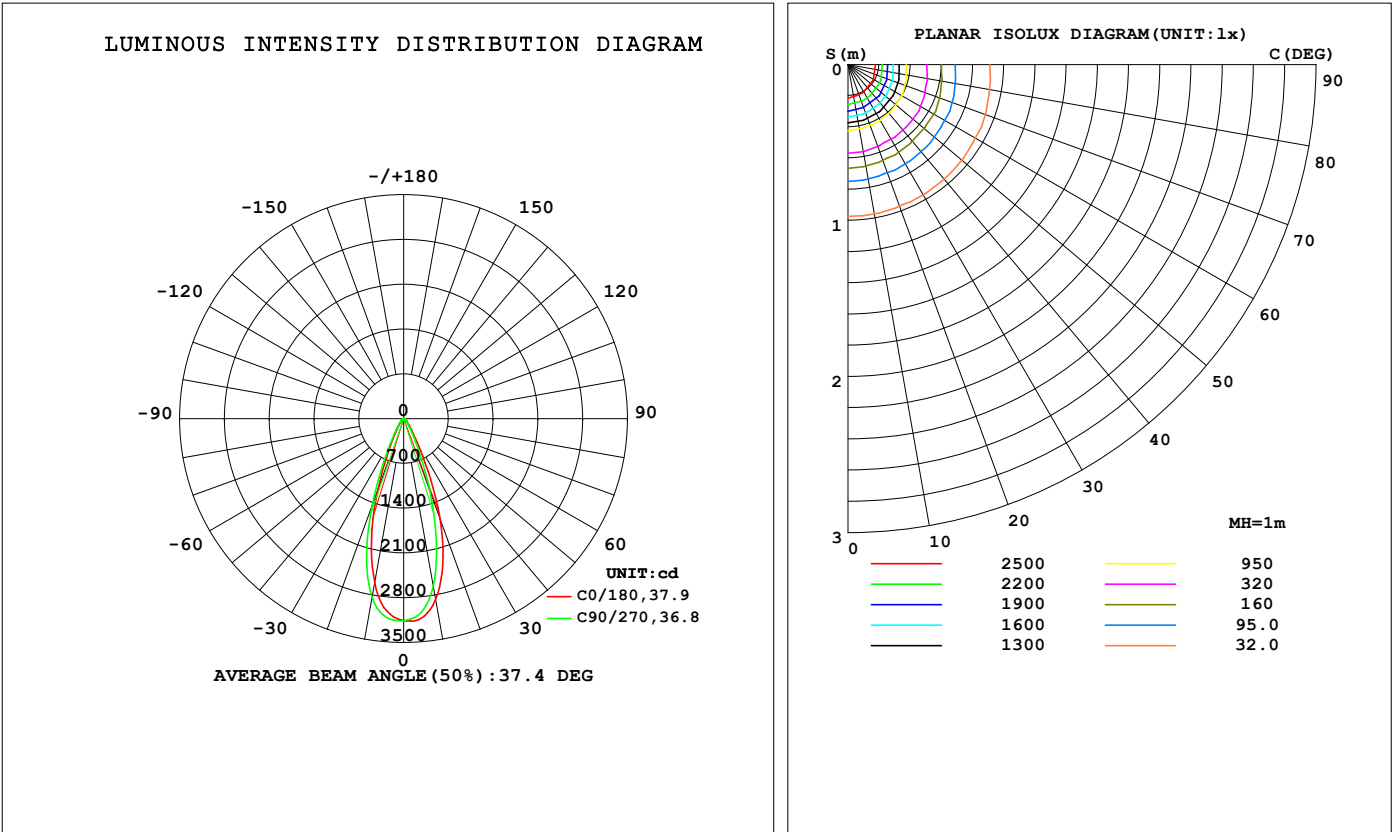


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.4V I:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 72.50 lm/W
MODEL		I _{max} (cd)	3170	S/MH(C0/180)		0.55
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)		0.59
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1415.5	η UP,DN(C0-180)		0.0,49.9
NOMINAL FLUX(lm)	1415.49	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



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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	2874	2797	2668	2588	2607	2711	2845	2899	0- 10	283.7	283.7	20,20
20	1671	1519	1210	1085	1177	1329	1437	1541	10- 20	576.7	860.4	60.8,60.8
30	424.8	381.6	284.8	255.2	273.8	320.4	347.5	390.7	20- 30	333.2	1194	84.3,84.3
40	125.6	118.0	95.88	87.47	92.48	102.6	109.7	117.8	30- 40	118.0	1312	92.7,92.7
50	53.15	51.11	44.54	41.39	43.29	47.76	50.13	51.22	40- 50	54.85	1366	96.5,96.5
60	26.73	26.03	22.95	20.61	21.34	23.60	24.79	25.37	50- 60	30.68	1397	98.7,98.7
70	9.583	8.443	6.954	5.264	4.852	6.635	7.936	8.950	60- 70	15.04	1412	99.8,99.8
80	1.388	1.235	1.019	0.8599	0.8682	0.9855	1.235	1.392	70- 80	2.936	1415	100,100
90	0.0575	0.0238	0.0450	0.0277	0.0311	0.0254	0.0321	0.0338	80- 90	0.4017	1415	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): 1343.2 lm

%lum = 94.9%

%lamp = 94.9%

Conical surface Flux(120deg): 1397.1 lm

%lum = 98.7%

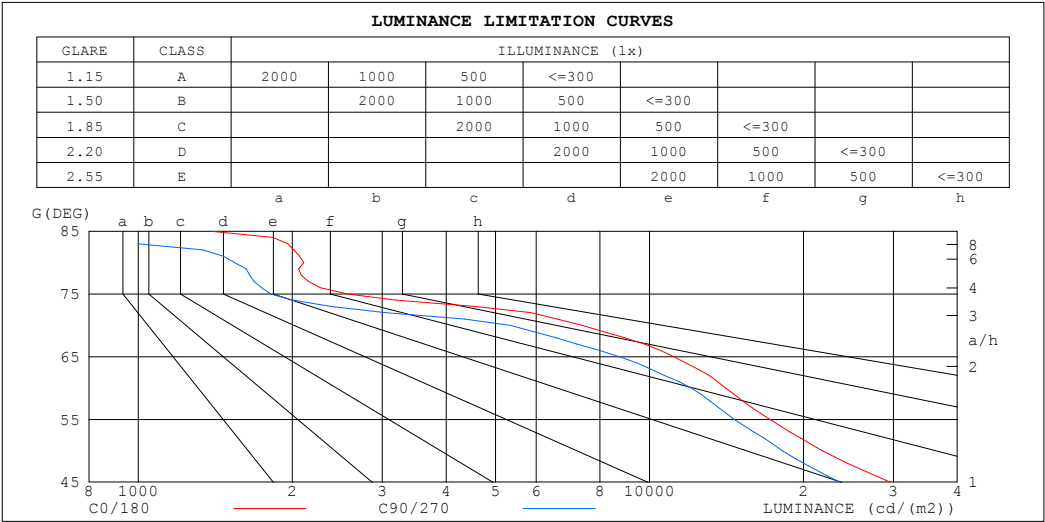
%lamp = 98.7%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1390	412
80	2107	1543
75	2572	1815
70	7387	5348
65	11149	8741
60	14094	12071
55	17217	14661
50	21798	18227
45	29610	23577

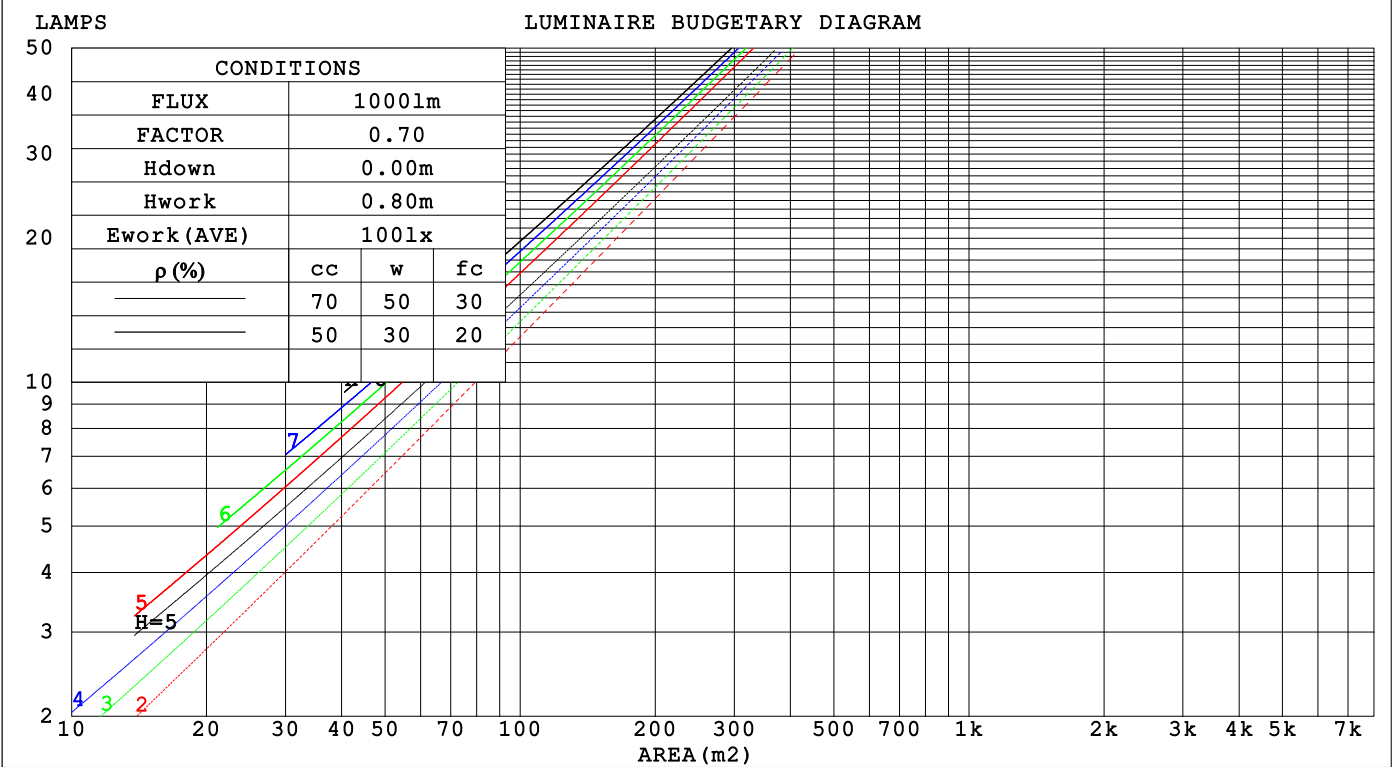
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	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:2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	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	.162	.092	.029	.156	.089	.028	.143	.082	.026	.131	.076	.024	.121	.070	.023															
2.0	.153	.084	.026	.148	.081	.025	.137	.076	.024	.128	.072	.022	.119	.067	.021															
3.0	.145	.077	.023	.140	.075	.023	.131	.071	.022	.123	.067	.021	.116	.064	.020															
4.0	.137	.071	.021	.133	.069	.021	.125	.066	.020	.118	.063	.019	.112	.061	.018															
5.0	.130	.066	.019	.126	.065	.019	.120	.062	.018	.113	.060	.018	.108	.058	.017															
6.0	.123	.062	.018	.120	.061	.017	.114	.059	.017	.109	.057	.017	.104	.055	.016															
7.0	.117	.058	.016	.114	.057	.016	.109	.055	.016	.105	.054	.016	.100	.052	.015															
8.0	.112	.055	.015	.109	.054	.015	.105	.052	.015	.101	.051	.015	.097	.050	.014															
9.0	.107	.052	.014	.105	.051	.014	.101	.050	.014	.097	.049	.014	.094	.047	.014															
10.0	.102	.049	.014	.100	.048	.014	.097	.047	.013	.094	.046	.013	.090	.045	.013															

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	.170	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.041	.017	.015	.013	
3.0	.140	.113	.092	.120	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.129	.098	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.096	.067	.045	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.105	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.098	.063	.038	.085	.054	.033	.059	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.056	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz											
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm											
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.: Norming lighting						SUR.: 70mm		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		18.2	19.0	18.4	19.2	19.4	17.2	18.1	17.5	18.2	18.4
	3H	18.4	19.2	18.7	19.4	19.6	17.4	18.2	17.6	18.4	18.5
	4H	18.4	19.1	18.7	19.3	19.5	17.3	18.1	17.6	18.3	18.5
	6H	18.3	19.0	18.6	19.2	19.5	17.3	17.9	17.6	18.2	18.4
	8H	18.3	18.9	18.6	19.2	19.4	17.2	17.9	17.5	18.1	18.4
	12H	18.2	18.9	18.5	19.1	19.4	17.2	17.8	17.5	18.1	18.3
4H	2H	18.3	19.0	18.5	19.2	19.4	17.4	18.1	17.6	18.3	18.5
	3H	18.5	19.1	18.8	19.4	19.7	17.6	18.2	17.9	18.5	18.7
	4H	18.5	19.0	18.8	19.3	19.6	17.5	18.1	17.9	18.4	18.7
	6H	18.4	18.9	18.8	19.2	19.6	17.4	17.9	17.8	18.3	18.6
	8H	18.4	18.8	18.7	19.2	19.5	17.4	17.9	17.8	18.2	18.6
	12H	18.3	18.7	18.7	19.1	19.5	17.3	17.8	17.7	18.1	18.5
8H	4H	18.3	18.8	18.7	19.2	19.5	17.4	17.9	17.8	18.2	18.6
	6H	18.3	18.7	18.7	19.0	19.5	17.3	17.7	17.7	18.1	18.5
	8H	18.2	18.6	18.7	19.0	19.4	17.3	17.6	17.7	18.0	18.5
	12H	18.2	18.5	18.6	18.9	19.4	17.2	17.5	17.7	18.0	18.4
12H	4H	18.3	18.7	18.7	19.1	19.5	17.3	17.8	17.8	18.1	18.5
	6H	18.2	18.6	18.7	19.0	19.4	17.3	17.6	17.7	18.0	18.5
	8H	18.2	18.5	18.6	18.9	19.4	17.2	17.5	17.7	18.0	18.4
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 1.6 / - 2.2					+ 1.3 / - 2.1				
1.5H		+ 2.6 / - 1.5					+ 1.7 / - 1.4				
2.0H		+ 2.3 / - 1.8					+ 1.9 / - 1.6				

CIE Pub.117, 1415 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.2$)
Area: 0.0038 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

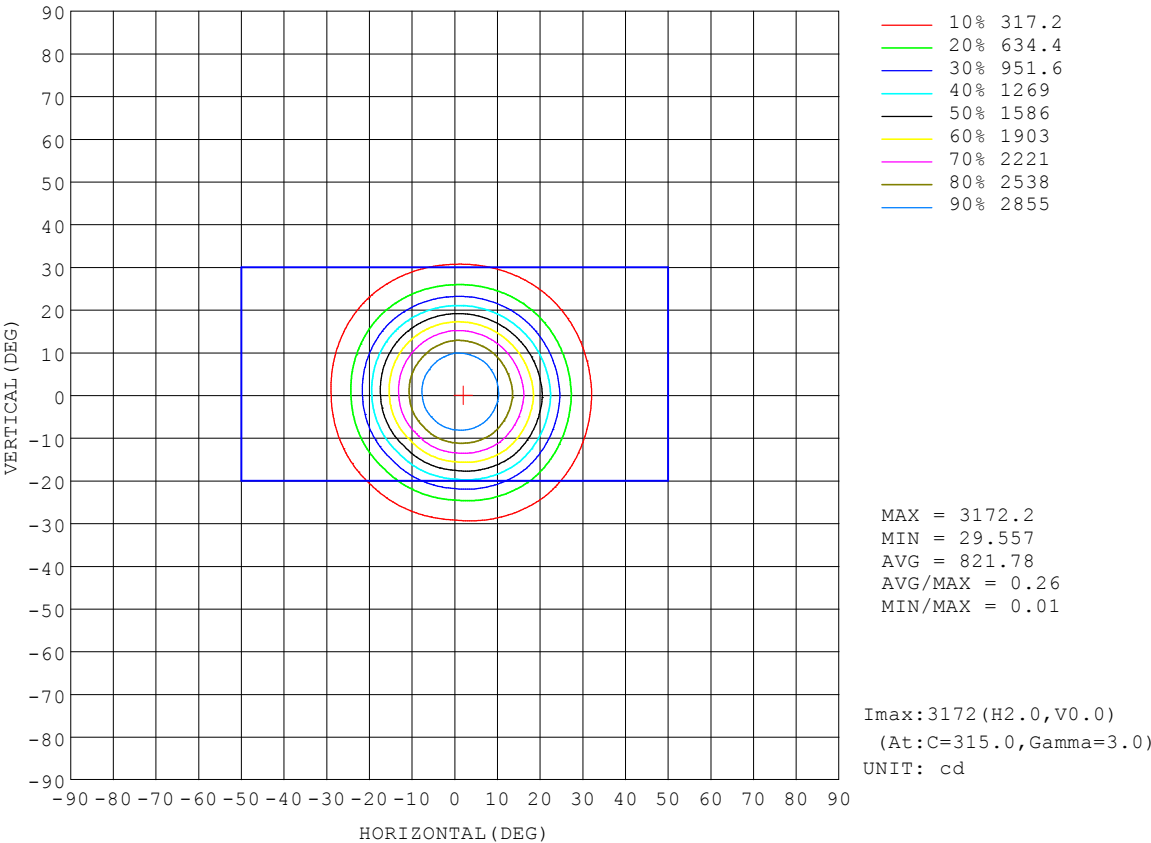
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	77	86	80	77	86	80	76	73
0.80	94	88	85	94	88	85	93	88	84	80
1.00	99	93	90	98	93	89	96	93	89	85
1.25	103	98	94	102	97	94	100	96	93	89
1.50	106	101	98	104	100	97	102	99	96	91
2.00	108	104	101	107	103	100	104	101	99	93
2.50	110	106	103	109	105	102	105	103	100	95
3.00	112	108	106	110	107	104	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	99
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: 2024-08-14

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

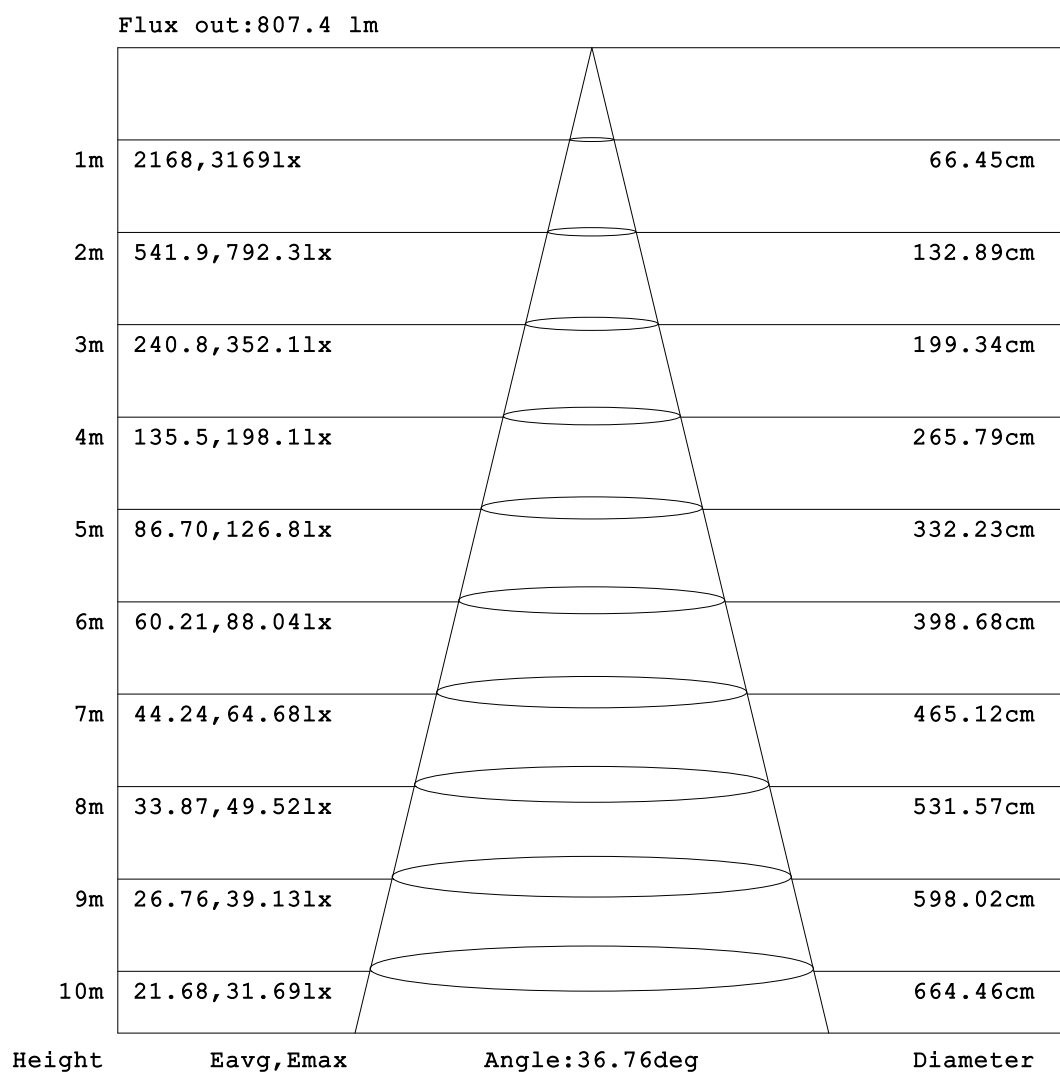
Test:U:240.4V I:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



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:2024-08-14	Remarks:

AAI Figure

Test:U:240.4V I:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



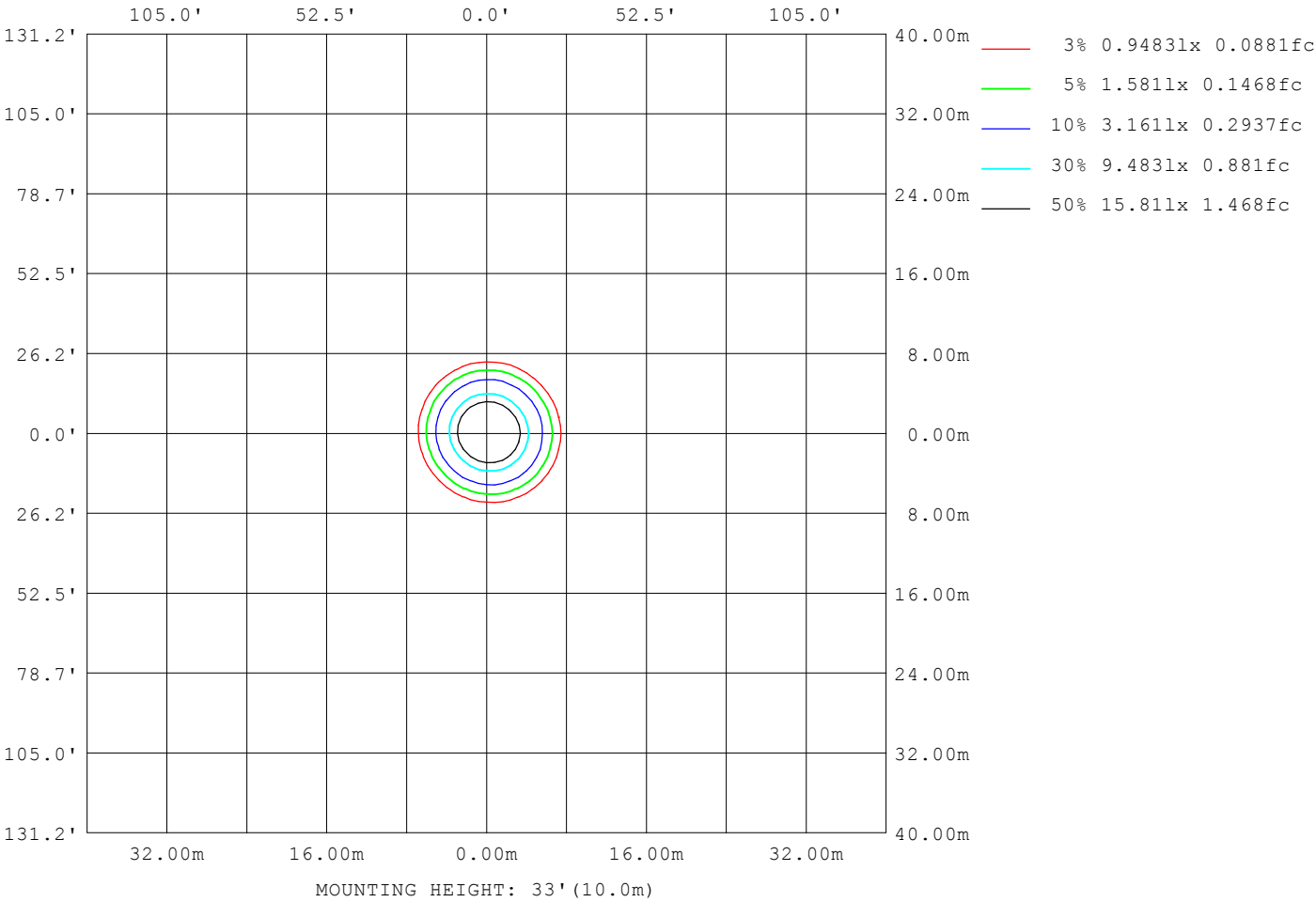
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-08-14

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:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz		
UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	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:2024-08-14	Remarks:

LED Avg.L Report

Test:U:240.4V I:0.0826A P:19.5W PF:0.9832 Freq:49.99Hz UTHDi:0.18% ITHDi:6.86% KDisp:0.9875 Lamp Flux:1415.49x1 lm		
NAME: TR11-20-DW-01+白色防眩环 3000K RA90 36D 20W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

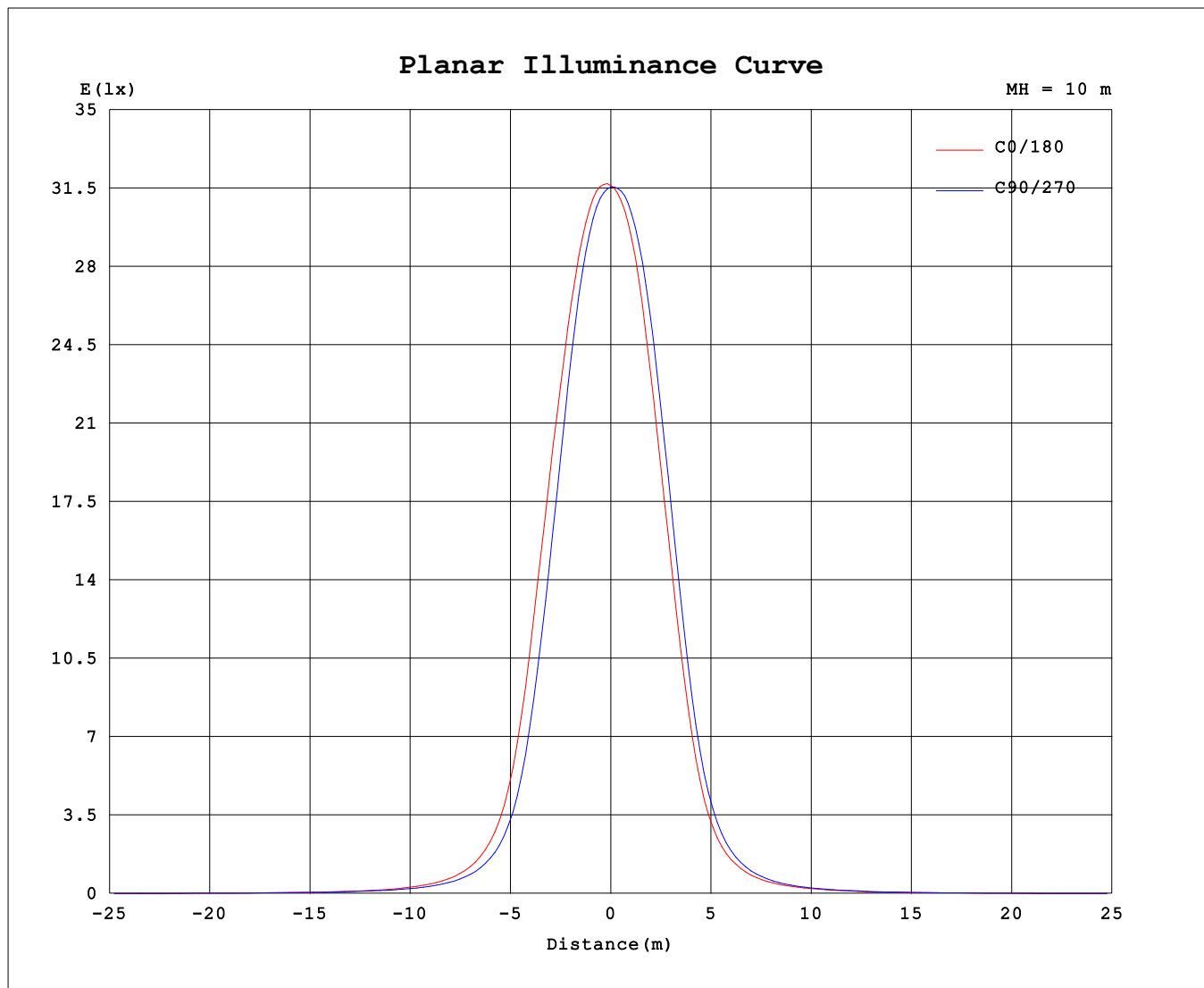
AvgL	cd/m2
L_0~180 (65) av	9463
L_0~180 (75) av	2111
L_0~180 (85) av	850
L_90~270 (65) av	9353
L_90~270 (75) av	1960
L_90~270 (85) av	443
L_45 (65) av	9366
L_45 (75) av	2036
L_45 (85) av	585

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-14

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: 2024-08-14

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	3156	3156	3156	3156	3156	3156	3156	3156
3.0	3164	3136	3119	3108	3101	3121	3151	3170
6.0	3103	3049	3000	2969	2967	3020	3085	3114
9.0	2949	2876	2774	2707	2719	2810	2926	2974
12.0	2698	2602	2424	2321	2364	2484	2642	2704
15.0	2369	2246	1986	1866	1945	2094	2246	2327
18.0	1970	1824	1520	1390	1489	1648	1777	1867
21.0	1507	1361	1062	946.1	1032	1176	1271	1376
24.0	1034	917.8	684.8	606.1	662.8	773.0	837.6	940.2
27.0	663.2	588.6	433.5	387.3	418.8	492.2	535.7	605.6
30.0	424.8	381.6	284.8	255.2	273.8	320.4	347.5	390.7
33.0	280.9	255.3	195.8	177.2	188.9	216.8	234.6	259.0
36.0	194.2	178.9	140.1	127.6	135.6	153.3	165.6	180.3
39.0	139.2	130.2	104.1	95.62	101.3	112.9	120.9	130.4
42.0	103.3	97.68	80.50	73.69	77.89	86.30	91.19	97.43
45.0	79.42	75.31	63.38	58.17	61.39	67.26	70.51	74.97
48.0	61.93	59.28	50.95	47.48	49.79	55.41	57.48	58.67
51.0	49.49	47.55	41.77	38.65	40.39	44.35	46.69	47.75
54.0	40.10	38.90	34.17	31.14	32.64	35.26	37.29	38.62
57.0	32.60	31.70	28.12	25.76	26.99	28.97	30.23	30.98
60.0	26.73	26.03	22.95	20.61	21.34	23.60	24.79	25.37
63.0	21.43	20.27	17.37	15.53	16.06	18.03	19.44	20.22
66.0	16.21	14.88	12.35	10.63	10.85	12.61	14.25	15.27
69.0	11.03	9.799	8.063	6.921	6.835	8.039	9.250	10.42
72.0	6.865	5.696	3.568	2.626	2.483	3.152	4.419	6.312
75.0	2.525	2.173	1.786	1.610	1.627	1.799	2.069	2.427
78.0	1.643	1.483	1.305	1.150	1.155	1.303	1.527	1.644
81.0	1.226	1.072	0.8723	0.6905	0.6571	0.8232	1.068	1.217
84.0	0.7258	0.4897	0.2183	0.1167	0.1318	0.1395	0.3772	0.6496
87.0	0.1436	0.0945	0.0801	0.0443	0.0513	0.0544	0.0915	0.1051
90.0	0.0575	0.0238	0.0450	0.0277	0.0311	0.0254	0.0321	0.0338

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-08-14

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: