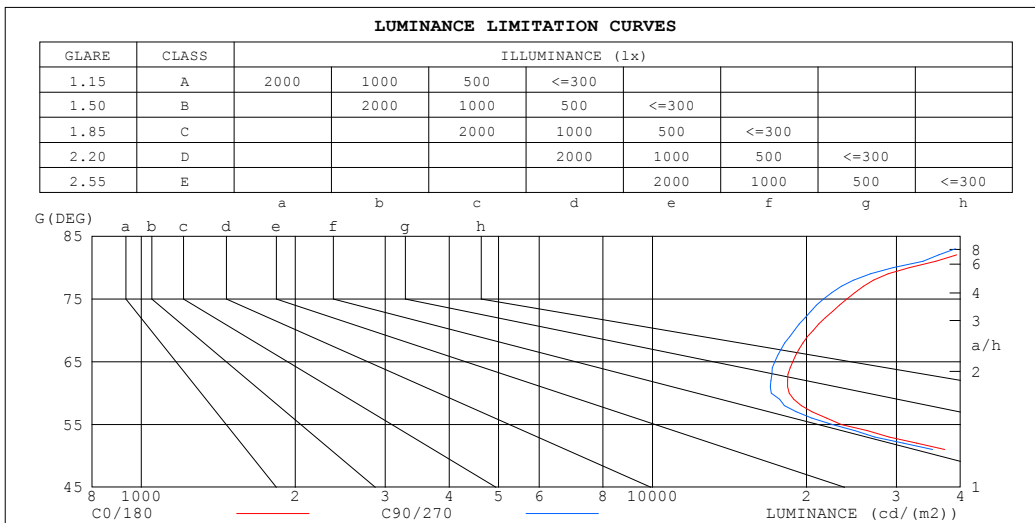
%lamp = 99.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: MEDIUM
 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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz			Lamp Flux:2018.79x1 lm		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866					
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D			18WTYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: Norming lighting			SUR.: 41mm		Shielding Angle:



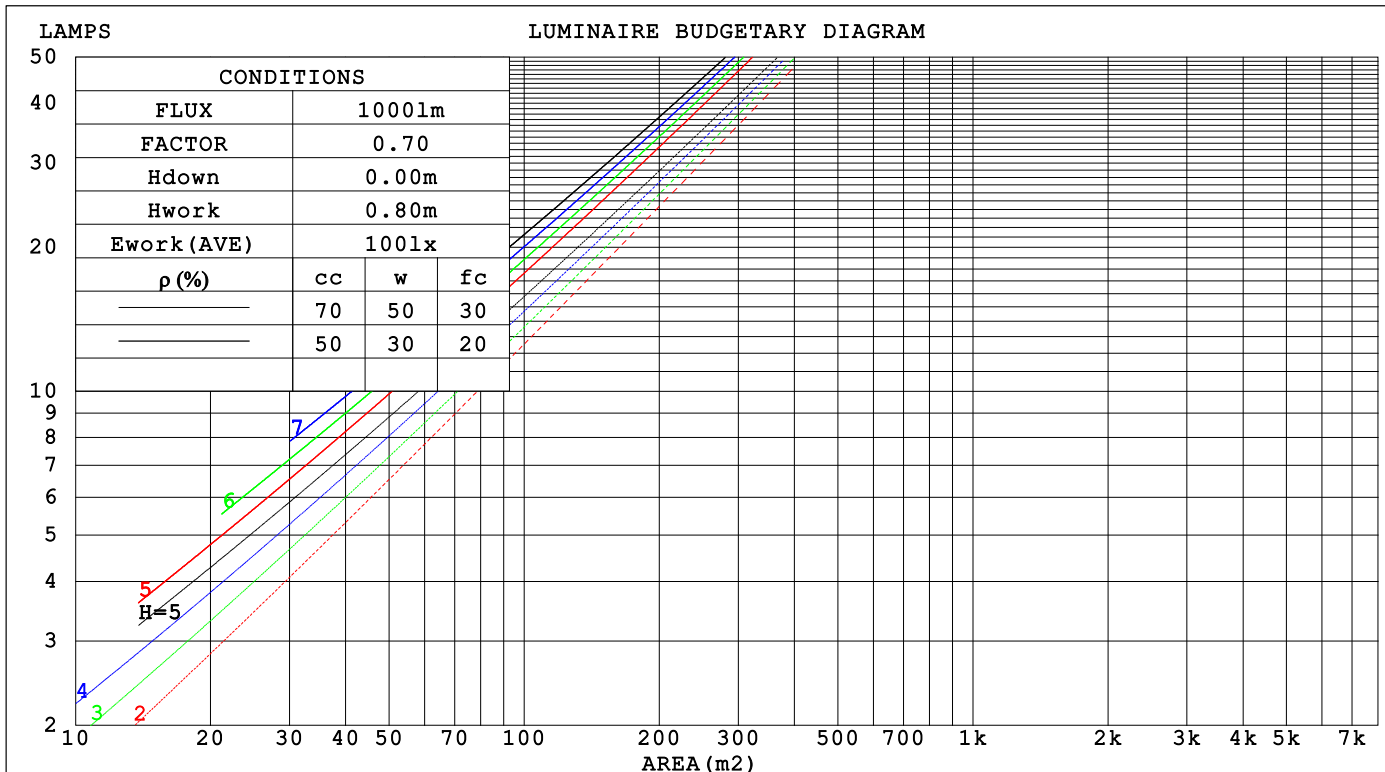
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-10-18

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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D	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: MEDIUM
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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.03% KDisp:0.9866			Lamp Flux:2018.79x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D			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	.175	.100	.032	.168	.096	.031	.156	.089	.029	.144	.083	.027	.134	.077	.025		
2.0	.167	.091	.028	.161	.089	.027	.151	.084	.026	.141	.079	.025	.132	.075	.024		
3.0	.158	.084	.025	.154	.082	.025	.145	.078	.024	.136	.075	.023	.129	.071	.022		
4.0	.150	.078	.023	.146	.076	.023	.138	.073	.022	.131	.070	.021	.125	.068	.021		
5.0	.143	.073	.021	.139	.071	.021	.132	.069	.020	.126	.067	.020	.120	.064	.019		
6.0	.136	.068	.019	.133	.067	.019	.127	.065	.019	.121	.063	.019	.116	.061	.018		
7.0	.129	.064	.018	.127	.063	.018	.121	.061	.018	.116	.060	.017	.112	.058	.017		
8.0	.123	.060	.017	.121	.060	.017	.116	.058	.017	.112	.057	.016	.108	.055	.016		
9.0	.118	.057	.016	.116	.056	.016	.112	.055	.016	.108	.054	.015	.104	.053	.015		
10.0	.113	.054	.015	.111	.054	.015	.107	.052	.015	.104	.051	.015	.100	.050	.014		

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	.133	.114	.098	.091	.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	.132	.099	.073	.114	.085	.063	.078	.059	.045	.045	.035	.026	.015	.011	.009		
5.0	.124	.087	.060	.106	.075	.052	.073	.053	.037	.042	.031	.022	.014	.010	.007		
6.0	.116	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006		
7.0	.109	.070	.043	.094	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005		
8.0	.103	.064	.037	.089	.055	.032	.062	.039	.023	.036	.023	.014	.012	.008	.004		
9.0	.098	.058	.032	.084	.051	.028	.058	.036	.020	.034	.021	.012	.011	.007	.004		
10.0	.093	.054	.028	.080	.047	.024	.056	.033	.017	.033	.020	.010	.011	.006	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz UTHDi:0.17% ITHDi:18.03% KDisp:0.9866Lamp Flux:2018.79x1 lm										
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D 18W						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	27.2	28.1	27.4	28.3	28.4	27.2	28.1	27.4	28.3	28.4
3H	27.0	27.9	27.3	28.1	28.3	27.0	27.9	27.3	28.1	28.3
4H	27.0	27.8	27.3	28.0	28.2	27.0	27.8	27.3	28.0	28.2
6H	26.9	27.7	27.2	27.9	28.2	26.9	27.7	27.2	27.9	28.2
8H	26.9	27.7	27.3	27.9	28.2	26.9	27.7	27.2	27.9	28.2
12H	27.0	27.6	27.3	27.9	28.2	26.9	27.6	27.3	27.9	28.2
4H 2H	26.9	27.7	27.2	27.9	28.2	26.9	27.7	27.2	28.0	28.2
3H	26.8	27.5	27.1	27.8	28.0	26.8	27.5	27.1	27.8	28.0
4H	26.8	27.4	27.1	27.7	28.0	26.8	27.4	27.1	27.7	28.0
6H	26.8	27.3	27.1	27.6	28.0	26.7	27.3	27.1	27.6	28.0
8H	26.8	27.3	27.2	27.7	28.0	26.8	27.3	27.2	27.6	28.0
12H	26.8	27.3	27.3	27.7	28.1	26.8	27.3	27.2	27.6	28.0
8H 4H	26.7	27.2	27.0	27.5	27.9	26.6	27.2	27.0	27.5	27.9
6H	26.7	27.1	27.1	27.5	27.9	26.7	27.1	27.1	27.5	27.9
8H	26.8	27.1	27.2	27.6	28.0	26.7	27.1	27.2	27.5	28.0
12H	26.9	27.2	27.3	27.6	28.1	26.8	27.1	27.3	27.6	28.1
12H 4H	26.6	27.1	27.0	27.5	27.8	26.6	27.1	27.0	27.4	27.8
6H	26.7	27.0	27.1	27.5	27.9	26.7	27.0	27.1	27.4	27.9
8H	26.8	27.1	27.2	27.5	28.0	26.7	27.1	27.2	27.5	28.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 7.6					+ 2.5 / - 7.8				
1.5H	+ 4.8 / - 7.6					+ 4.7 / - 7.8				
2.0H	+ 6.5 / - 2.5					+ 6.7 / - 2.8				

CIE Pub.117, 2019 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.4$)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.03% KDisp:0.9866			Lamp Flux:2018.79x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D			18WTYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			Shielding Angle:		

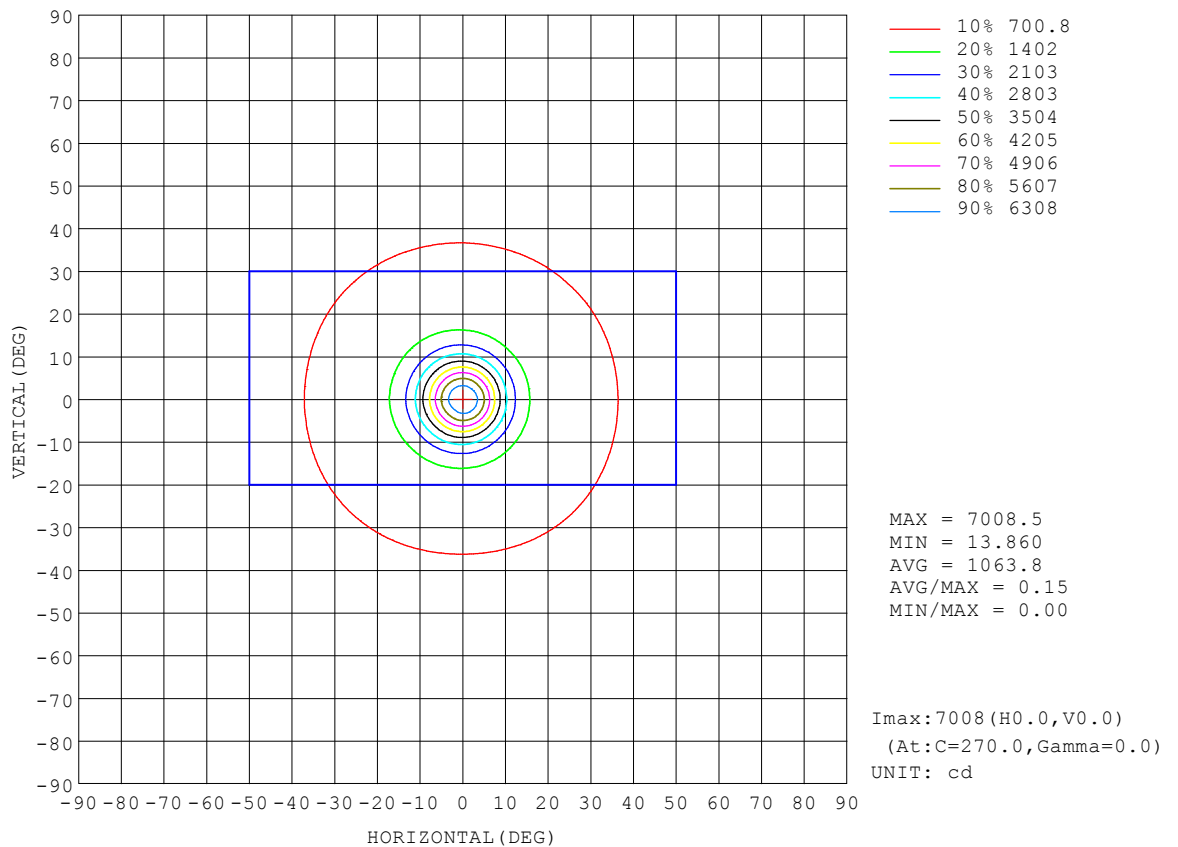
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	77	74	70
0.80	93	86	82	92	86	82	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	92	87
1.50	105	100	96	104	99	96	101	98	95	90
2.00	108	103	100	106	102	99	104	100	98	92
2.50	110	106	102	108	104	101	105	102	100	94
3.00	111	108	105	109	106	104	106	104	101	95
4.00	113	110	108	111	109	107	108	106	104	97
5.00	115	112	110	112	110	109	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: MEDIUM
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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

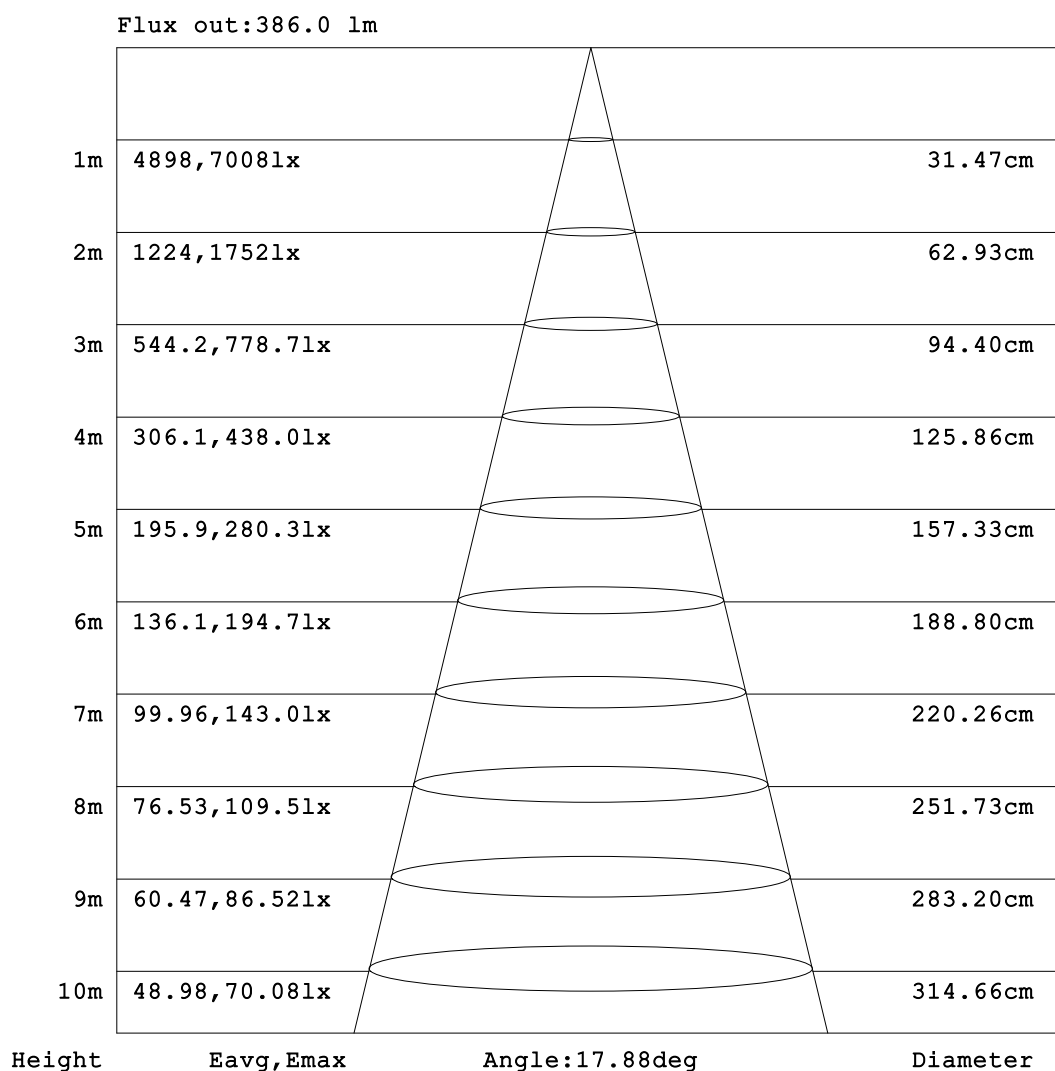


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D	18W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



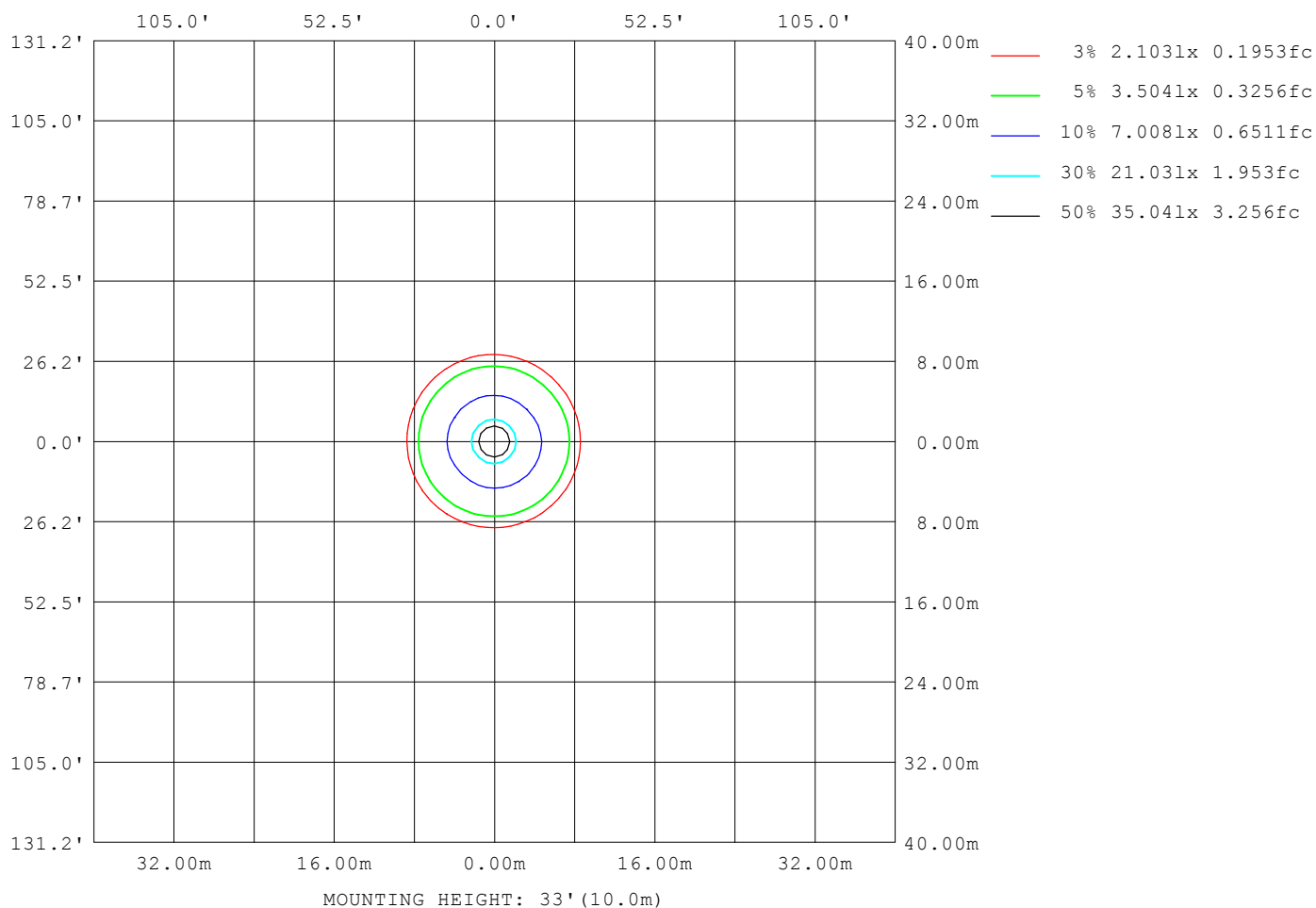
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D	18WTYPE:	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: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:0.0772A P:18.0W PF:0.9712 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.03% KDisp:0.9866		Lamp Flux:2018.79x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 15D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

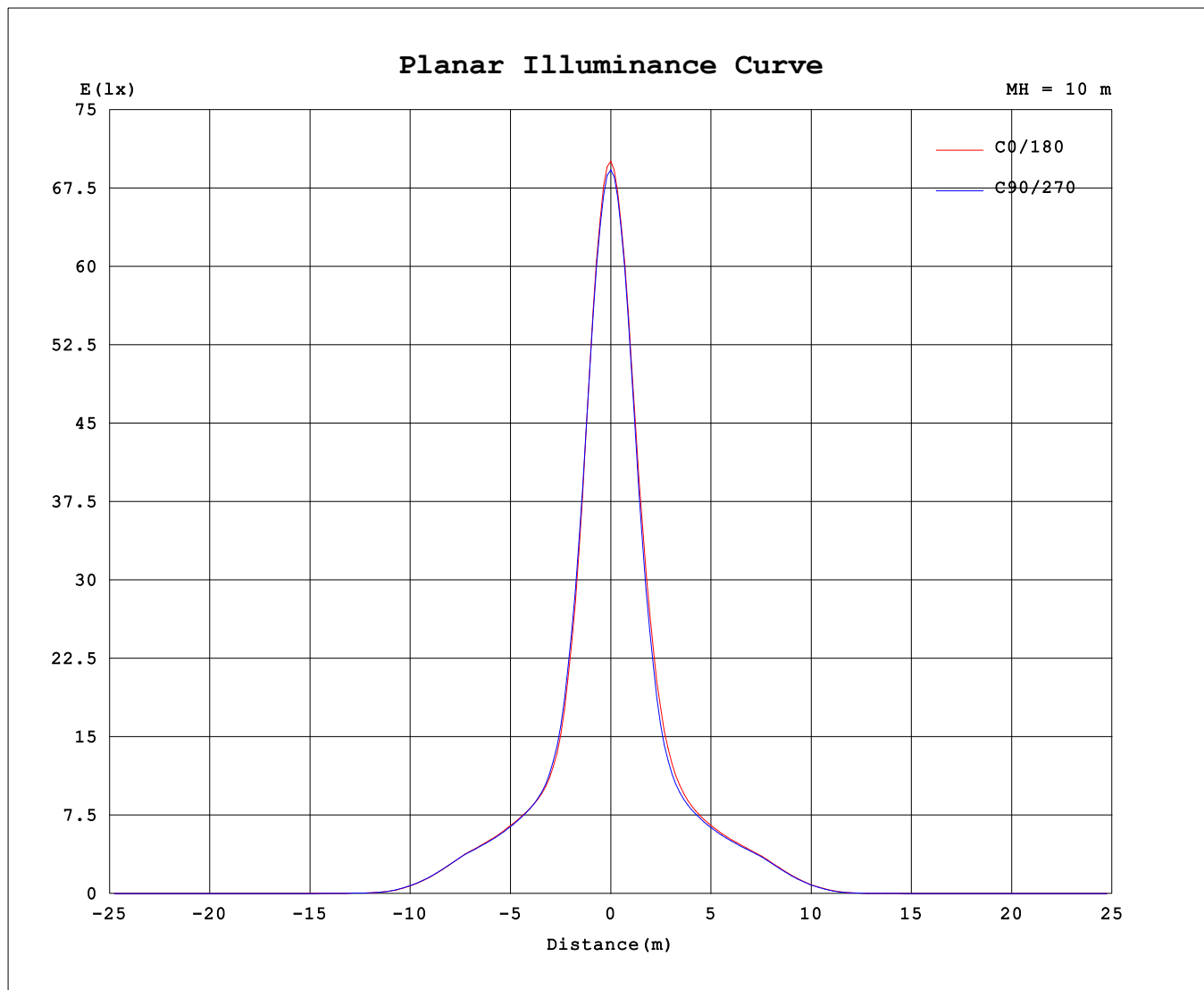
AvgL	cd/m2
L_0~180 (65) av	17253
L_0~180 (75) av	21398
L_0~180 (85) av	36663
L_90~270 (65) av	16962
L_90~270 (75) av	20784
L_90~270 (85) av	37382
L_45 (65) av	17098
L_45 (75) av	21014
L_45 (85) av	36452

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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: MEDIUM
 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	6945	6945	6945	6945	6945	6945	6945	6945
3.0	6427	6442	6441	6397	6376	6379	6408	6430
6.0	5050	5075	5096	5108	5080	5062	5072	5071
9.0	3341	3368	3491	3549	3619	3575	3491	3416
12.0	2179	2202	2316	2406	2471	2430	2329	2238
15.0	1478	1507	1573	1644	1708	1668	1582	1510
18.0	1179	1196	1222	1261	1304	1278	1222	1182
21.0	1041	1050	1055	1066	1089	1073	1047	1029
24.0	960.6	966.4	963.8	960.0	973.2	962.8	950.7	946.0
27.0	893.5	895.2	890.7	886.7	896.2	884.7	879.7	877.3
30.0	830.5	832.6	827.8	826.9	835.8	821.4	821.5	817.2
33.0	773.1	775.2	773.0	777.3	784.2	770.4	772.3	765.8
36.0	710.0	712.0	712.3	724.3	726.2	717.4	720.3	706.8
39.0	569.1	570.3	579.5	606.9	612.3	612.8	603.4	574.9
42.0	387.9	388.2	399.4	429.7	435.4	436.2	424.2	392.7
45.0	207.8	212.7	219.1	245.4	244.8	248.6	238.7	212.4
48.0	73.32	75.15	81.01	95.40	95.99	94.94	88.26	74.83
51.0	30.22	32.29	28.97	28.97	26.77	25.67	26.39	27.75
54.0	19.93	20.69	19.07	17.80	17.36	16.20	17.18	17.89
57.0	14.39	14.53	13.56	13.00	13.13	12.38	13.19	13.51
60.0	11.92	11.94	11.13	10.78	10.79	10.39	10.94	11.42
63.0	10.76	10.67	10.13	9.675	9.394	9.224	9.675	10.40
66.0	9.979	9.710	9.321	8.771	8.440	8.364	8.797	9.663
69.0	9.280	8.962	8.670	8.063	7.737	7.609	8.046	8.972
72.0	8.672	8.339	8.010	7.458	7.113	6.931	7.377	8.325
75.0	7.997	7.685	7.288	6.809	6.402	6.194	6.698	7.595
78.0	7.243	6.989	6.700	6.120	5.574	5.382	6.007	6.910
81.0	7.224	7.048	6.896	5.679	4.991	4.620	5.498	6.749
84.0	5.991	5.838	5.618	4.840	4.029	3.713	4.556	5.611
87.0	1.871	1.686	1.605	1.497	1.240	1.154	1.579	1.755
90.0	0.0739	0.0551	0.0831	0.0648	0.0710	0.0702	0.0802	0.0593

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: MEDIUM
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: