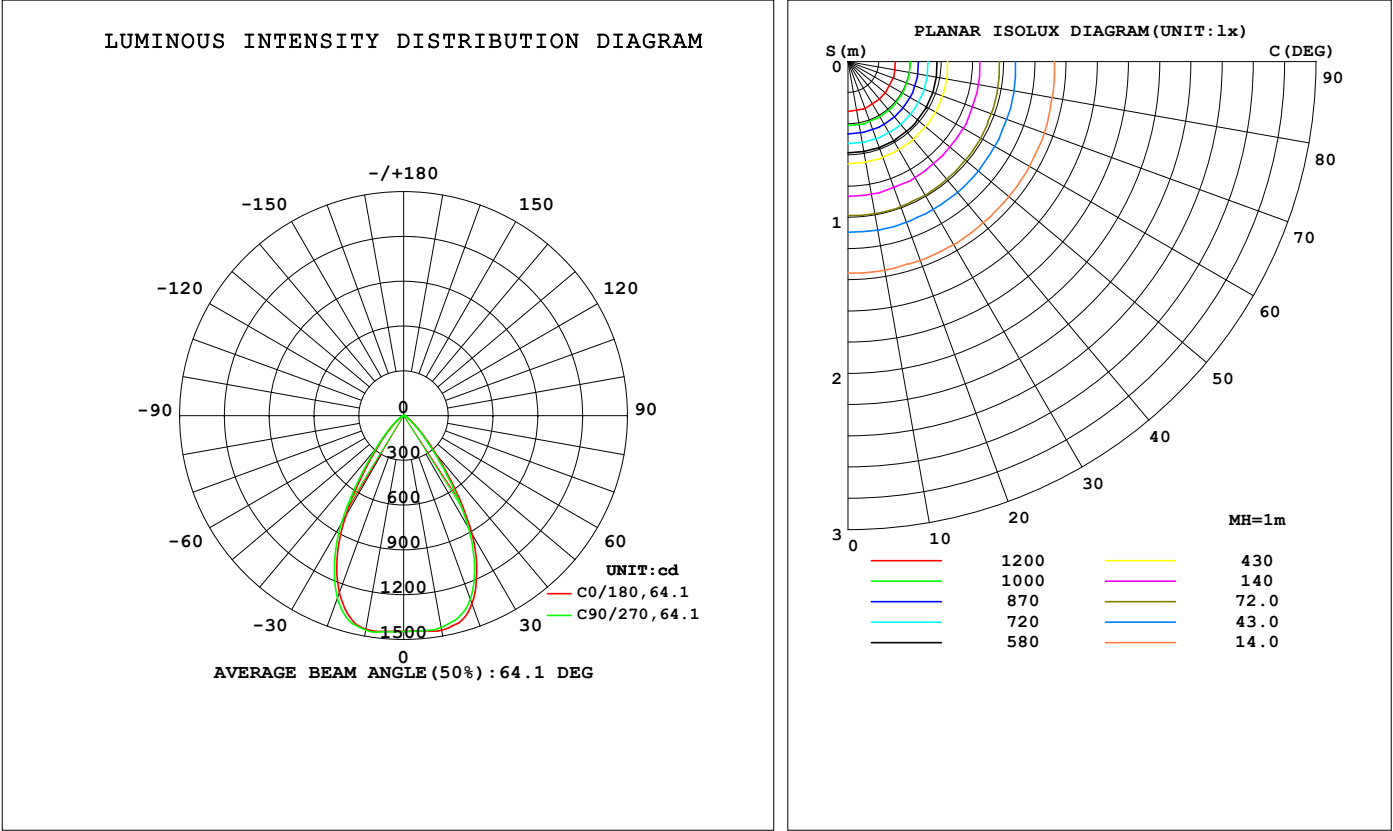


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.4V I:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz		
UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 85.63 lm/W
MODEL		Imax (cd)	1463	S/MH(C0/180)	0.91	
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.94	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1572.7	η UP,DN(C0-180)	0.0,51.3	
NOMINAL FLUX(lm)	1572.67	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.7	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75	
TEST VOLTAGE(V)	240.39	η down (%)	100.0	CIBSE SHR MAX	0.95	



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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	1460	1454	1441	1447	1453	1452	1459	1458	0- 10	138.6	138.6	8.82,8.82
20	1340	1331	1308	1281	1261	1248	1298	1323	10- 20	394.6	533.2	33.9,33.9
30	920.2	923.5	871.3	821.6	779.5	780.1	839.0	882.0	20- 30	501.7	1035	65.8,65.8
40	342.8	339.5	311.9	288.9	266.0	260.9	294.8	316.4	30- 40	340.8	1376	87.5,87.5
50	102.0	101.3	91.52	85.21	79.77	78.07	86.83	94.77	40- 50	134.3	1510	96,96
60	28.74	28.75	25.03	23.42	21.97	22.08	24.46	27.93	50- 60	45.95	1556	98.9,98.9
70	7.098	7.025	6.389	5.962	5.704	5.742	6.398	7.125	60- 70	13.24	1569	99.8,99.8
80	1.541	1.419	1.327	1.191	1.143	1.205	1.335	1.484	70- 80	3.062	1572	100,100
90	0.0398	0.0299	0.0412	0.0360	0.0356	0.0331	0.0363	0.0283	80- 90	0.4395	1573	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): 1459.9 lm

%lum = 92.8%

%lamp = 92.8%

Conical surface Flux(120deg): 1555.9 lm

%lum = 98.9%

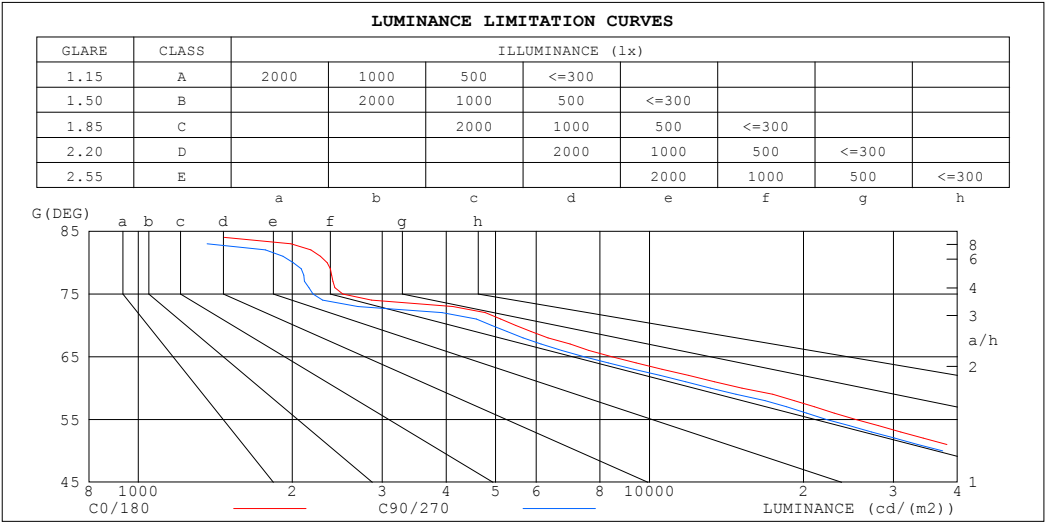
%lamp = 98.9%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz		
UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	688	426
80	2341	2010
75	2512	2197
70	5474	4912
65	8448	7448
60	15158	13164
55	25333	22200
50	41858	37437
45	70202	63582

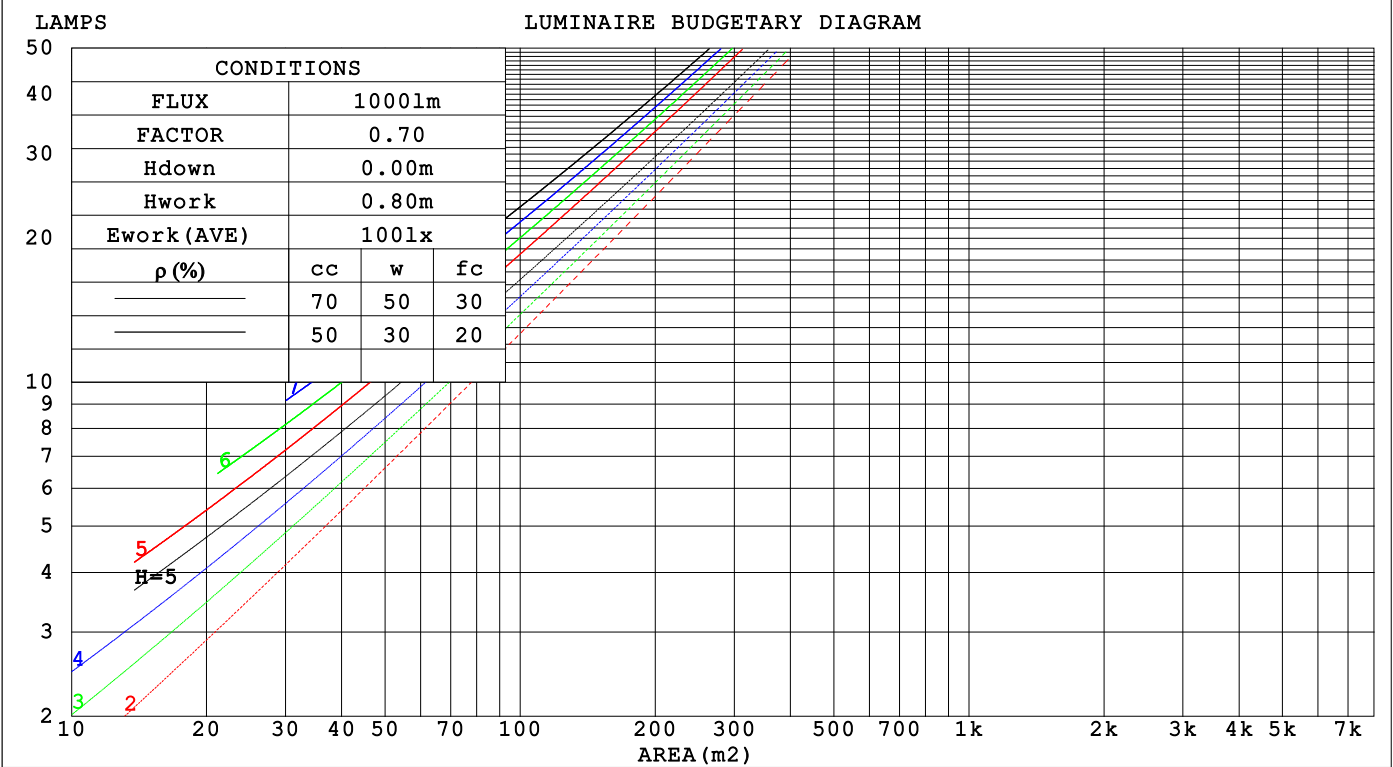
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz		
UTHDi:0.17% ITHDi:7.89% KDisp:0.9496		
Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	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:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz			UTHDi:0.17% ITHDi:7.89% KDisp:0.9496			Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W			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	.187	.106	.034	.180	.103	.033	.168	.096	.031	.156	.090	.029	.145	.084	.027															
2.0	.180	.099	.030	.175	.096	.030	.164	.091	.028	.154	.086	.027	.145	.082	.026															
3.0	.172	.092	.027	.168	.090	.027	.158	.086	.026	.150	.082	.025	.142	.079	.024															
4.0	.164	.085	.025	.160	.084	.025	.152	.081	.024	.145	.078	.023	.138	.075	.023															
5.0	.157	.080	.023	.153	.079	.023	.146	.076	.022	.140	.074	.022	.134	.071	.021															
6.0	.149	.075	.021	.146	.074	.021	.140	.072	.021	.134	.070	.021	.129	.068	.020															
7.0	.143	.071	.020	.140	.070	.020	.134	.068	.020	.129	.066	.019	.124	.065	.019															
8.0	.136	.067	.019	.134	.066	.019	.129	.064	.018	.124	.063	.018	.120	.062	.018															
9.0	.131	.063	.018	.128	.062	.018	.124	.061	.017	.120	.060	.017	.116	.059	.017															
10.0	.125	.060	.017	.123	.059	.017	.119	.058	.016	.115	.057	.016	.112	.056	.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	.111	.135	.114	.096	.092	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.054	.050	.040	.032	.016	.013	.010	
4.0	.136	.099	.071	.117	.086	.062	.080	.060	.043	.046	.035	.026	.015	.011	.008	
5.0	.128	.088	.058	.110	.076	.051	.076	.053	.036	.044	.031	.021	.014	.010	.007	
6.0	.121	.079	.048	.104	.068	.042	.071	.048	.030	.041	.028	.018	.013	.009	.006	
7.0	.114	.071	.041	.098	.062	.036	.068	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.109	.065	.035	.094	.056	.031	.065	.040	.022	.038	.023	.013	.012	.008	.004	
9.0	.104	.060	.030	.089	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004	
10.0	.099	.056	.027	.085	.048	.023	.059	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz										
UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm										
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W					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	23.5	24.5	23.7	24.7	24.9	23.2	24.2	23.4	24.4	24.5
3H	23.4	24.3	23.6	24.5	24.7	23.0	24.0	23.3	24.2	24.4
4H	23.3	24.2	23.6	24.4	24.6	22.9	23.8	23.2	24.0	24.3
6H	23.2	24.0	23.5	24.3	24.5	22.9	23.7	23.2	23.9	24.2
8H	23.2	24.0	23.5	24.2	24.5	22.8	23.6	23.1	23.9	24.1
12H	23.1	23.9	23.4	24.2	24.4	22.8	23.5	23.1	23.8	24.1
4H 2H	23.3	24.2	23.6	24.4	24.6	23.0	23.9	23.3	24.1	24.3
3H	23.2	23.9	23.5	24.2	24.5	22.8	23.6	23.2	23.9	24.1
4H	23.1	23.8	23.5	24.1	24.4	22.8	23.4	23.1	23.7	24.0
6H	23.0	23.6	23.4	24.0	24.3	22.7	23.3	23.0	23.6	23.9
8H	23.0	23.5	23.4	23.9	24.2	22.6	23.2	23.0	23.5	23.9
12H	22.9	23.4	23.3	23.8	24.2	22.6	23.1	23.0	23.4	23.8
8H 4H	23.0	23.5	23.4	23.9	24.2	22.6	23.2	23.0	23.5	23.9
6H	22.9	23.3	23.3	23.7	24.1	22.5	23.0	23.0	23.4	23.8
8H	22.8	23.2	23.3	23.6	24.1	22.5	22.9	22.9	23.3	23.7
12H	22.8	23.1	23.2	23.6	24.0	22.4	22.8	22.9	23.2	23.7
12H 4H	22.9	23.4	23.3	23.8	24.2	22.6	23.1	23.0	23.4	23.8
6H	22.8	23.2	23.3	23.6	24.1	22.5	22.9	22.9	23.3	23.7
8H	22.8	23.1	23.2	23.6	24.0	22.4	22.8	22.9	23.2	23.7
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.7 / - 6.4					+ 2.5 / - 6.6				
1.5H	+ 4.1 / - 4.6					+ 3.9 / - 4.5				
2.0H	+ 4.8 / - 6.0					+ 4.6 / - 5.8				

CIE Pub.117, 1573 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.6$)
Area: 0.0038 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz		
UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

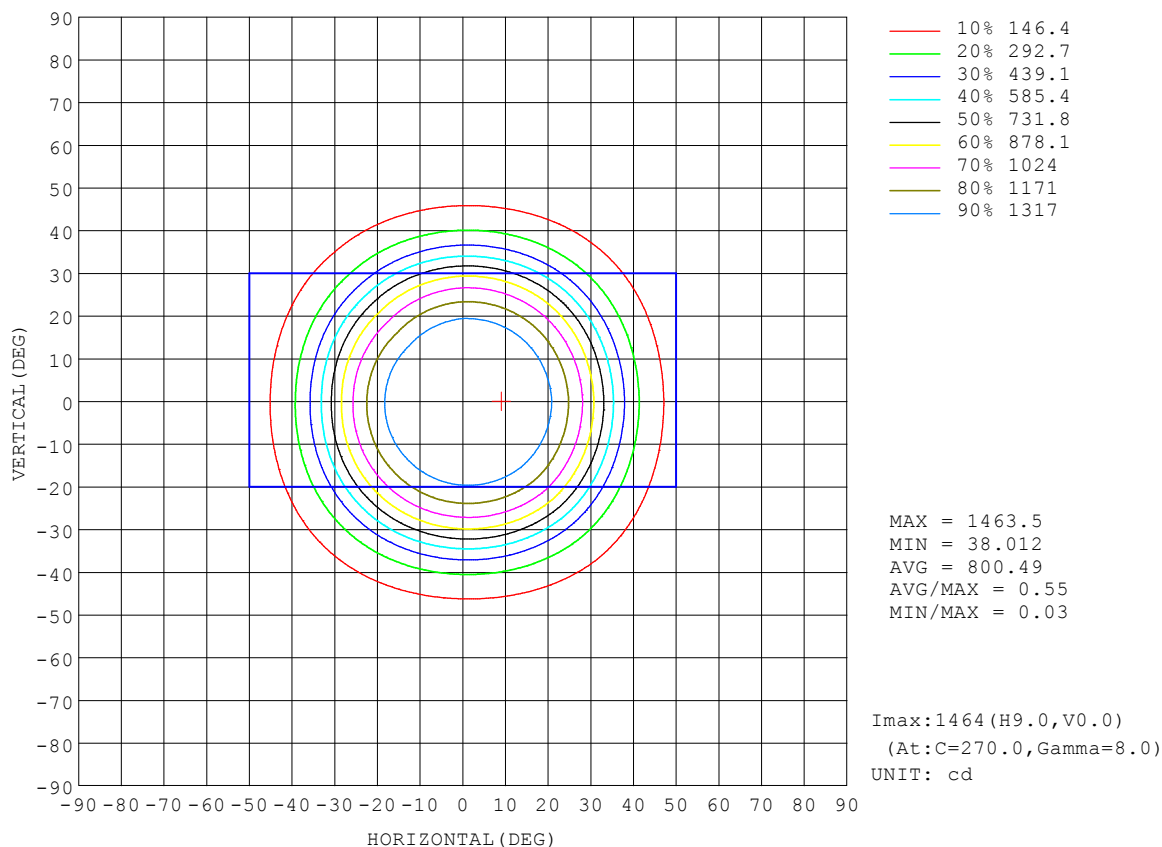
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	76	72	82	76	72	68
0.80	92	85	81	91	85	81	90	84	80	76
1.00	97	91	87	96	90	86	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	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	107	105	104	96
5.00	114	112	110	112	110	108	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: 2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

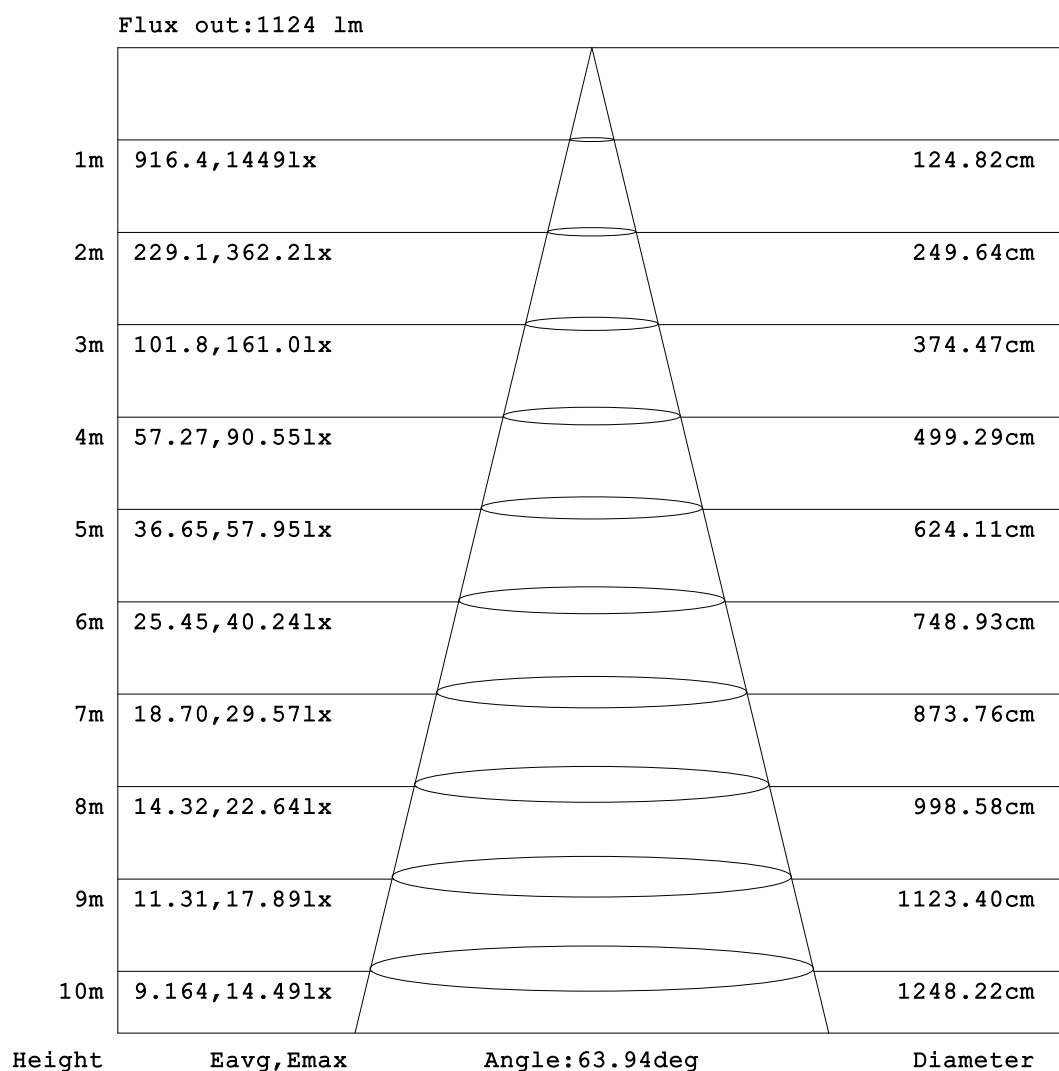


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



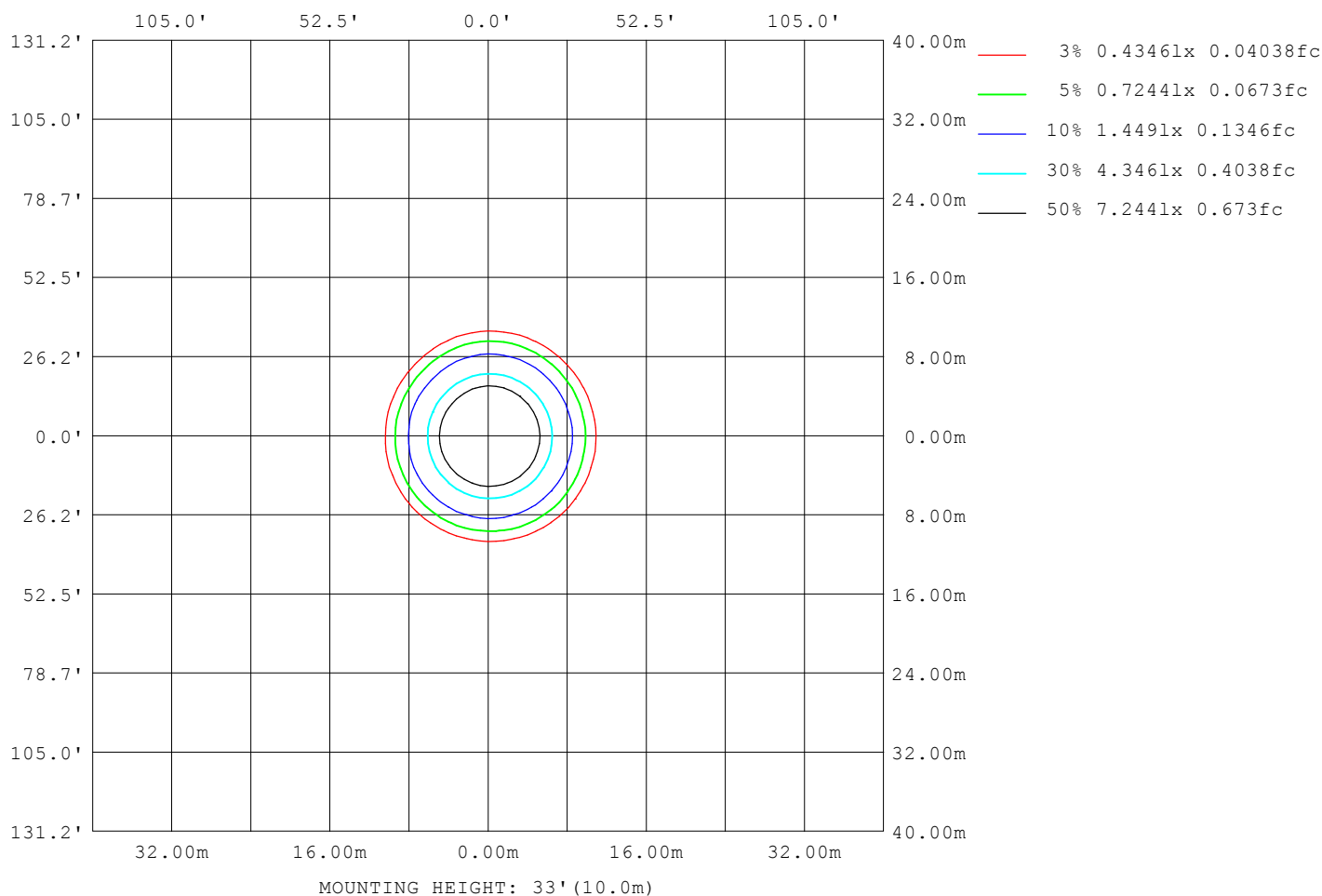
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-04

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:0.0807A P:18.4W PF:0.9467 Freq:49.99Hz UTHDi:0.17% ITHDi:7.89% KDisp:0.9496 Lamp Flux:1572.67x1 lm		
NAME: TR11-20-TW-02+白色防眩环 6500K RA90 60D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 70mm	Shielding Angle:

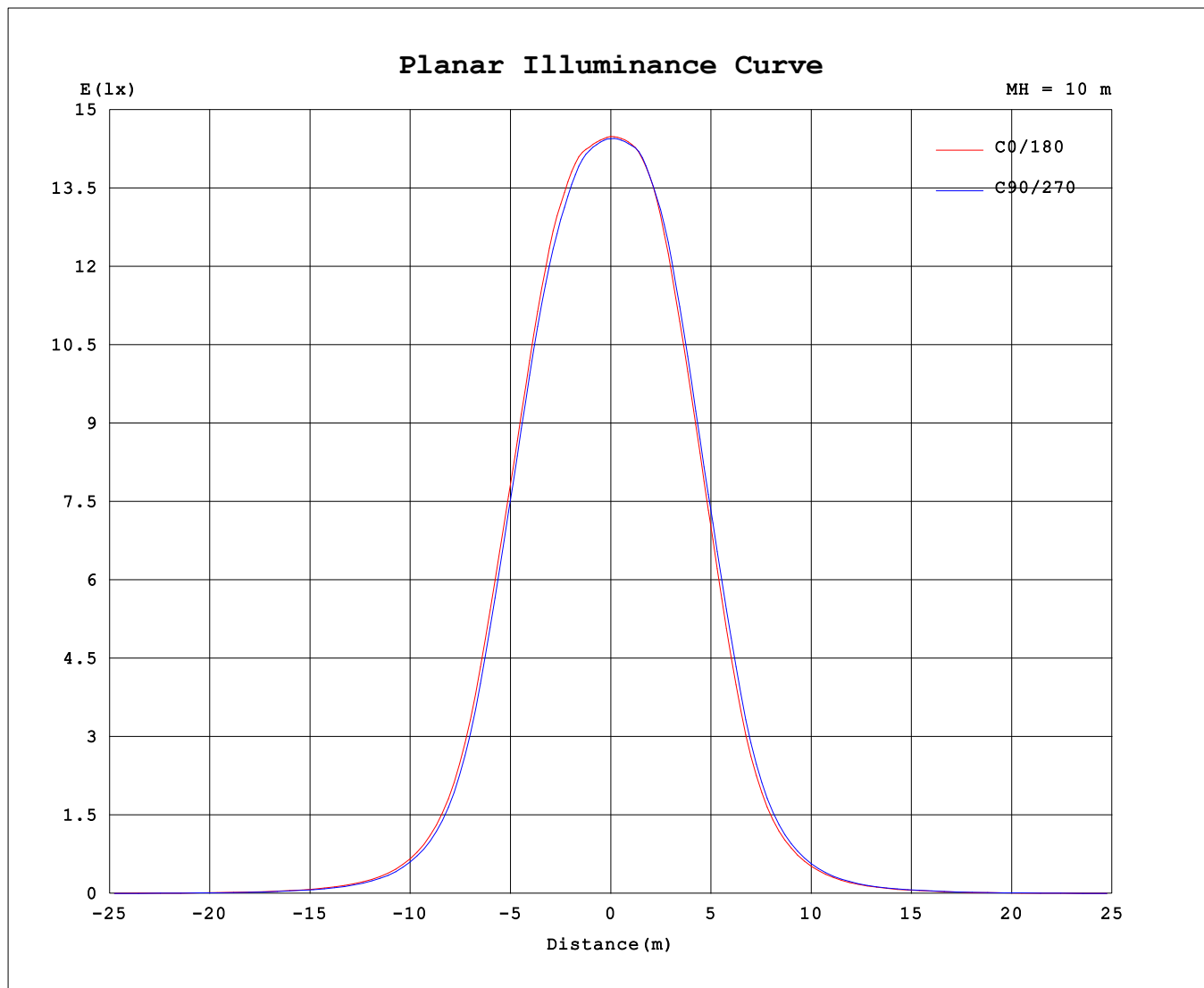
AvgL	cd/m2
L_0~180 (65) av	7524
L_0~180 (75) av	2274
L_0~180 (85) av	516
L_90~270 (65) av	7412
L_90~270 (75) av	2242
L_90~270 (85) av	409
L_45 (65) av	7738
L_45 (75) av	2249
L_45 (85) av	418

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-04

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: 2024-09-04

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	1446	1446	1446	1446	1446	1446	1446	1446
3.0	1445	1443	1445	1445	1448	1450	1449	1447
6.0	1449	1446	1447	1451	1454	1457	1457	1453
9.0	1460	1456	1446	1450	1455	1456	1462	1461
12.0	1453	1446	1428	1439	1441	1437	1446	1447
15.0	1436	1427	1403	1403	1397	1398	1421	1430
18.0	1388	1378	1357	1339	1322	1316	1357	1377
21.0	1310	1303	1279	1247	1225	1212	1264	1291
24.0	1201	1201	1168	1130	1103	1085	1141	1176
27.0	1072	1076	1033	991.9	955.7	944.3	1004	1043
30.0	920.2	923.5	871.3	821.6	779.5	780.1	839.0	882.0
33.0	733.6	734.6	682.2	633.6	591.0	594.7	647.8	693.5
36.0	543.4	541.8	498.6	461.0	425.5	425.1	467.8	506.5
39.0	385.4	381.7	351.2	325.7	299.5	294.7	331.6	356.7
42.0	270.2	267.0	245.5	229.4	212.1	204.6	233.0	249.2
45.0	188.2	188.0	171.0	158.9	148.0	142.3	162.0	173.8
48.0	130.8	130.0	116.9	109.2	102.2	98.87	111.4	120.4
51.0	91.05	89.38	80.17	75.18	70.58	69.16	76.69	83.30
54.0	62.49	61.71	54.95	51.64	48.81	48.48	53.34	58.14
57.0	43.41	43.03	38.41	36.42	34.44	34.48	37.66	41.15
60.0	28.74	28.75	25.03	23.42	21.97	22.08	24.46	27.93
63.0	18.21	18.74	16.08	15.08	14.09	14.32	15.72	18.17
66.0	11.72	12.00	10.41	9.904	9.290	9.586	10.32	11.94
69.0	7.973	8.004	7.169	6.728	6.446	6.490	7.167	8.068
72.0	5.589	5.420	4.616	3.657	3.172	3.366	4.640	5.514
75.0	2.466	2.288	2.163	2.032	2.007	2.101	2.248	2.425
78.0	1.881	1.742	1.667	1.557	1.527	1.603	1.711	1.844
81.0	1.347	1.233	1.142	0.9942	0.9393	0.9953	1.130	1.277
84.0	0.5839	0.4962	0.2992	0.1557	0.1463	0.1349	0.2258	0.4467
87.0	0.1061	0.0882	0.0898	0.0647	0.0626	0.0571	0.0793	0.0828
90.0	0.0398	0.0299	0.0412	0.0360	0.0356	0.0331	0.0363	0.0283

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-04

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: