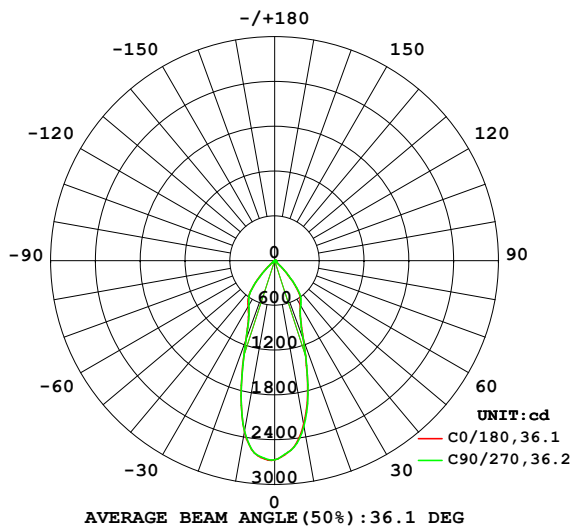


LUMINAIRE PHOTOMETRIC TEST REPORT

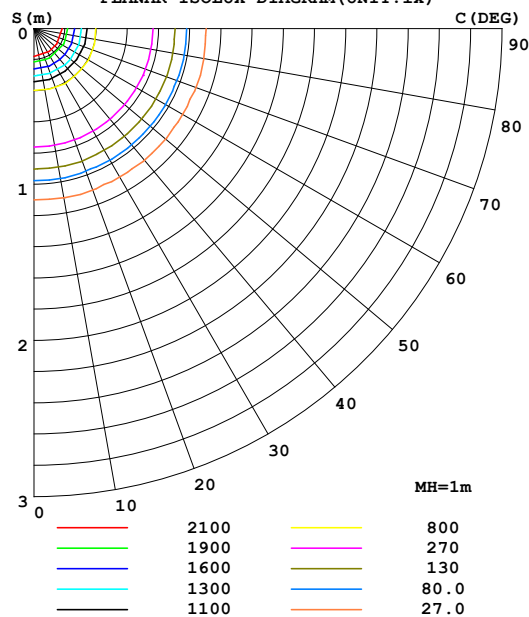
Test:U:240.4V I:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 113.71 lm/W
MODEL		Imax (cd)	2679	S/MH(C0/180)	0.60	
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	0.60	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1669.2	η UP,DN(C0-180)	0.0,49.9	
NOMINAL FLUX(lm)	1669.16	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	240.39	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:2024-10-18

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	2236	2238	2258	2291	2330	2338	2322	2289	0- 10	237.6	237.6	14.2,14.2
20	1133	1147	1129	1130	1132	1129	1126	1113	10- 20	468.8	706.5	42.3,42.3
30	690.4	691.2	699.7	709.4	710.5	696.4	696.8	691.0	20- 30	388.7	1095	65.6,65.6
40	415.4	411.2	422.6	433.2	444.3	429.1	434.6	425.0	30- 40	368.6	1464	87.7,87.7
50	43.99	48.46	49.79	46.32	47.90	39.49	42.43	42.90	40- 50	153.8	1618	96.9,96.9
60	19.25	20.75	19.73	17.74	16.89	17.02	16.86	17.58	50- 60	25.52	1643	98.4,98.4
70	10.22	11.61	10.91	9.322	8.800	8.571	8.351	8.662	60- 70	12.65	1656	99.2,99.2
80	8.533	9.212	8.949	7.510	6.924	6.601	6.536	6.973	70- 80	9.736	1665	99.8,99.8
90	0.0712	0.0552	0.0708	0.0589	0.0715	0.0745	0.0820	0.0628	80- 90	3.722	1669	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): 1576.4 lm

%lum = 94.4%

%lamp = 94.4%

Conical surface Flux(120deg): 1643.1 lm

%lum = 98.4%

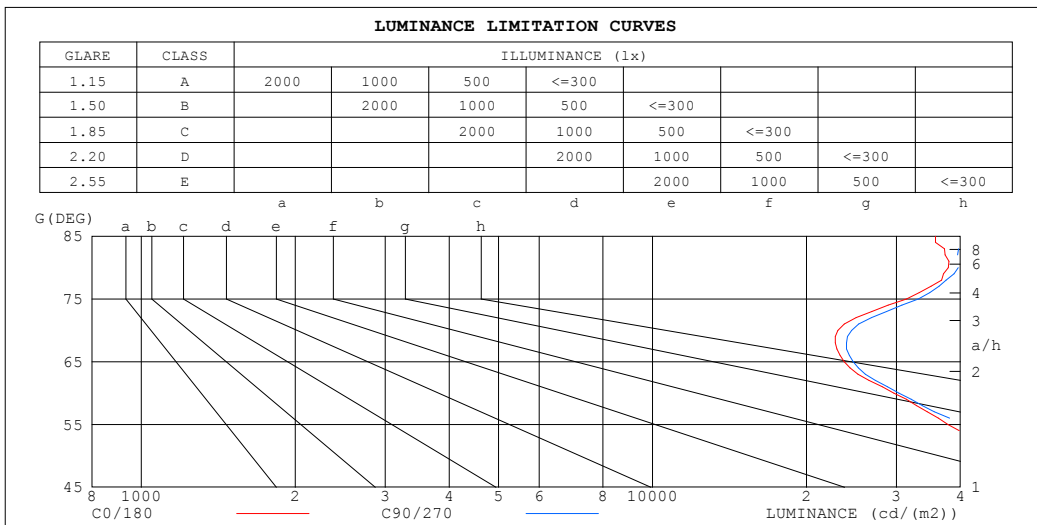
%lamp = 98.4%

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			Lamp Flux:1669.16x1 lm		
UTHDi:0.18% ITHDi:17.48% KDisp:0.9773					
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D			15WTYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: Norming lighting			SUR.: 41mm		Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	35773	40150
80	37885	39601
75	31351	33086
70	23042	24521
65	23724	24693
60	29677	30329
55	37851	40634
50	52758	59526
45	195408	201625

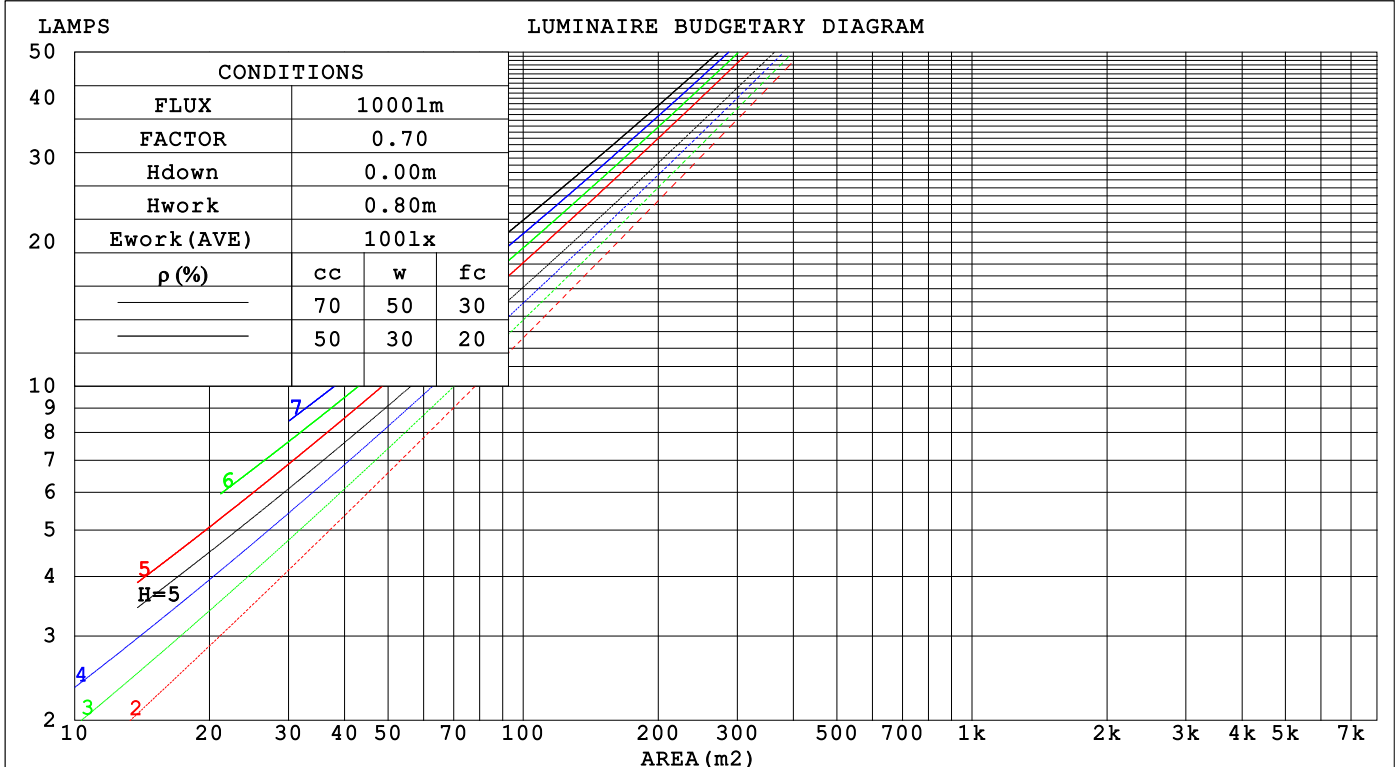
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.18% ITHDi:17.48% KDisp:0.9773		
Lamp Flux:1669.16x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



WEC AND CCEC

Test:U:240.4V I:0.0634A P:14.7W PF:0.9626 Freq:49.99Hz			UTHDi:0.18% ITHDi:17.48% KDisp:0.9773			Lamp Flux:1669.16x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D			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	.184	.104	.033	.177	.101	.032	.164	.094	.030	.153	.088	.028	.142	.082	.027		
2.0	.175	.096	.029	.170	.093	.029	.159	.088	.027	.149	.084	.026	.140	.079	.025		
3.0	.166	.089	.027	.162	.087	.026	.153	.083	.025	.144	.079	.024	.136	.075	.023		
4.0	.158	.082	.024	.154	.081	.024	.146	.077	.023	.139	.075	.022	.132	.072	.022		
5.0	.150	.077	.022	.147	.075	.022	.140	.073	.021	.133	.070	.021	.127	.068	.020		
6.0	.143	.072	.021	.140	.071	.020	.134	.069	.020	.128	.067	.020	.123	.065	.019		
7.0	.136	.067	.019	.133	.066	.019	.128	.065	.019	.123	.063	.018	.118	.061	.018		
8.0	.130	.064	.018	.128	.063	.018	.123	.061	.018	.118	.060	.017	.114	.059	.017		
9.0	.124	.060	.017	.122	.059	.017	.118	.058	.017	.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	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010		
4.0	.134	.099	.072	.115	.086	.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	.007	.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:0.18% ITHDi:17.48% KDisp:0.9773Lamp Flux:1669.16x1 lm										
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D 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	26.6	27.5	26.8	27.7	27.9	26.7	27.6	26.9	27.8	28.0
3H	26.5	27.4	26.7	27.6	27.8	26.6	27.4	26.8	27.6	27.9
4H	26.5	27.3	26.7	27.5	27.8	26.6	27.4	26.8	27.6	27.8
6H	26.5	27.3	26.8	27.5	27.8	26.6	27.4	26.9	27.6	27.9
8H	26.5	27.3	26.8	27.5	27.8	26.6	27.4	26.9	27.6	27.9
12H	26.5	27.2	26.8	27.5	27.8	26.6	27.4	26.9	27.6	27.9
4H 2H	26.4	27.2	26.6	27.4	27.6	26.4	27.3	26.7	27.5	27.7
3H	26.3	27.0	26.6	27.3	27.6	26.4	27.1	26.7	27.4	27.7
4H	26.3	27.0	26.7	27.3	27.6	26.4	27.1	26.8	27.4	27.7
6H	26.5	27.1	26.8	27.4	27.7	26.6	27.1	26.9	27.5	27.8
8H	26.5	27.1	26.9	27.4	27.8	26.6	27.2	27.0	27.5	27.9
12H	26.6	27.1	27.0	27.4	27.8	26.7	27.2	27.1	27.5	27.9
8H 4H	26.3	26.8	26.7	27.2	27.6	26.4	26.9	26.8	27.3	27.6
6H	26.5	27.0	26.9	27.3	27.8	26.6	27.0	27.0	27.4	27.9
8H	26.6	27.0	27.1	27.4	27.9	26.7	27.1	27.2	27.5	28.0
12H	26.7	27.0	27.2	27.5	28.0	26.8	27.2	27.3	27.6	28.1
12H 4H	26.3	26.8	26.7	27.1	27.5	26.4	26.9	26.8	27.2	27.6
6H	26.5	26.9	27.0	27.3	27.8	26.6	27.0	27.0	27.4	27.9
8H	26.6	27.0	27.1	27.4	27.9	26.7	27.1	27.2	27.5	28.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.2 / - 5.1					+ 2.3 / - 5.0				
1.5H	+ 4.3 / - 5.0					+ 4.3 / - 4.9				
2.0H	+ 5.0 / - 1.6					+ 5.0 / - 1.6				

CIE Pub.117, 1669 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 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:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

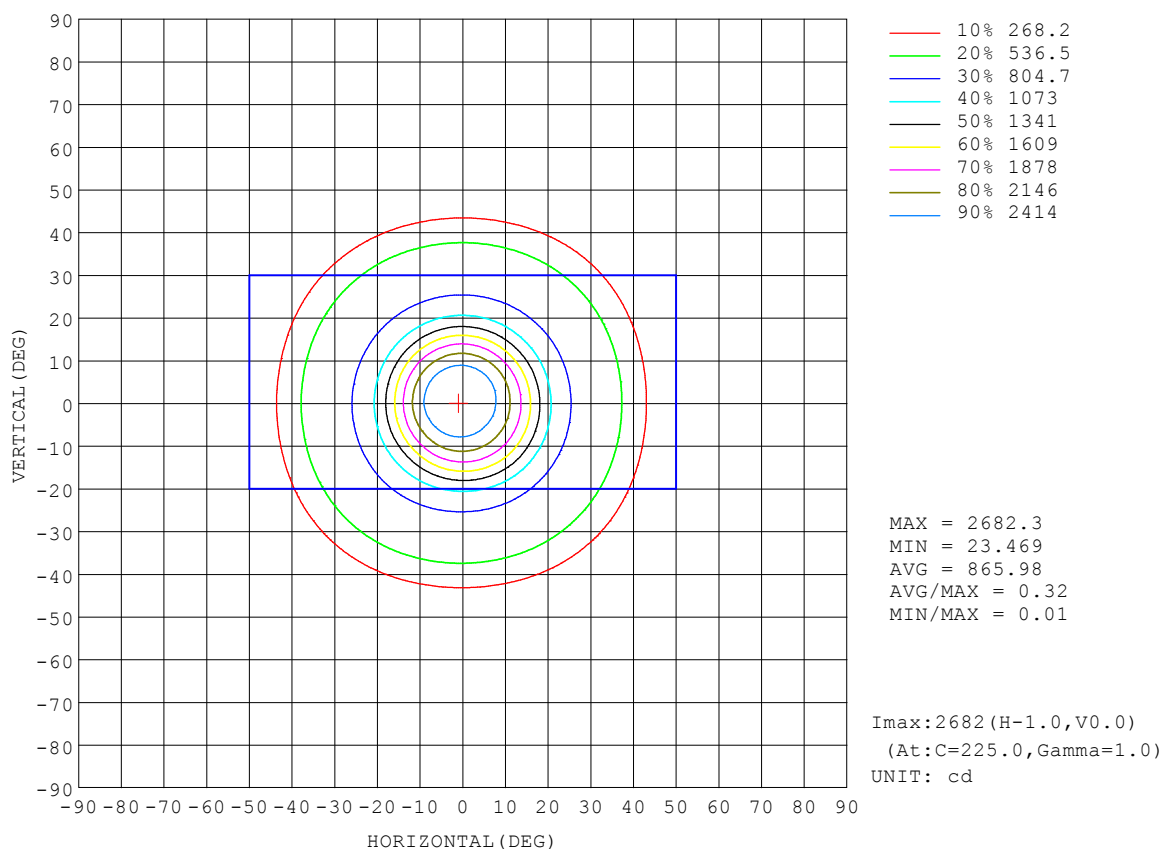
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	83	77	73	82	76	72	69
0.80	92	85	81	91	85	81	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	99	106	102	99	103	100	97	92
2.50	109	105	102	108	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	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: 2024-10-18

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:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

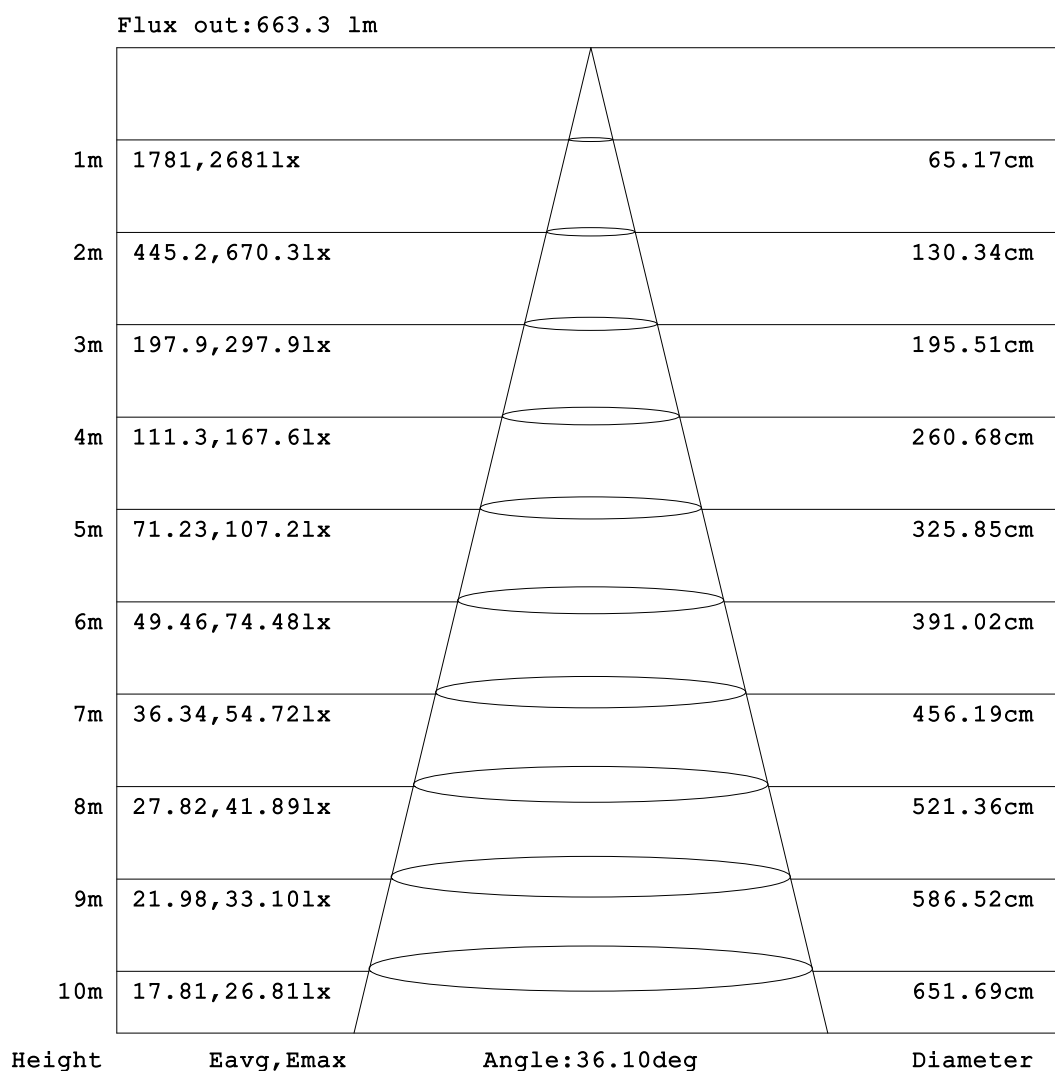


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-18

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:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



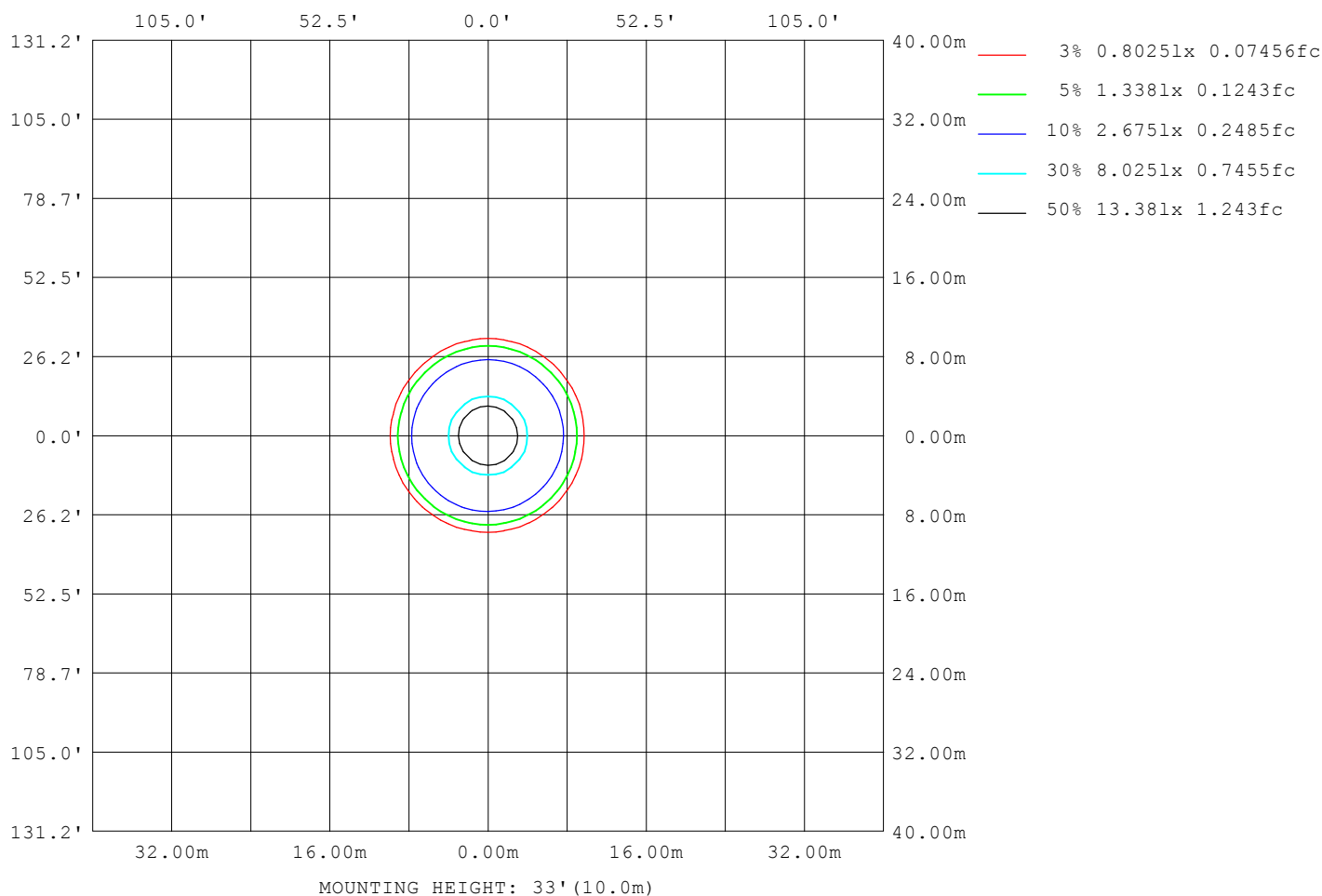
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	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:0.18% ITHDi:17.48% KDisp:0.9773		Lamp Flux:1669.16x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 4000K RA90 38D	15WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

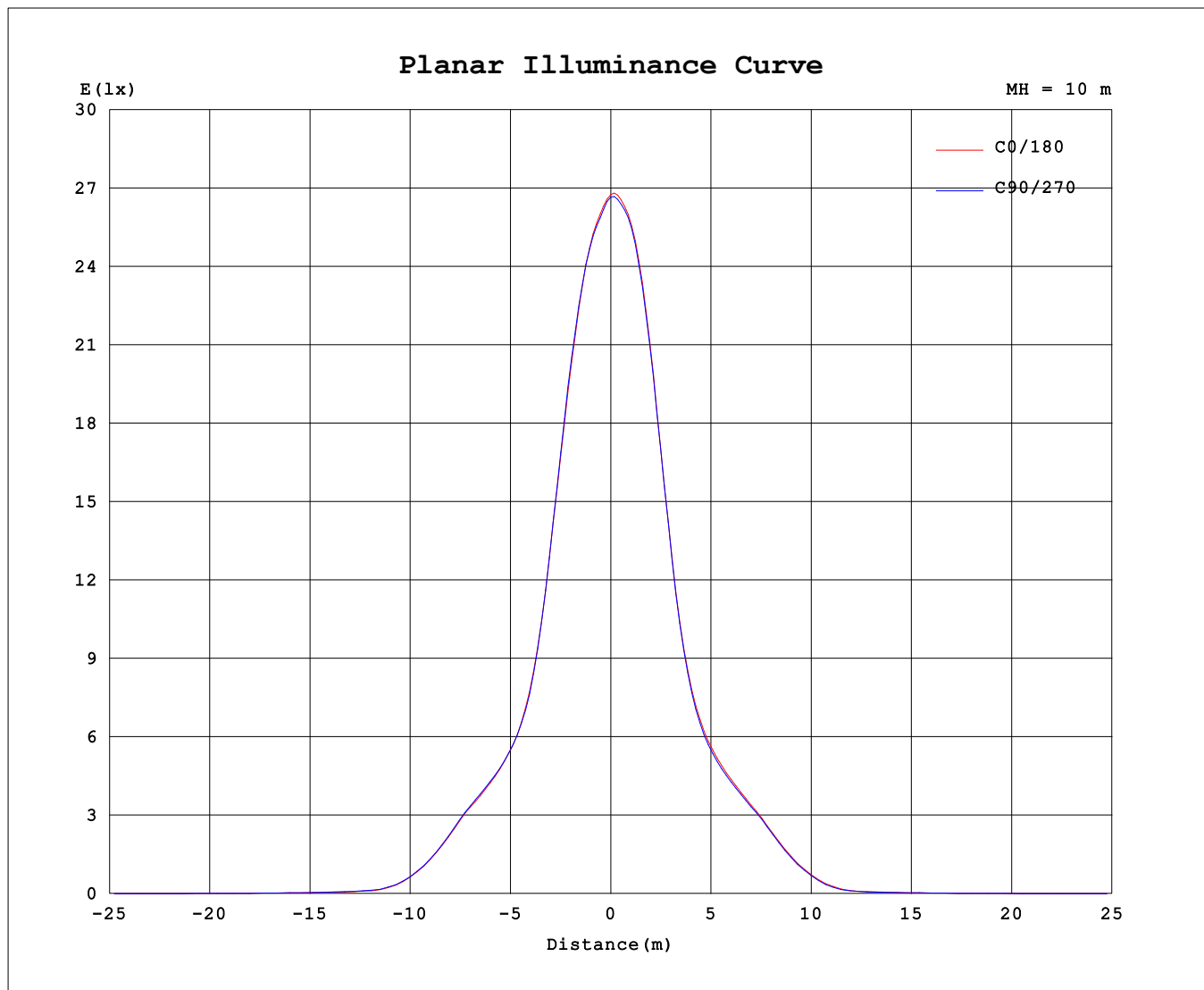
AvgL	cd/m2
L_0~180 (65) av	22100
L_0~180 (75) av	29346
L_0~180 (85) av	30249
L_90~270 (65) av	22417
L_90~270 (75) av	28794
L_90~270 (85) av	31027
L_45 (65) av	22411
L_45 (75) av	28157
L_45 (85) av	30853

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	2669	2669	2669	2669	2669	2669	2669	2669
3.0	2606	2593	2600	2633	2659	2664	2652	2624
6.0	2508	2486	2512	2559	2592	2600	2590	2559
9.0	2319	2315	2338	2375	2418	2425	2410	2375
12.0	2049	2058	2075	2087	2117	2128	2115	2085
15.0	1714	1736	1729	1714	1730	1747	1734	1712
18.0	1346	1374	1352	1332	1342	1349	1341	1327
21.0	1045	1050	1039	1047	1048	1041	1041	1029
24.0	856.6	853.7	855.8	871.9	873.0	861.2	857.5	851.9
27.0	755.2	756.0	760.5	772.2	774.1	760.9	758.1	754.4
30.0	690.4	691.2	699.7	709.4	710.5	696.4	696.8	691.0
33.0	636.8	636.2	648.9	658.5	657.0	642.3	644.8	637.9
36.0	579.5	577.4	588.7	596.0	594.9	582.3	586.4	581.2
39.0	462.8	458.6	470.8	480.3	489.5	476.8	481.7	471.5
42.0	318.0	315.5	325.1	333.5	347.7	328.8	337.2	328.2
45.0	179.2	181.7	185.5	191.6	206.2	184.2	196.2	188.0
48.0	79.72	77.34	84.71	80.52	91.34	77.21	81.01	83.21
51.0	39.95	43.81	44.68	41.14	38.96	35.07	36.32	38.02
54.0	30.35	33.01	33.20	30.64	28.51	27.09	27.31	28.94
57.0	24.32	25.84	25.21	23.06	22.09	21.66	21.61	22.67
60.0	19.25	20.75	19.73	17.74	16.89	17.02	16.86	17.58
63.0	14.86	16.26	15.41	13.63	12.99	13.12	12.80	13.26
66.0	12.27	13.65	12.85	11.31	10.60	10.58	10.33	10.73
69.0	10.59	11.86	11.22	9.717	9.063	8.954	8.731	9.047
72.0	10.02	11.60	10.78	8.768	8.831	8.229	7.962	8.313
75.0	10.53	11.84	11.14	8.831	9.223	8.495	8.232	8.731
78.0	9.914	10.73	10.14	8.647	8.481	7.923	7.800	8.283
81.0	7.715	8.361	8.155	6.970	6.241	5.881	5.870	6.317
84.0	4.851	5.760	5.485	4.544	3.666	3.322	3.237	3.679
87.0	1.821	2.180	1.955	1.487	1.033	0.6900	0.7982	1.171
90.0	0.0712	0.0552	0.0708	0.0589	0.0715	0.0745	0.0820	0.0628

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: