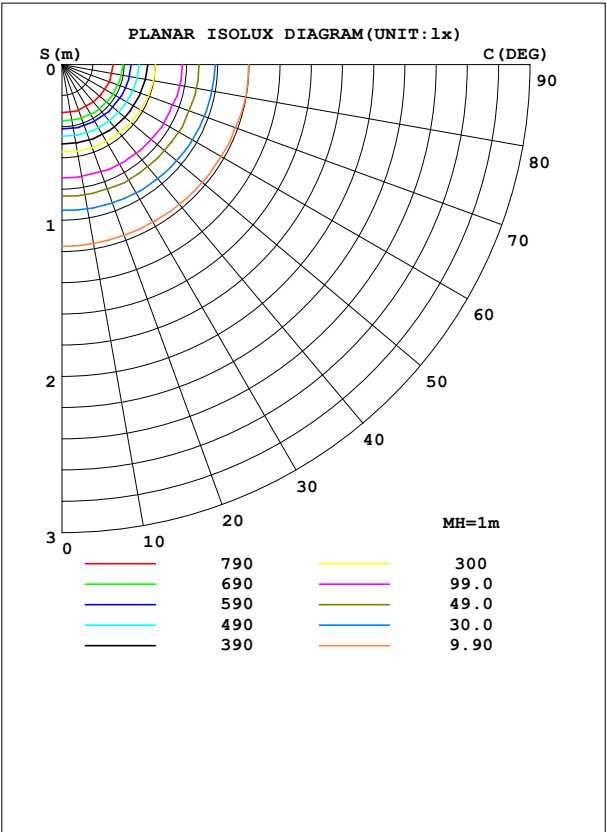
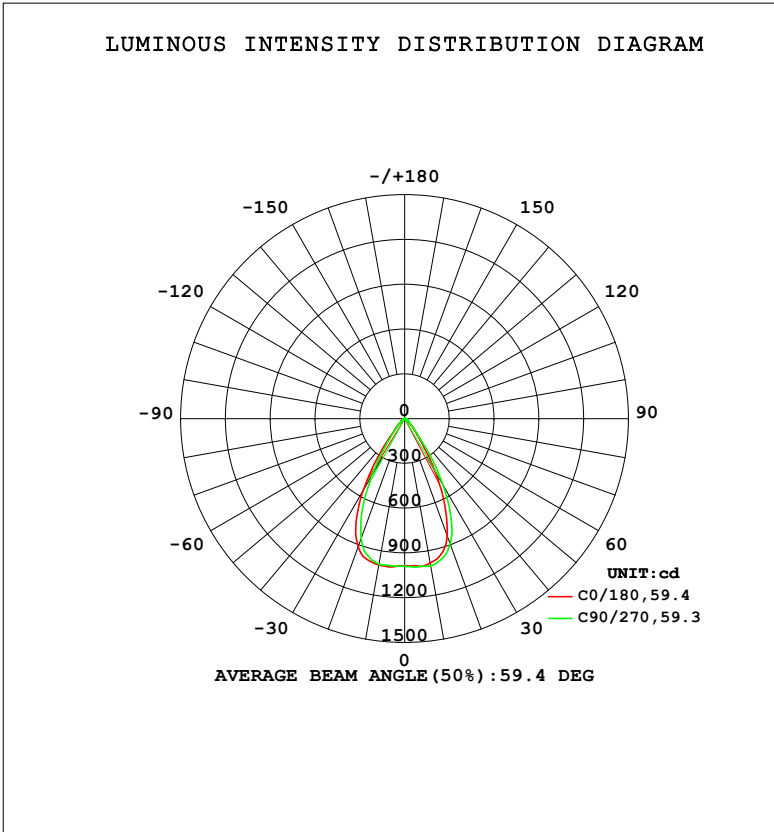


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.4V I:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 77.70 lm/W
MODEL		Imax (cd)	1002	S/MH (C0/180)	0.91	
NOMINAL POWER(W)	12	LOR (%)	100.0	S/MH (C90/270)	0.85	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	947.39	η UP,DN (C0-180)	0.0,50.5	
NOMINAL FLUX(lm)	947.393	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,49.5	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75	
TEST VOLTAGE (V)	240.37	η down (%)	100.0	CIBSE SHR MAX	0.90	



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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	982.9	998.4	1002	996.0	996.3	990.6	990.2	987.2	0- 10	94.78	94.78	10,10
20	833.3	860.8	893.1	911.5	911.3	887.4	853.9	826.5	10- 20	267.9	362.6	38.3,38.3
30	413.8	454.9	521.8	563.0	559.2	498.6	440.2	400.6	20- 30	316.2	678.8	71.6,71.6
40	108.5	118.9	128.6	143.3	132.6	117.7	109.9	106.7	30- 40	167.7	846.5	89.4,89.4
50	34.20	35.21	37.45	38.90	37.25	34.69	34.11	33.42	40- 50	52.40	898.9	94.9,94.9
60	18.39	19.48	20.81	22.25	21.49	19.29	18.06	17.75	50- 60	24.31	923.2	97.4,97.4
70	10.99	11.97	12.97	13.57	12.76	11.60	10.78	9.840	60- 70	15.40	938.6	99.1,99.1
80	1.427	2.282	3.795	4.994	4.662	3.228	1.973	1.293	70- 80	7.928	946.5	99.9,99.9
90	0.0372	0.0295	0.0344	0.0452	0.0426	0.0292	0.0402	0.0390	80- 90	0.8557	947.4	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): 880.01 lm

%lum = 92.9%

%lamp = 92.9%

Conical surface Flux(120deg): 923.21 lm

%lum = 97.4%

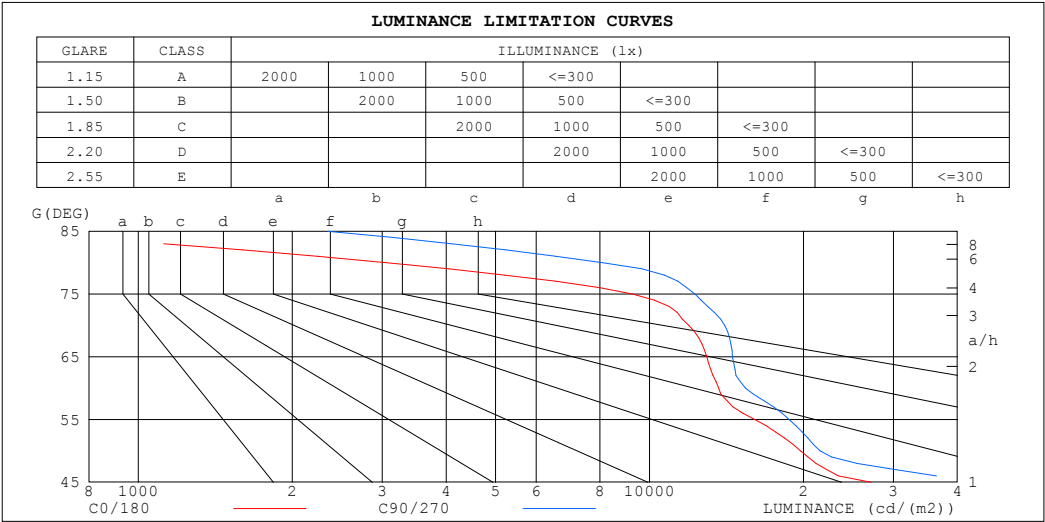
%lamp = 97.4%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	495	2346
80	3050	8087
75	9257	12265
70	11936	14028
65	12936	14534
60	13654	15404
55	16061	18760
50	19755	21557
45	27104	40744

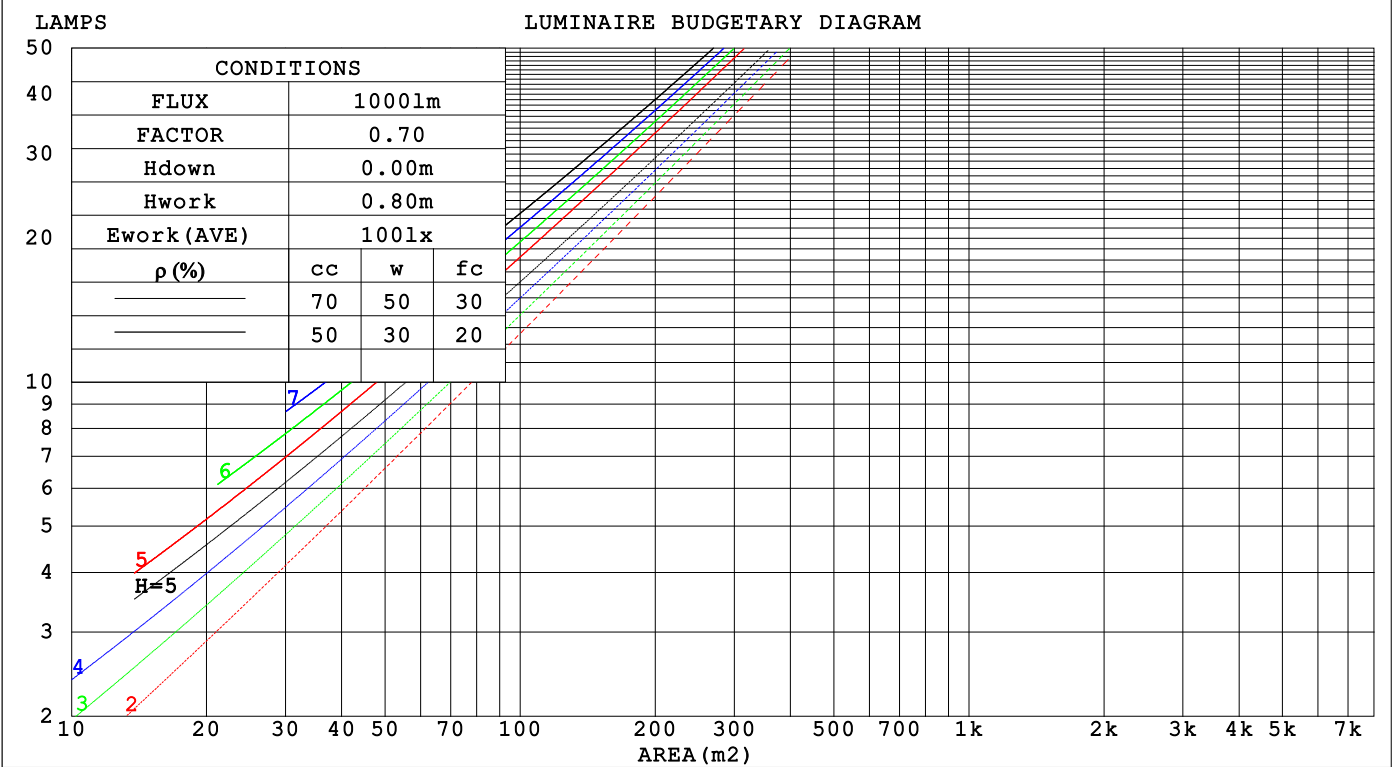
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDI:0.17% ITHDI:18.10% KDisp:0.9650		
Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	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:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650		Lamp Flux:947.393x1 lm
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	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	.187	.106	.034	.180	.103	.033	.167	.096	.031	.156	.090	.029	.145	.084	.027															
2.0	.179	.098	.030	.173	.095	.029	.162	.090	.028	.152	.085	.027	.143	.081	.026															
3.0	.169	.090	.027	.165	.088	.027	.155	.084	.026	.147	.081	.025	.139	.077	.024															
4.0	.161	.083	.025	.156	.082	.024	.149	.079	.024	.141	.076	.023	.134	.073	.022															
5.0	.153	.078	.023	.149	.076	.022	.142	.074	.022	.136	.072	.021	.130	.069	.021															
6.0	.145	.073	.021	.142	.072	.021	.136	.070	.020	.130	.068	.020	.125	.066	.020															
7.0	.138	.068	.019	.135	.067	.019	.130	.066	.019	.125	.064	.019	.120	.062	.018															
8.0	.132	.064	.018	.129	.064	.018	.125	.062	.018	.120	.061	.018	.116	.059	.017															
9.0	.126	.061	.017	.124	.060	.017	.120	.059	.017	.116	.058	.017	.112	.057	.016															
10.0	.121	.058	.016	.119	.057	.016	.115	.056	.016	.111	.055	.016	.108	.054	.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	.157	.132	.112	.135	.114	.097	.092	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.072	.116	.086	.062	.080	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.109	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.071	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.113	.071	.041	.097	.061	.036	.067	.043	.026	.039	.025	.015	.013	.008	.005	
8.0	.107	.065	.036	.092	.056	.031	.064	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.102	.059	.031	.088	.052	.027	.061	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.097	.055	.027	.084	.048	.024	.058	.034	.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:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm										
NAME: TR01-12-XX-01 4000K RA90 60D WHITE					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Norming lighting					SUR.: 57mm			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	19.9	20.9	20.1	21.1	21.2	20.9	21.9	21.1	22.1	22.2
3H	20.2	21.1	20.5	21.3	21.6	21.2	22.1	21.5	22.3	22.5
4H	20.4	21.2	20.6	21.4	21.7	21.3	22.2	21.6	22.4	22.6
6H	20.3	21.1	20.6	21.4	21.6	21.4	22.2	21.7	22.4	22.7
8H	20.3	21.1	20.6	21.3	21.6	21.4	22.1	21.7	22.4	22.7
12H	20.2	21.0	20.6	21.2	21.5	21.3	22.1	21.6	22.3	22.6
4H 2H	19.9	20.8	20.2	21.0	21.2	20.9	21.7	21.1	21.9	22.2
3H	20.4	21.2	20.8	21.4	21.7	21.3	22.0	21.6	22.3	22.6
4H	20.6	21.3	21.0	21.6	21.9	21.5	22.2	21.9	22.5	22.8
6H	20.6	21.2	21.0	21.5	21.9	21.6	22.2	22.0	22.5	22.9
8H	20.6	21.1	21.0	21.5	21.8	21.6	22.1	22.0	22.5	22.9
12H	20.5	21.0	20.9	21.4	21.8	21.6	22.1	22.0	22.4	22.8
8H 4H	20.6	21.2	21.0	21.5	21.9	21.5	22.0	21.9	22.4	22.8
6H	20.6	21.1	21.1	21.5	21.9	21.6	22.1	22.1	22.5	22.9
8H	20.6	21.0	21.0	21.4	21.9	21.6	22.0	22.1	22.4	22.9
12H	20.5	20.9	21.0	21.3	21.8	21.6	21.9	22.0	22.3	22.8
12H 4H	20.6	21.1	21.0	21.5	21.9	21.5	22.0	21.9	22.3	22.7
6H	20.6	21.0	21.1	21.4	21.9	21.6	22.0	22.0	22.4	22.8
8H	20.6	20.9	21.0	21.3	21.8	21.6	21.9	22.0	22.3	22.8
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.4 / - 2.0					+ 2.1 / - 2.0				
1.5H	+ 2.8 / - 1.6					+ 3.6 / - 1.8				
2.0H	+ 1.4 / - 1.0					+ 2.8 / - 1.0				

CIE Pub.117, 947.4 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = -0.2$)
Area: 0.0027 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

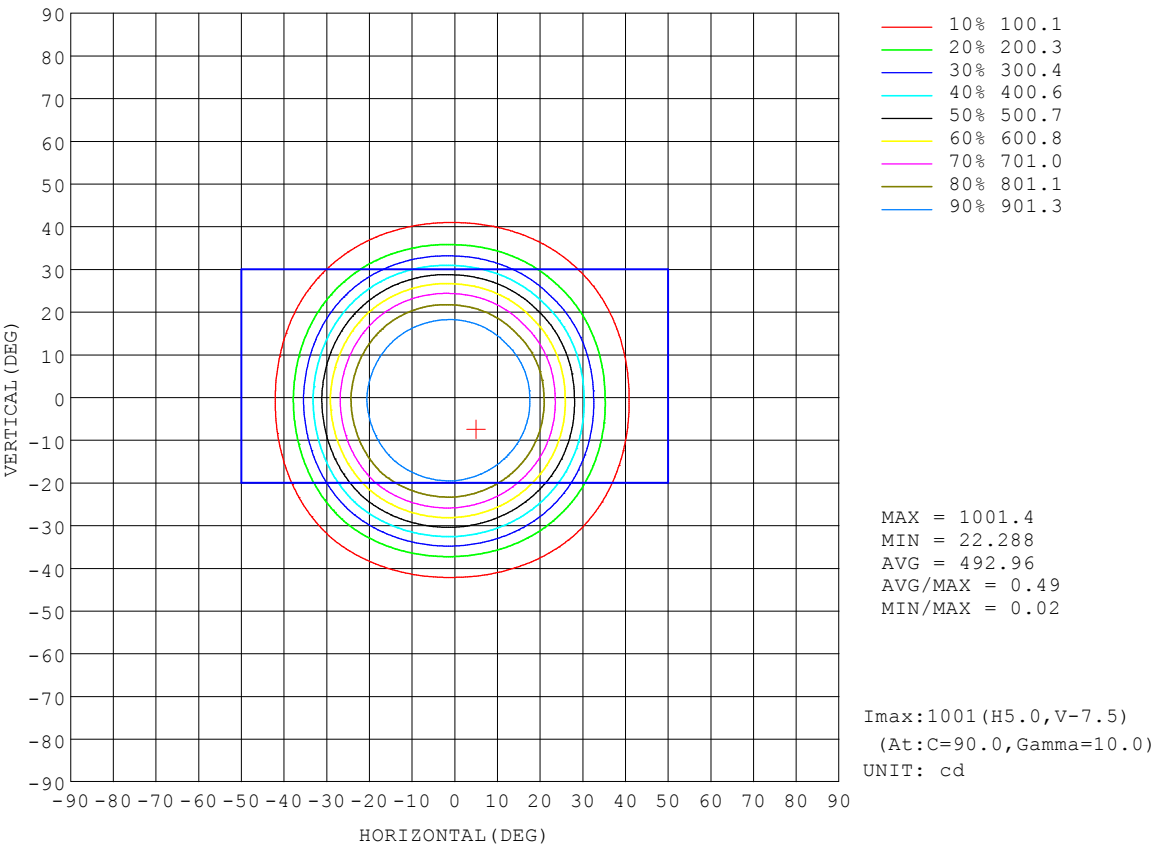
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	84	78	74	70
0.80	93	86	82	92	86	82	91	85	82	78
1.00	97	91	87	96	91	87	95	91	87	82
1.25	102	96	92	101	95	92	99	94	91	87
1.50	105	99	96	103	99	95	101	97	94	89
2.00	108	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	104	109	106	103	106	103	101	95
4.00	113	110	108	111	109	106	108	105	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: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-08-07

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity: 65.0%
Test Distance: 3.090m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

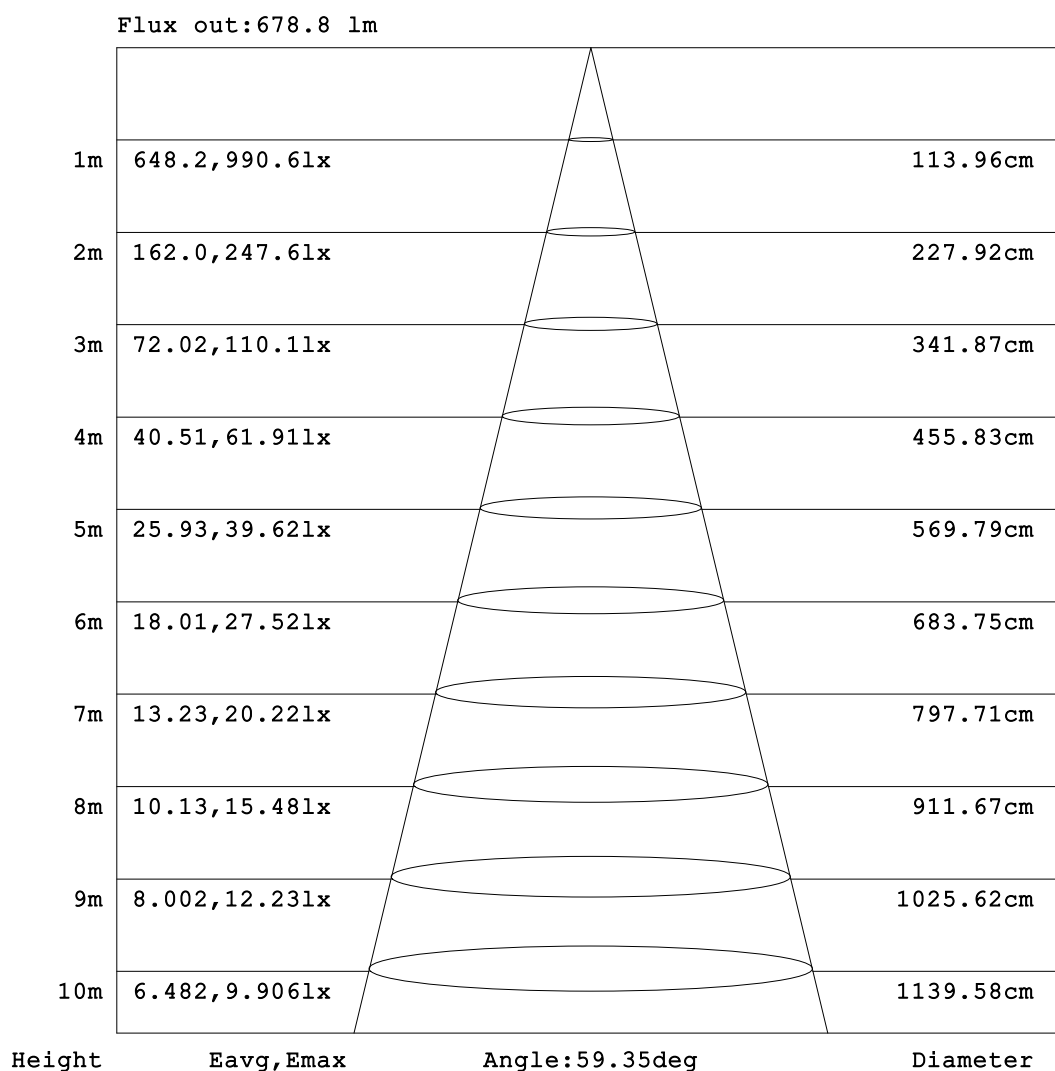
Test:U:240.4V I:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 45.0DEG	γ Interval: 1.0DEG
Test Speed: HIGH	Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Temperature:25.3DEG	Humidity:65.0%
Operators:DAMIN	Test Distance:3.090m [K=1.0000]
Test Date:2024-08-07	Remarks:

AAI Figure

Test:U:240.4V I:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



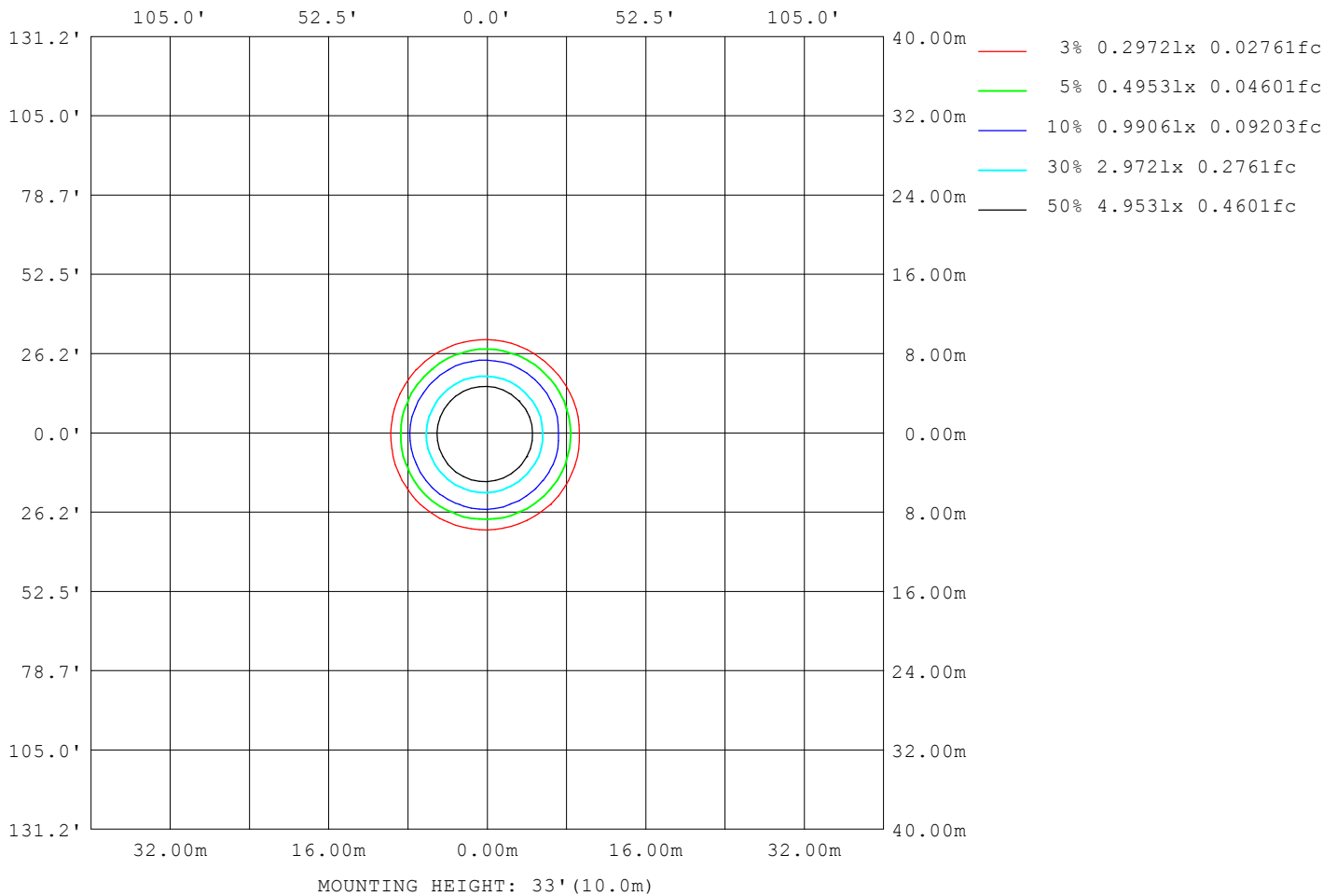
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-08-07

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:0.0534A P:12.2W PF:0.9493 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9650 Lamp Flux:947.393x1 lm		
NAME: TR01-12-XX-01 4000K RA90 60D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

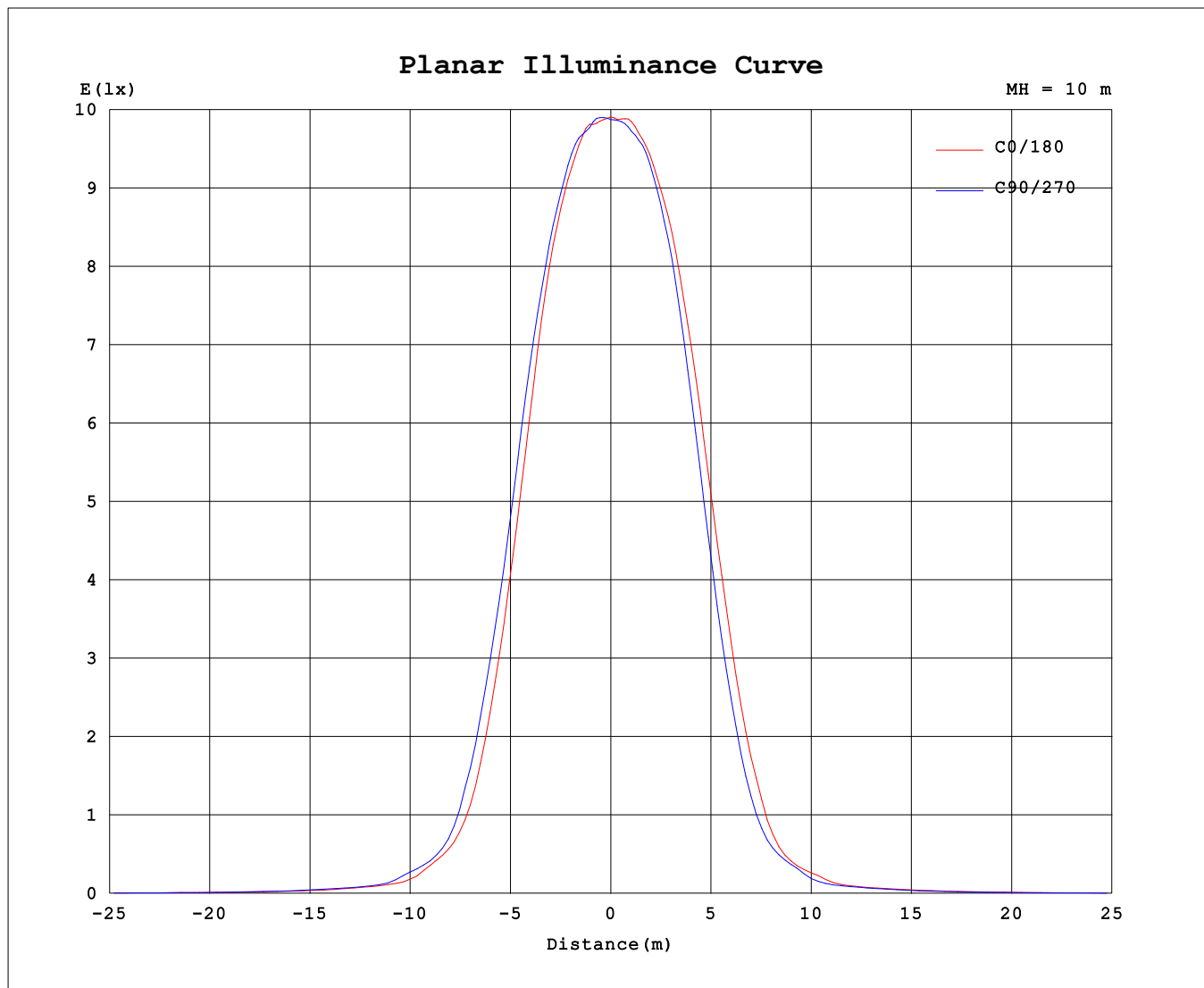
AvgL	cd/m2
L_0~180 (65) av	13635
L_0~180 (75) av	10702
L_0~180 (85) av	2065
L_90~270 (65) av	13583
L_90~270 (75) av	11049
L_90~270 (85) av	1586
L_45 (65) av	13582
L_45 (75) av	11031
L_45 (85) av	1822

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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: 2024-08-07

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	988.1	988.1	988.1	988.1	988.1	988.1	988.1	988.1
3.0	987.3	991.3	995.0	988.9	989.6	986.4	989.8	987.6
6.0	995.5	991.0	994.4	990.1	998.2	990.1	989.2	989.9
9.0	988.4	1001	1002	997.5	996.1	994.8	991.8	991.4
12.0	971.2	984.6	993.7	988.1	990.2	983.7	978.3	973.1
15.0	942.3	956.2	970.9	978.0	976.7	966.9	952.0	942.4
18.0	890.6	907.3	931.3	945.0	949.3	925.2	906.0	887.5
21.0	795.9	831.6	869.7	891.0	890.5	865.7	821.6	791.5
24.0	679.4	720.6	777.6	817.6	810.8	769.7	712.7	674.6
27.0	547.7	590.7	651.6	705.0	692.7	643.7	580.7	541.3
30.0	413.8	454.9	521.8	563.0	559.2	498.6	440.2	400.6
33.0	281.1	326.7	382.8	422.6	407.7	356.7	303.9	274.5
36.0	177.3	209.5	254.8	283.5	276.6	226.0	190.6	173.4
39.0	120.2	133.6	149.2	168.4	160.4	135.4	123.4	118.9
42.0	87.03	97.40	101.7	109.1	100.4	93.17	90.42	83.88
45.0	51.62	64.28	77.86	79.49	74.45	66.57	54.69	47.96
48.0	38.13	39.47	46.04	52.27	46.74	39.25	37.74	37.25
51.0	32.38	33.47	35.60	36.85	35.53	33.05	32.45	31.63
54.0	26.77	28.46	30.70	31.82	30.73	28.57	27.41	26.09
57.0	21.33	23.08	25.73	27.31	26.13	23.98	21.96	20.68
60.0	18.39	19.48	20.81	22.25	21.49	19.29	18.06	17.75
63.0	16.09	17.13	18.02	18.58	17.85	16.56	15.78	15.40
66.0	14.04	15.06	15.94	16.36	15.67	14.48	13.69	13.24
69.0	11.82	12.81	13.76	14.29	13.52	12.36	11.53	10.78
72.0	9.438	10.15	11.19	12.09	11.14	10.07	9.192	7.994
75.0	6.453	7.581	8.578	9.778	8.504	7.827	6.864	5.649
78.0	2.918	4.361	6.016	7.373	6.248	5.285	3.712	2.691
81.0	0.9434	1.559	2.770	3.854	3.582	2.371	1.355	0.8468
84.0	0.2126	0.4109	0.8869	1.408	1.303	0.7405	0.3424	0.1787
87.0	0.0351	0.0617	0.1858	0.3402	0.3124	0.1424	0.0542	0.0287
90.0	0.0372	0.0295	0.0344	0.0452	0.0426	0.0292	0.0402	0.0390

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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: