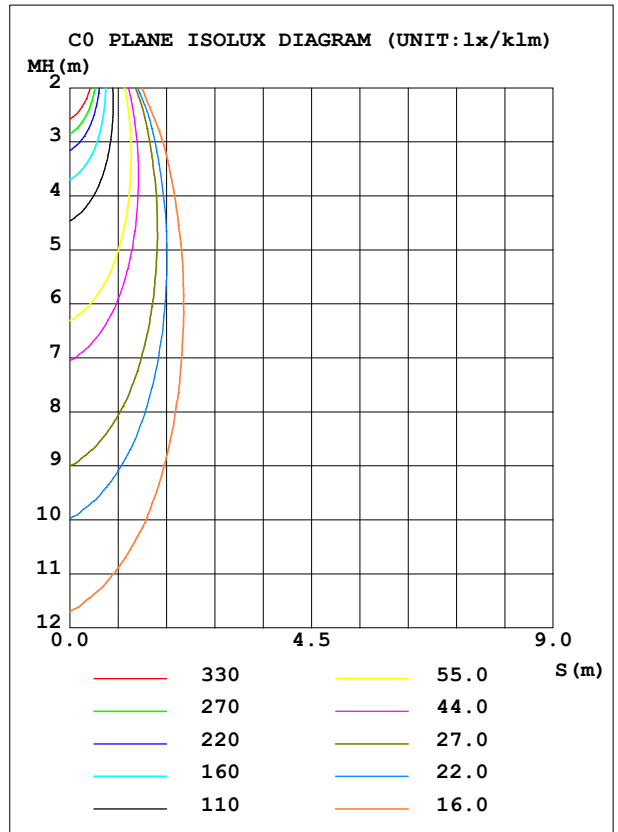
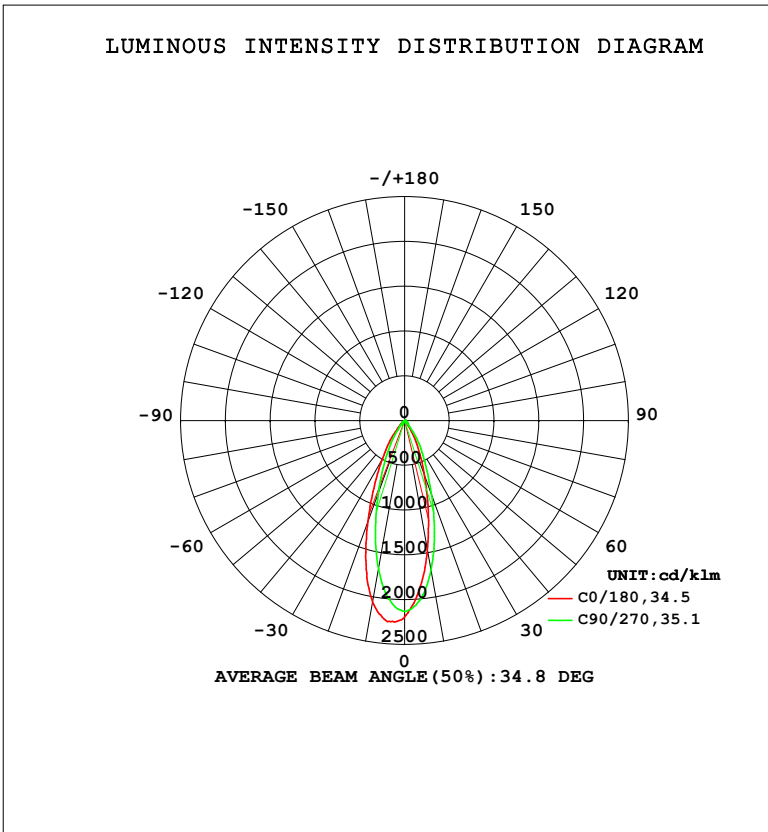


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 58.12 lm/W
MODEL	TUM0001-WH	I _{max} (cd/klm)	2252	S/MH (C0/180)	0.68	
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.57	
RATED VOLTAGE (V)	120.0	TOTAL FLUX (lm/klm)	1000.0	η UP, DN (C0-180)	0.0,48.8	
NOMINAL FLUX (lm)	861.931	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0,51.2	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE (V)	120	η down (%)	100.0	CIBSE SHR MAX	0.60	



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity: 65.0%
 Test Distance: 10.000m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

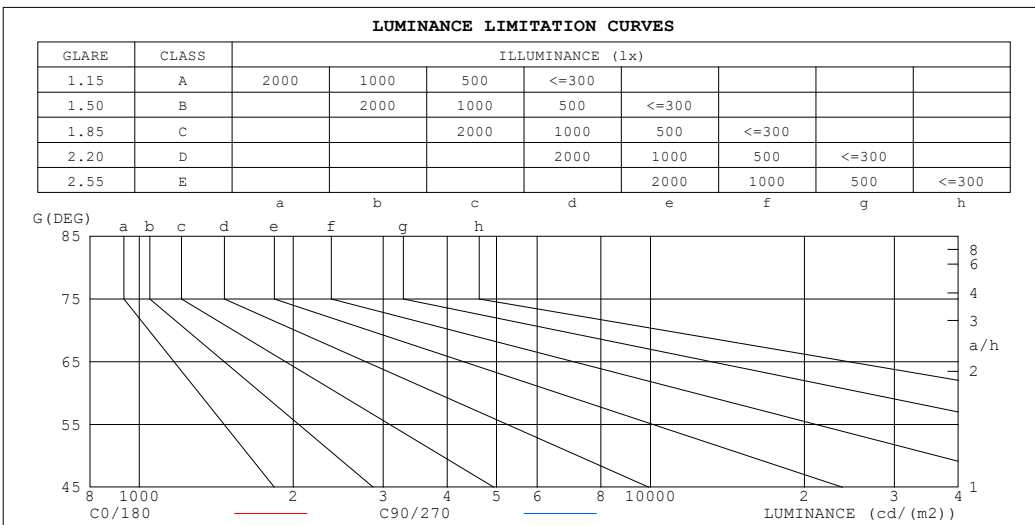
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1470	1510	1699	1932	2057	1924	1683	1463	0- 10	183.3	183.3	18.3,18.3
20	655.9	699.4	880.7	1131	1204	1100	856.7	675.7	10- 20	357.3	540.6	54.1,54.1
30	223.3	229.2	370.1	475.8	506.5	461.9	333.3	259.8	20- 30	268.6	809.2	80.9,80.9
40	52.88	54.09	87.64	126.4	149.9	124.7	77.07	58.92	30- 40	124.3	933.5	93.4,93.4
50	17.13	17.98	25.45	36.75	41.67	37.83	26.89	18.52	40- 50	39.86	973.4	97.3,97.3
60	7.101	7.359	8.851	11.84	13.08	11.47	8.724	7.011	50- 60	14.74	988.1	98.8,98.8
70	4.159	4.287	4.884	5.779	5.924	5.337	4.508	3.920	60- 70	6.650	994.8	99.5,99.5
80	1.984	2.145	2.677	3.192	3.204	2.898	2.455	1.955	70- 80	3.828	998.6	99.9,99.9
90	0.0564	0.0483	0.0403	0.0806	0.5478	0.1369	0	0	80- 90	1.389	1000	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/klm									UNIT:lm/klm		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:
 Test Date:2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity:65.0%
 Test Distance:10.000m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	5	118
80	89	120
75	91	110
70	94	111
65	100	118
60	110	137
55	134	190
50	207	307
45	340	508

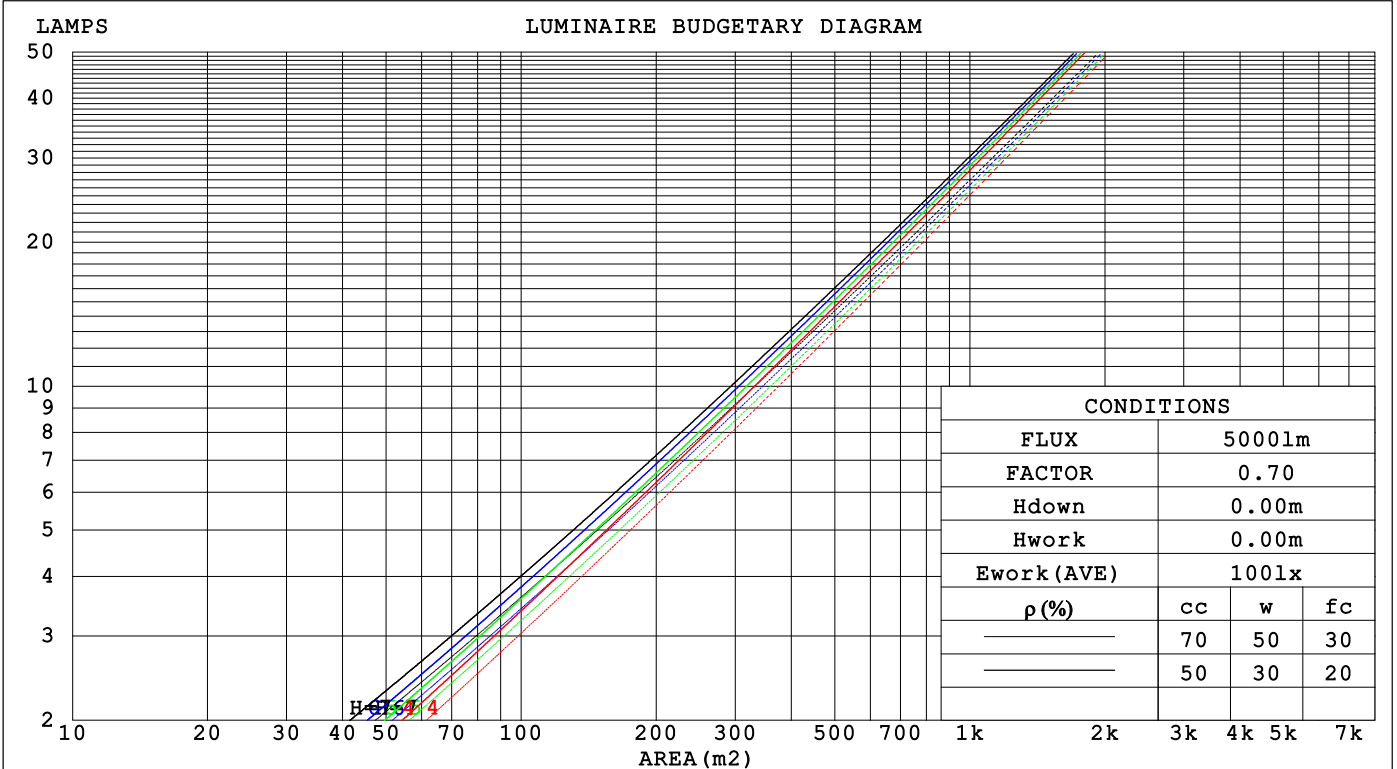
C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity: 65.0%
 Test Distance: 10.000m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	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															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	1.00	.99	.98	.97	.96	.94
2.0	1.04	1.01	.98	1.03	.99	.96	.99	.97	.94	.97	.94	.92	.94	.92	.90	.89
3.0	.98	.94	.90	.97	.93	.89	.94	.91	.88	.92	.89	.87	.90	.87	.85	.84
4.0	.93	.88	.84	.92	.87	.83	.89	.86	.82	.88	.84	.81	.86	.83	.81	.79
5.0	.88	.82	.79	.87	.82	.78	.85	.81	.78	.83	.80	.77	.82	.79	.76	.75
6.0	.83	.78	.74	.82	.77	.74	.81	.77	.73	.80	.76	.73	.78	.75	.72	.71
7.0	.79	.74	.70	.79	.73	.70	.77	.73	.69	.76	.72	.69	.75	.72	.69	.68
8.0	.75	.70	.66	.75	.70	.66	.74	.69	.66	.73	.69	.66	.72	.68	.66	.64
9.0	.72	.67	.63	.72	.67	.63	.71	.66	.63	.70	.66	.63	.69	.65	.63	.61
10.0	.69	.64	.60	.69	.64	.60	.68	.63	.60	.67	.63	.60	.66	.63	.60	.59



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3 °C
Operators:
Test Date:2024-10-21

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
Humidity:65.0%
Test Distance:10.000m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz		
Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.167	.095	.030	.161	.092	.029	.148	.085	.027	.136	.079	.025	.126	.073	.024	
2.0	.158	.087	.027	.153	.084	.026	.142	.079	.025	.132	.074	.023	.123	.070	.022	
3.0	.149	.079	.024	.145	.077	.023	.136	.074	.022	.127	.070	.021	.120	.066	.021	
4.0	.141	.073	.022	.137	.072	.021	.130	.069	.021	.123	.066	.020	.116	.063	.019	
5.0	.134	.068	.020	.131	.067	.020	.124	.065	.019	.118	.062	.018	.112	.060	.018	
6.0	.127	.064	.018	.124	.063	.018	.119	.061	.018	.113	.059	.017	.108	.057	.017	
7.0	.121	.060	.017	.119	.059	.017	.114	.057	.017	.109	.056	.016	.104	.054	.016	
8.0	.116	.057	.016	.114	.056	.016	.109	.055	.016	.105	.053	.015	.101	.052	.015	
9.0	.111	.054	.015	.109	.053	.015	.105	.052	.015	.101	.051	.015	.097	.050	.014	
10.0	.106	.051	.014	.105	.050	.014	.101	.049	.014	.097	.048	.014	.094	.047	.014	

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	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	.125	.100	.093	.087	.057	.054	.050	.018	.017	.016	
2.0	.154	.133	.114	.132	.114	.099	.091	.079	.069	.052	.046	.040	.017	.015	.013	
3.0	.141	.113	.091	.121	.098	.079	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.130	.099	.074	.112	.085	.065	.077	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.121	.087	.061	.104	.075	.054	.072	.052	.038	.041	.031	.022	.013	.010	.007	
6.0	.113	.077	.052	.097	.067	.045	.067	.047	.032	.039	.028	.019	.013	.009	.006	
7.0	.106	.069	.044	.091	.060	.038	.063	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.100	.063	.038	.086	.055	.033	.060	.038	.023	.035	.023	.014	.011	.007	.005	
9.0	.095	.058	.033	.082	.050	.028	.057	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.090	.053	.029	.078	.046	.025	.054	.033	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3°C
 Operators:
 Test Date:2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity:65.0%
 Test Distance:10.000m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	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	1.3	2.1	1.5	2.3	2.4	4.0	4.9	4.2	5.0	5.2
3H	1.4	2.2	1.7	2.4	2.6	4.0	4.8	4.3	5.0	5.2
4H	1.5	2.3	1.8	2.5	2.7	4.1	4.8	4.3	5.0	5.3
6H	1.6	2.3	1.9	2.6	2.8	4.1	4.8	4.4	5.1	5.3
8H	1.6	2.3	1.9	2.6	2.8	4.2	4.8	4.5	5.1	5.3
12H	1.6	2.2	1.9	2.5	2.8	4.2	4.8	4.5	5.1	5.4
4H 2H	1.2	2.0	1.5	2.2	2.4	3.8	4.6	4.1	4.8	5.0
3H	1.5	2.1	1.8	2.4	2.7	3.9	4.6	4.3	4.9	5.1
4H	1.7	2.3	2.0	2.6	2.9	4.0	4.6	4.4	4.9	5.2
6H	1.9	2.4	2.2	2.7	3.1	4.2	4.7	4.5	5.0	5.3
8H	1.9	2.4	2.3	2.7	3.1	4.2	4.7	4.6	5.1	5.4
12H	1.8	2.3	2.3	2.7	3.0	4.3	4.7	4.7	5.1	5.5
8H 4H	1.7	2.2	2.1	2.5	2.9	4.0	4.5	4.4	4.8	5.2
6H	2.0	2.4	2.4	2.8	3.2	4.2	4.6	4.6	4.9	5.4
8H	2.0	2.4	2.5	2.8	3.2	4.3	4.6	4.7	5.0	5.5
12H	2.0	2.3	2.4	2.7	3.2	4.3	4.6	4.8	5.1	5.5
12H 4H	1.7	2.1	2.1	2.5	2.9	3.9	4.4	4.3	4.7	5.1
6H	2.0	2.3	2.4	2.8	3.2	4.1	4.5	4.6	4.9	5.3
8H	2.0	2.3	2.5	2.8	3.2	4.2	4.5	4.7	5.0	5.5
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.5 / - 2.1					+ 3.4 / - 2.8				
1.5H	+ 2.7 / - 2.0					+ 5.1 / - 3.0				
2.0H	+ 2.7 / - 1.3					+ 3.8 / - 1.6				

CIE Pub.117, 861.9 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.5)
Area: 0.111111 m2

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 22.5DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
Temperature:25.3℃	Humidity:65.0%
Operators:	Test Distance:10.000m [K=1.0000]
Test Date:2024-10-21	Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

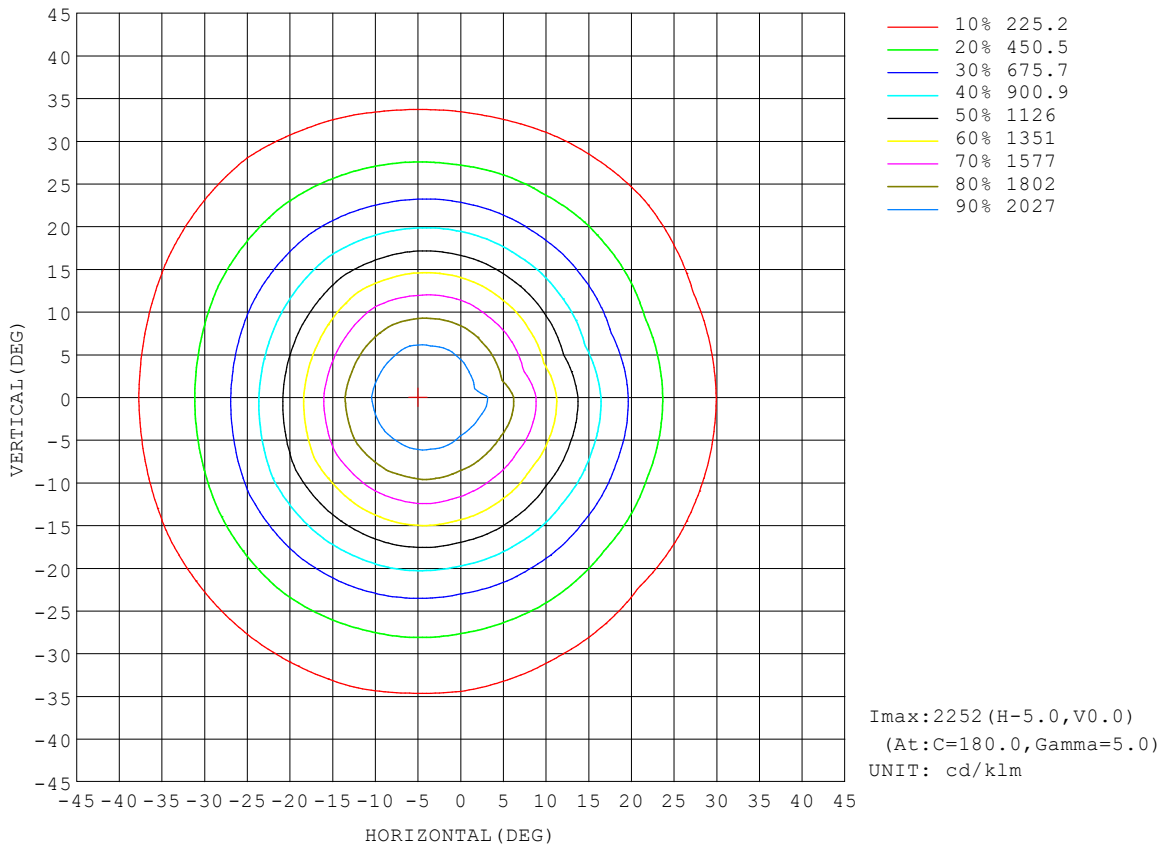
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	81	77	73
0.80	95	89	85	94	89	85	93	88	85	81
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	95	102	97	94	100	96	93	89
1.50	106	101	98	105	100	97	102	99	96	92
2.00	109	104	101	107	103	100	104	101	99	94
2.50	110	106	103	109	105	103	106	103	101	95
3.00	112	108	106	110	107	105	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: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity: 65.0%
 Test Distance: 10.000m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

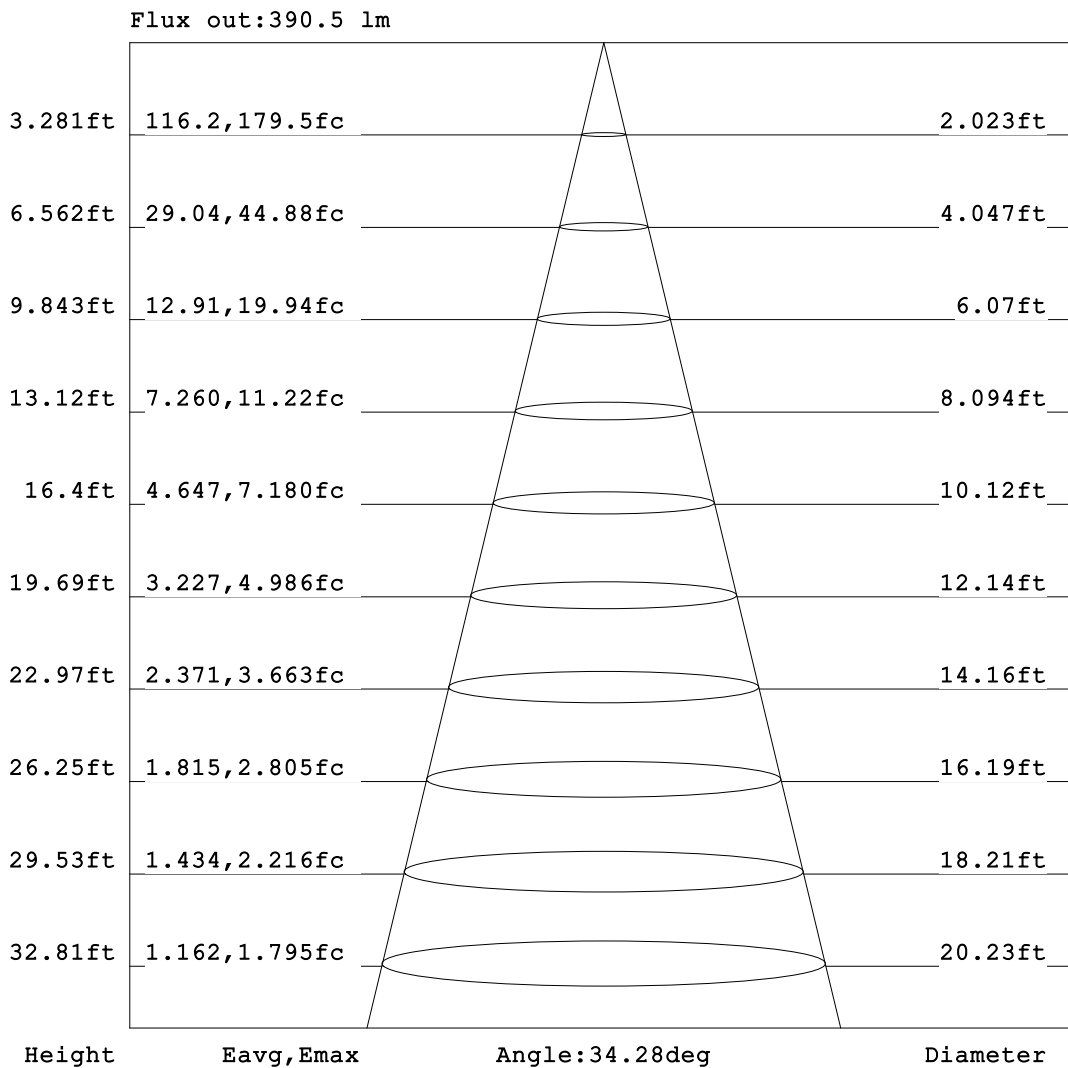


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:
Test Date:2024-10-21

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
Humidity:65.0%
Test Distance:10.000m [K=1.0000]
Remarks:

AAI Figure

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



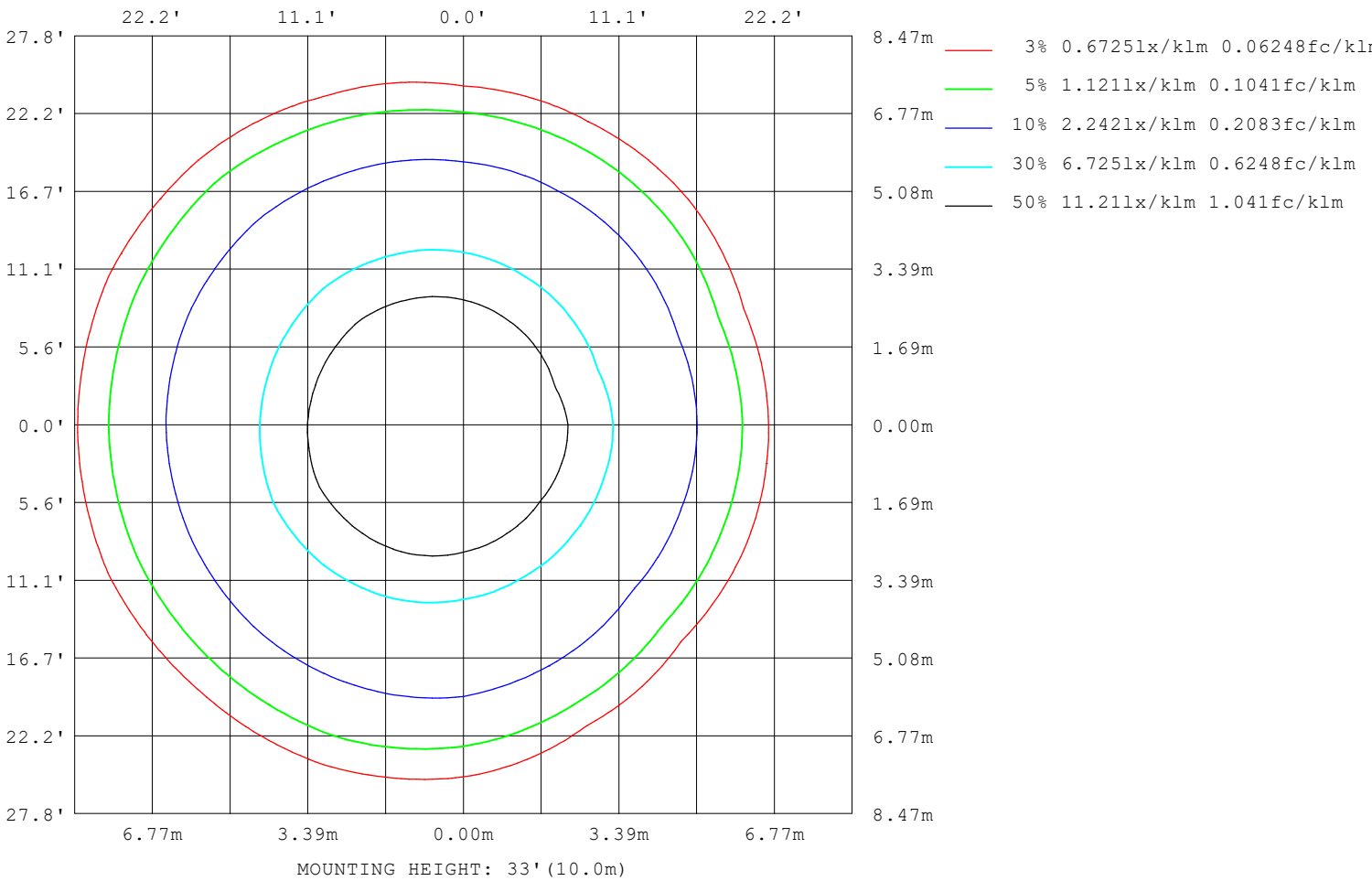
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3°C
 Operators:
 Test Date:2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity:65.0%
 Test Distance:10.000m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity: 65.0%
 Test Distance: 10.000m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

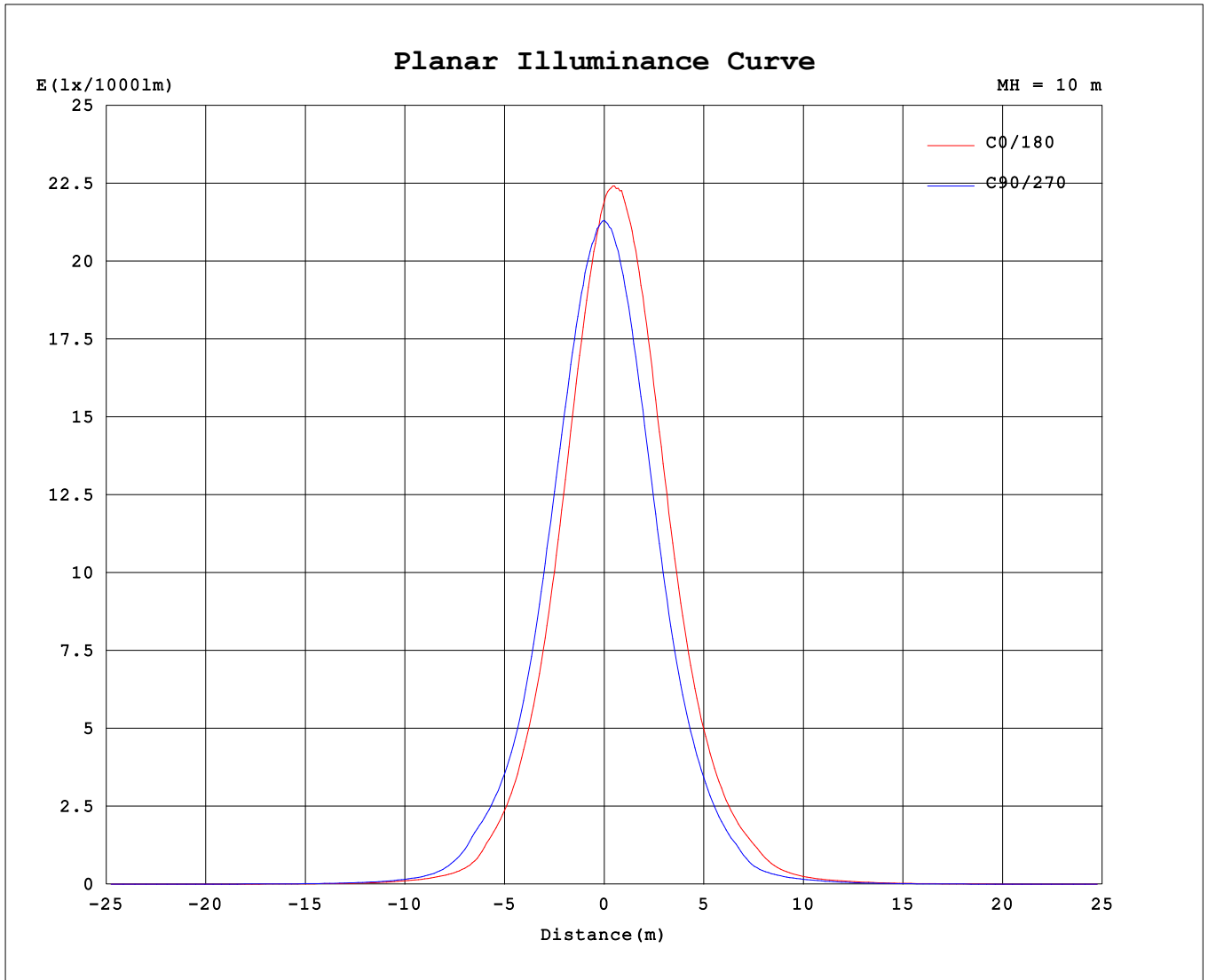
AvgL	cd/m2
L_0~180 (65) av	126
L_0~180 (75) av	111
L_0~180 (85) av	105
L_90~270 (65) av	115
L_90~270 (75) av	105
L_90~270 (85) av	127
L_45 (65) av	120
L_45 (75) av	107
L_45 (85) av	98

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:
 Test Date:2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity:65.0%
 Test Distance:10.000m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity: 65.0%
 Test Distance: 10.000m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.49V I:0.1254A P:14.830W PF:0.9815 Freq:59.98Hz Lamp Flux:861.931x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 2700K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd/klm

C (DEG) \ γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	2192	2180	2160	2144	2131	2115	2115	2118	2192	2180	2160	2144	2131	2115	2115	2118			
5	1897	1909	1913	1954	2009	2077	2143	2185	2252	2211	2159	2087	2000	1915	1860	1822			
10	1470	1482	1510	1592	1699	1828	1932	2017	2057	2003	1924	1800	1683	1556	1463	1397			
15	1022	1029	1070	1170	1294	1444	1573	1675	1667	1607	1543	1403	1265	1132	1031	959			
20	656	660	699	773	881	1020	1131	1220	1204	1157	1100	974	857	750	676	629			
25	393	392	420	497	569	665	753	817	802	773	729	639	555	479	429	384			
30	223	223	229	295	370	421	476	507	506	493	462	398	333	291	260	216			
35	94.4	97.4	96.3	130	203	258	277	294	309	303	281	229	170	135	116	91.5			
40	52.9	52.7	54.1	64.4	87.6	114	126	149	150	147	125	94.7	77.1	67.0	58.9	51.2			
45	31.0	30.8	32.1	37.6	46.3	56.3	63.1	73.4	71.8	72.5	64.5	54.0	45.7	39.3	34.0	29.5			
50	17.1	17.1	18.0	20.9	25.5	31.7	36.7	41.6	41.7	40.9	37.8	32.3	26.9	21.8	18.5	16.3			
55	9.93	10.1	10.5	11.8	14.0	17.4	20.6	23.6	23.4	22.5	20.9	17.7	14.7	12.0	10.4	9.41			
60	7.10	7.12	7.36	7.88	8.85	10.3	11.8	13.4	13.1	12.4	11.5	9.97	8.72	7.71	7.01	6.66			
65	5.42	5.41	5.59	5.88	6.42	7.11	7.91	8.49	8.29	7.95	7.37	6.80	6.09	5.66	5.22	5.07			
70	4.16	4.14	4.29	4.49	4.88	5.29	5.78	6.04	5.92	5.71	5.34	4.96	4.51	4.22	3.92	3.88			
75	3.04	3.00	3.15	3.32	3.67	3.96	4.30	4.47	4.36	4.22	3.94	3.71	3.36	3.15	2.88	2.81			
80	1.98	1.96	2.15	2.33	2.68	2.90	3.19	3.27	3.20	3.16	2.90	2.77	2.45	2.27	1.95	1.81			
85	0.06	0.04	0.05	0.11	1.33	1.92	2.29	2.35	2.29	2.30	2.08	1.95	1.52	0.60	0.00	0.00			
90	0.06	0.06	0.05	0.04	0.04	0.03	0.08	0.64	0.55	0.57	0.14	0.00	0.00	0.00	0.00	0.00			

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:
 Test Date:2024-10-21

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.479
 Humidity:65.0%
 Test Distance:10.000m [K=1.0000]
 Remarks: