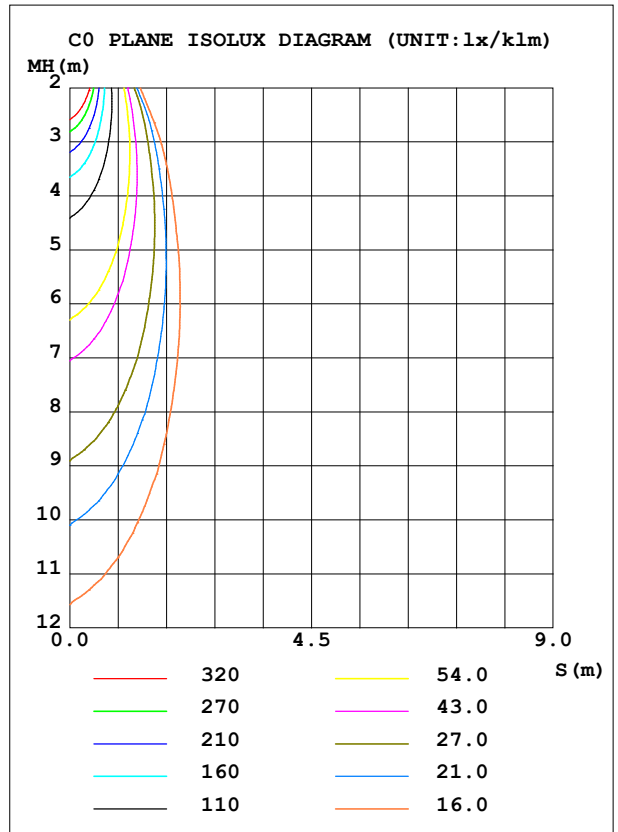
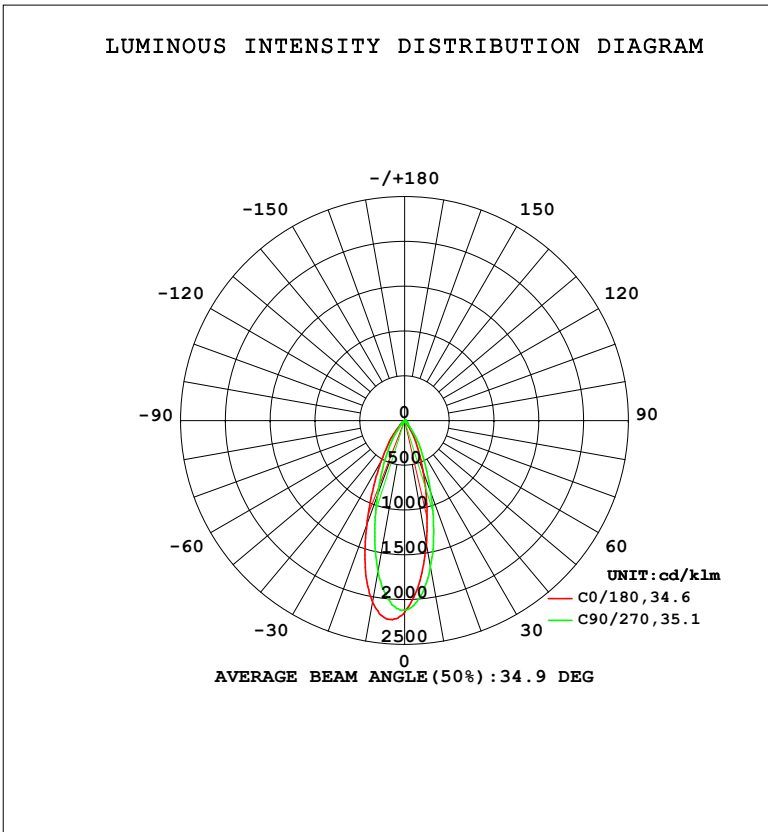


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.49V I:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 63.62 lm/W
MODEL	TUM0001-WH	I _{max} (cd/klm)	2226	S/MH (C0/180)	0.70	
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.58	
RATED VOLTAGE (V)	120.0	TOTAL FLUX (lm/klm)	1000.0	η UP, DN (C0-180)	0.0, 47.6	
NOMINAL FLUX (lm)	926.213	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 52.4	
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:

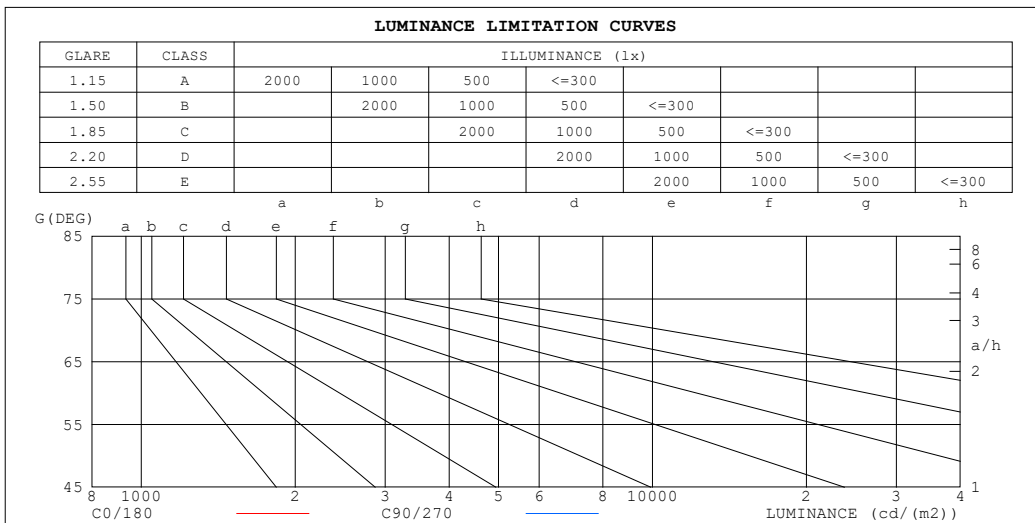
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1407	1455	1663	1926	2059	1945	1711	1469	0- 10	182.0	182.0	18.2,18.2
20	613.0	661.6	852.4	1128	1241	1135	884.0	675.8	10- 20	356.3	538.4	53.8,53.8
30	203.1	218.9	354.1	474.9	526.7	486.4	349.3	255.8	20- 30	269.3	807.7	80.8,80.8
40	49.03	51.53	82.46	129.3	163.5	133.8	82.71	57.73	30- 40	125.3	933.0	93.3,93.3
50	15.69	17.11	25.07	37.43	43.90	38.96	27.20	18.26	40- 50	40.27	973.3	97.3,97.3
60	6.742	7.110	8.732	11.98	13.74	11.78	8.792	6.989	50- 60	14.83	988.1	98.8,98.8
70	3.953	4.132	4.793	5.768	5.993	5.416	4.570	3.940	60- 70	6.650	994.8	99.5,99.5
80	1.817	2.020	2.633	3.218	3.259	2.974	2.502	1.969	70- 80	3.813	998.6	99.9,99.9
90	0.0525	0.0450	0.0450	0.1124	0.9145	0.3823	0	0	80- 90	1.398	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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	5	123
80	87	126
75	92	117
70	96	117
65	102	125
60	112	146
55	135	201
50	203	325
45	336	531

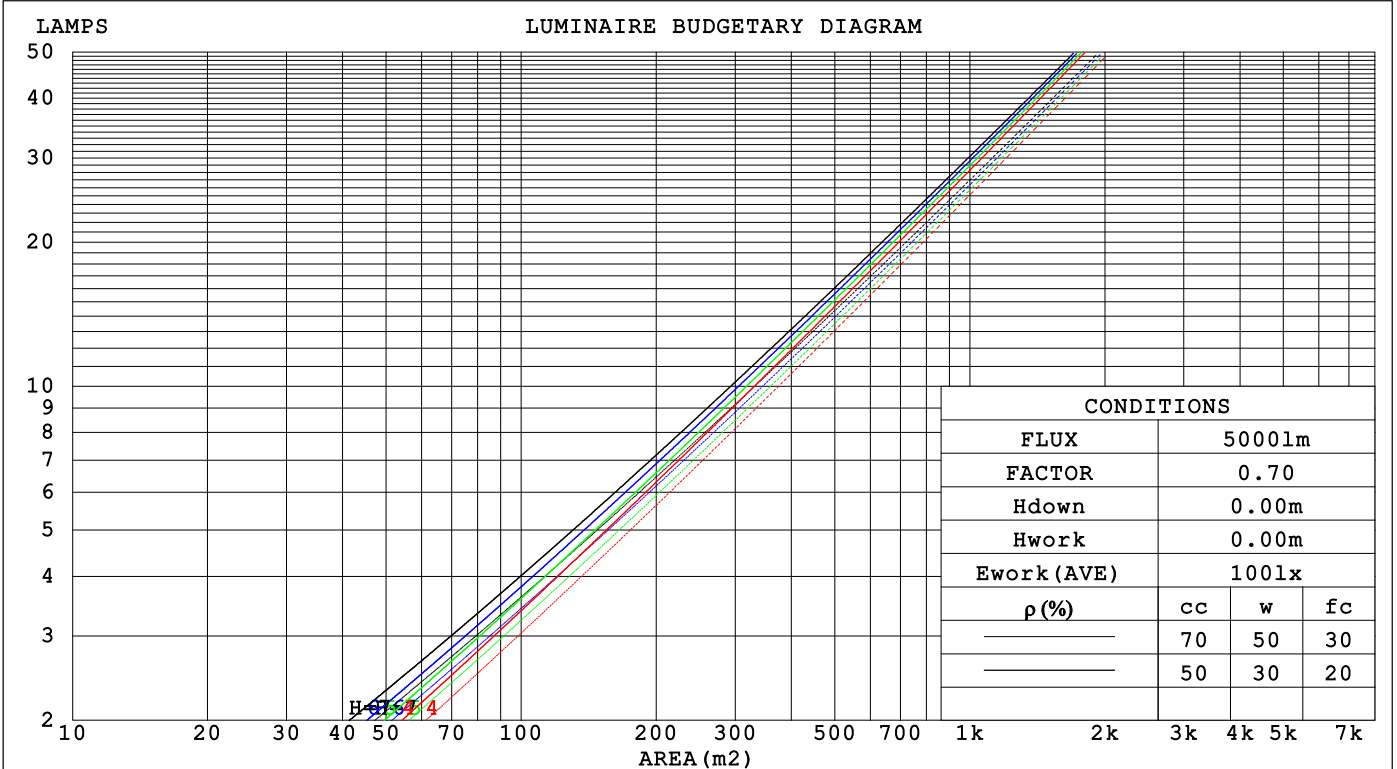
C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	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			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	.97	1.03	.99	.96	.99	.97	.94	.96	.94	.92	.94	.92	.90	.89
3.0	.98	.94	.90	.97	.93	.89	.94	.91	.88	.92	.89	.86	.90	.87	.85	.84
4.0	.93	.88	.84	.92	.87	.83	.89	.85	.82	.87	.84	.81	.86	.83	.80	.79
5.0	.88	.82	.78	.87	.82	.78	.85	.81	.77	.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	.78	.73	.70	.77	.73	.69	.76	.72	.69	.75	.71	.69	.67
8.0	.75	.70	.66	.75	.70	.66	.74	.69	.66	.73	.69	.66	.72	.68	.65	.64
9.0	.72	.67	.63	.72	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.62	.61
10.0	.69	.64	.60	.68	.64	.60	.68	.63	.60	.67	.63	.60	.66	.62	.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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz		
Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	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	.137	.079	.025	.126	.073	.024	
2.0	.158	.087	.027	.153	.084	.026	.142	.079	.025	.133	.074	.023	.124	.070	.022	
3.0	.150	.080	.024	.145	.078	.023	.136	.074	.022	.128	.070	.021	.120	.066	.021	
4.0	.142	.074	.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	.019	.112	.060	.018	
6.0	.128	.064	.018	.125	.063	.018	.119	.061	.018	.113	.059	.017	.108	.057	.017	
7.0	.122	.060	.017	.119	.059	.017	.114	.058	.017	.109	.056	.016	.105	.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	.098	.050	.014	
10.0	.107	.051	.014	.105	.051	.014	.101	.050	.014	.098	.049	.014	.094	.048	.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	.045	.044	.035	.027	.014	.011	.009	
5.0	.121	.087	.061	.104	.075	.053	.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	.070	.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	.032	.019	.011	.010	.006	.004	

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:

UGR(Unified Glare Rating) Table

Test:U:120.49V I:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	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	0.7	1.6	1.0	1.8	1.9	3.6	4.4	3.8	4.6	4.8
3H	0.9	1.7	1.2	1.9	2.1	3.6	4.4	3.9	4.6	4.8
4H	1.0	1.8	1.3	2.0	2.2	3.7	4.4	4.0	4.7	4.9
6H	1.1	1.8	1.4	2.1	2.3	3.8	4.5	4.0	4.7	4.9
8H	1.1	1.8	1.4	2.1	2.3	3.8	4.5	4.1	4.7	5.0
12H	1.1	1.7	1.4	2.0	2.3	3.8	4.5	4.1	4.7	5.0
4H 2H	0.7	1.5	1.0	1.7	1.9	3.4	4.2	3.7	4.4	4.6
3H	1.0	1.7	1.3	1.9	2.2	3.6	4.2	3.9	4.5	4.7
4H	1.2	1.8	1.6	2.1	2.4	3.7	4.2	4.0	4.5	4.8
6H	1.4	1.9	1.8	2.3	2.6	3.8	4.3	4.2	4.6	5.0
8H	1.4	1.9	1.8	2.2	2.6	3.9	4.4	4.3	4.7	5.1
12H	1.4	1.8	1.8	2.2	2.6	3.9	4.4	4.3	4.7	5.1
8H 4H	1.3	1.7	1.6	2.1	2.5	3.6	4.1	4.0	4.4	4.8
6H	1.5	1.9	2.0	2.3	2.7	3.8	4.2	4.2	4.6	5.0
8H	1.5	1.9	2.0	2.3	2.7	3.9	4.3	4.4	4.7	5.1
12H	1.5	1.8	1.9	2.2	2.7	4.0	4.3	4.4	4.7	5.2
12H 4H	1.2	1.7	1.6	2.1	2.4	3.6	4.0	4.0	4.4	4.8
6H	1.5	1.9	2.0	2.3	2.7	3.8	4.1	4.2	4.5	5.0
8H	1.5	1.8	2.0	2.3	2.7	3.9	4.2	4.4	4.6	5.1
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.4 / - 2.1					+ 3.2 / - 2.6				
1.5H	+ 2.6 / - 2.0					+ 4.9 / - 2.9				
2.0H	+ 2.6 / - 1.3					+ 3.8 / - 1.6				

CIE Pub.117, 926.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.3)
Area: 0.111111 m2

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:

UTILIZATION FACTORS TABLE

Test:U:120.49V I:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

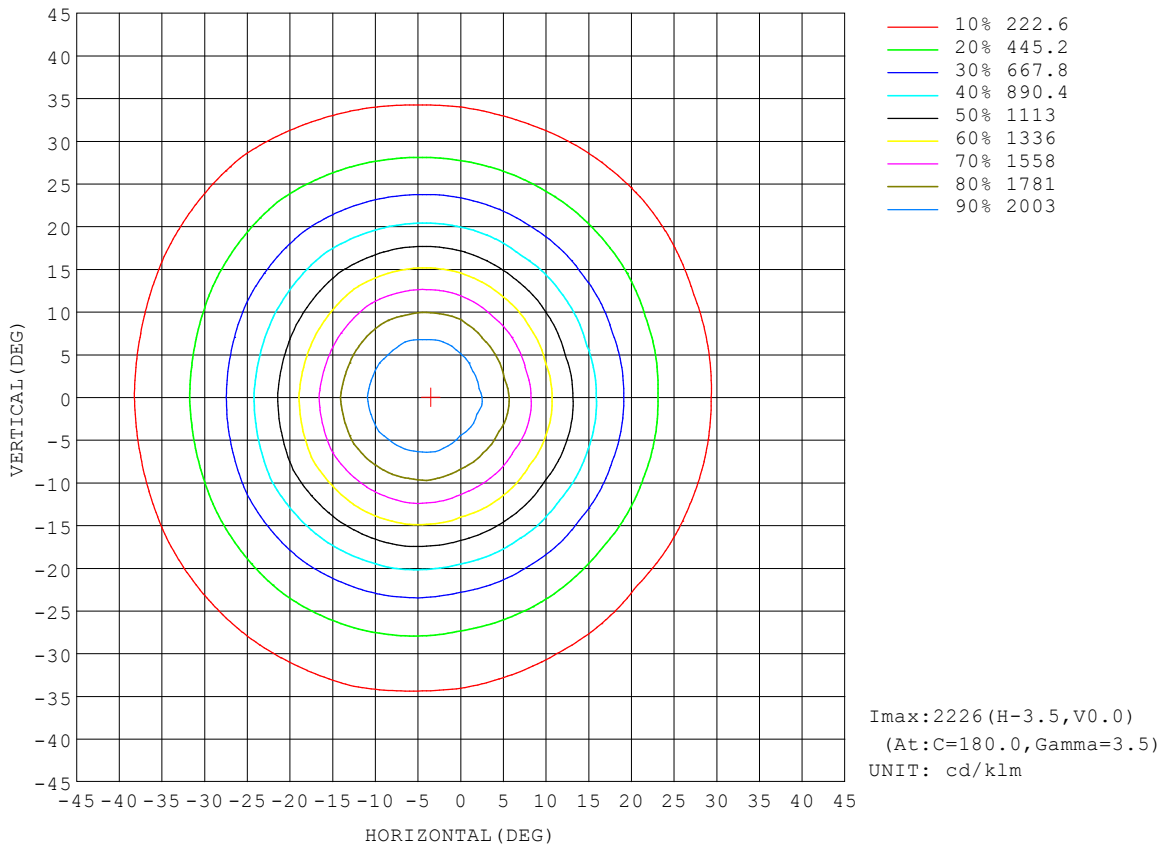
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	80	77	73
0.80	95	89	85	94	89	85	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	102	105	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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

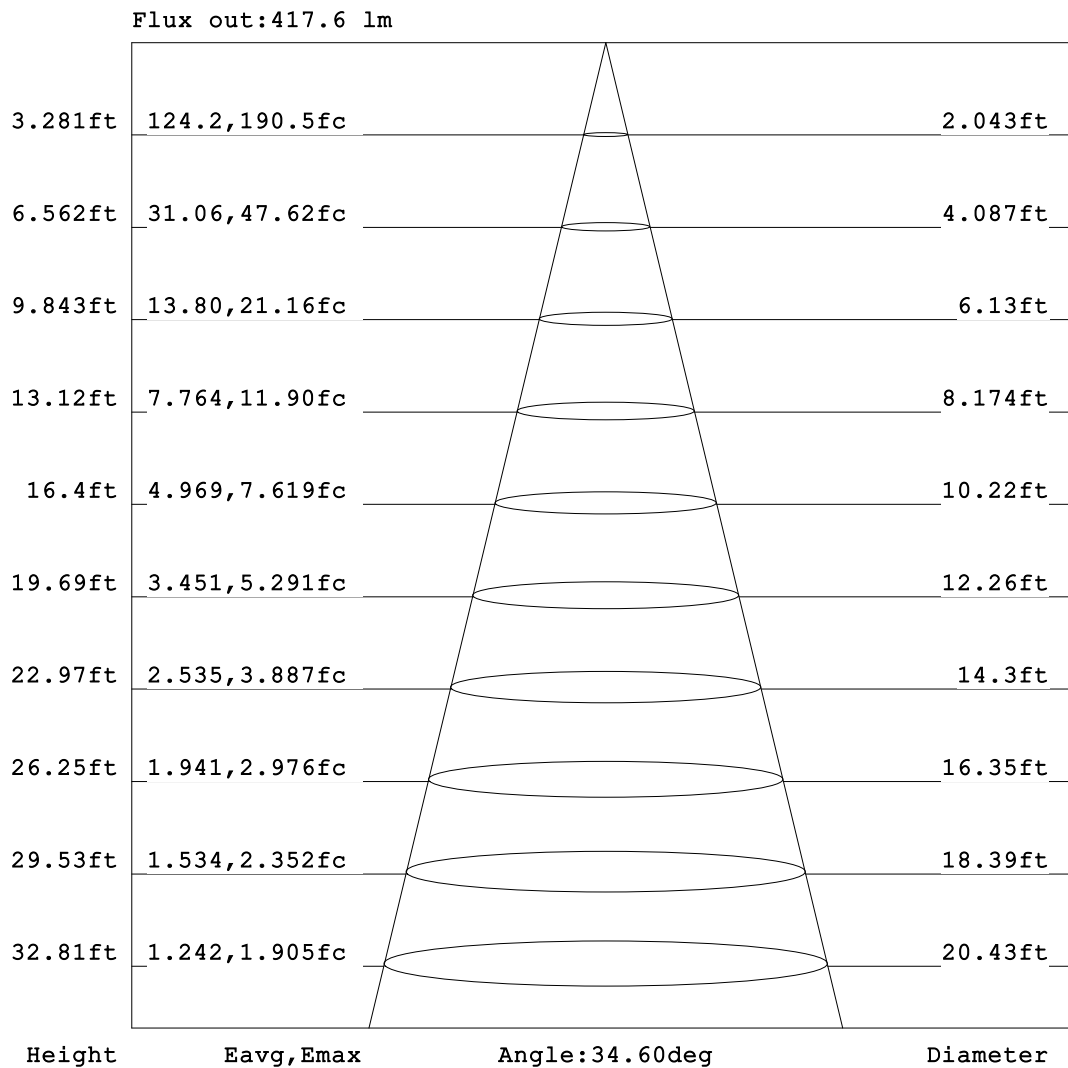


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:
 Test Date:2024-10-21

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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



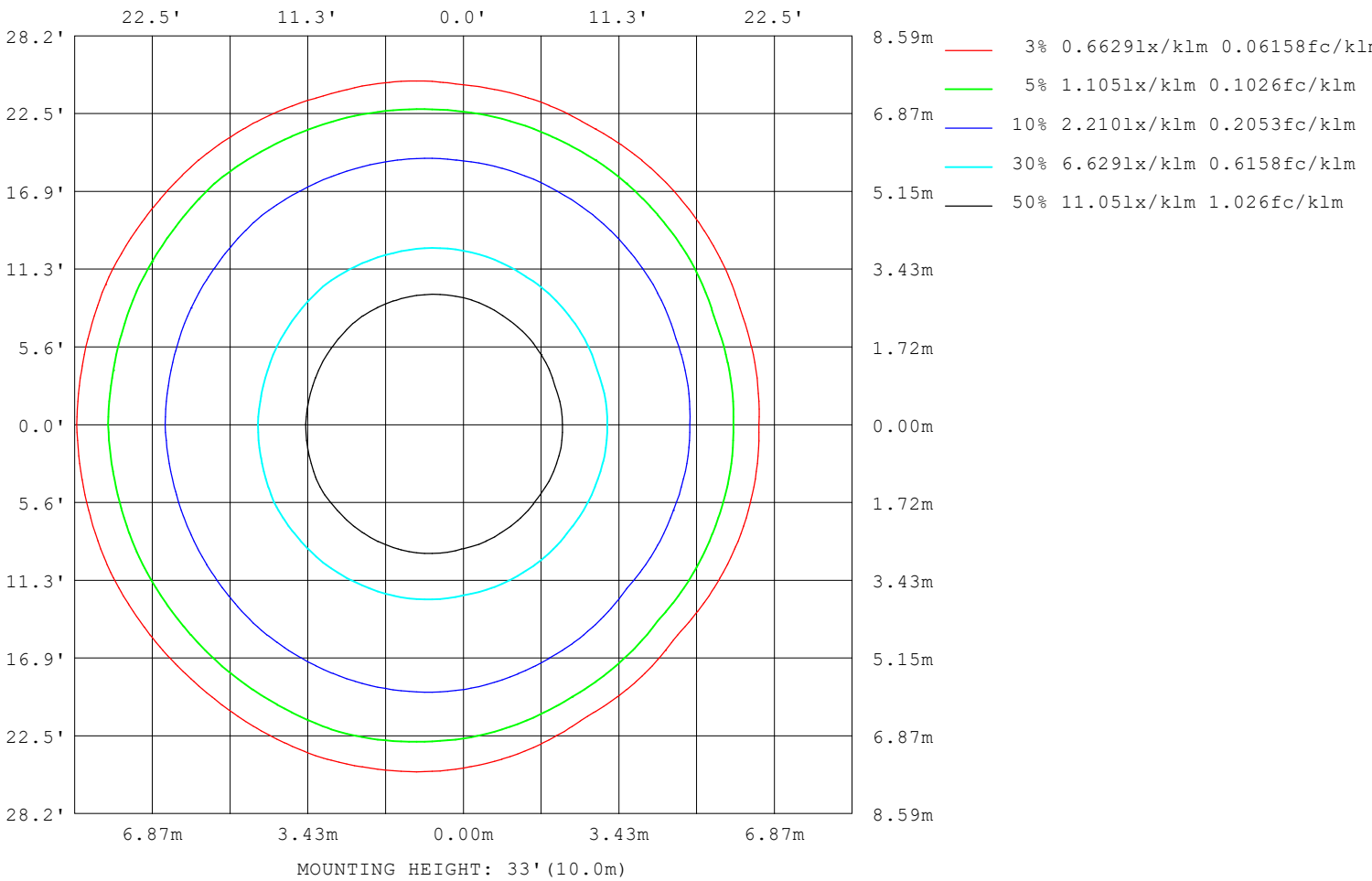
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

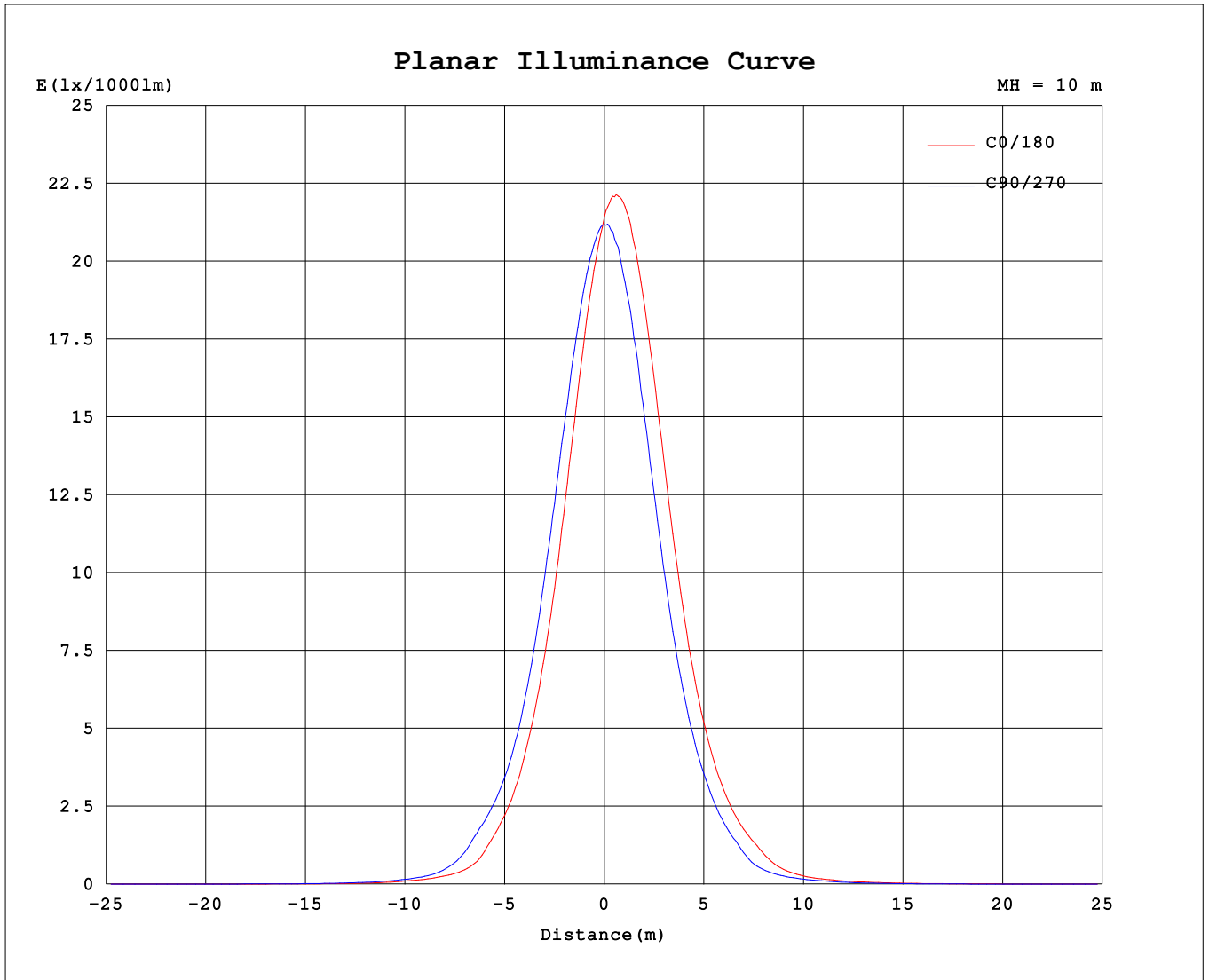
AvgL	cd/m2
L_0~180 (65) av	135
L_0~180 (75) av	118
L_0~180 (85) av	115
L_90~270 (65) av	123
L_90~270 (75) av	113
L_90~270 (85) av	136
L_45 (65) av	129
L_45 (75) av	115
L_45 (85) av	108

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:0.1232A P:14.557W PF:0.9811 Freq:59.98Hz Lamp Flux:926.213x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3000K	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	2142	2141	2139	2128	2118	2119	2124	2120	2142	2141	2139	2128	2118	2119	2124	2120			
5	1837	1845	1863	1923	1981	2074	2139	2195	2224	2203	2164	2088	2009	1924	1862	1824			
10	1407	1423	1455	1555	1663	1818	1926	2023	2059	2019	1945	1830	1711	1569	1469	1399			
15	961	978	1024	1130	1257	1427	1564	1677	1699	1651	1577	1438	1296	1140	1038	960			
20	613	624	662	746	852	1004	1128	1224	1241	1200	1135	1010	884	763	676	627			
25	365	368	397	474	550	656	752	823	835	807	758	665	574	488	427	381			
30	203	205	219	280	354	415	475	515	527	519	486	418	349	297	256	211			
35	86.0	89.5	91.0	120	188	252	279	300	322	315	293	244	185	136	112	91.5			
40	49.0	49.5	51.5	61.3	82.5	111	129	153	164	157	134	102	82.7	67.2	57.7	50.9			
45	28.5	28.7	30.5	36.3	45.0	55.9	64.3	75.0	75.9	75.4	66.6	55.9	47.0	39.3	33.6	29.1			
50	15.7	16.0	17.1	20.2	25.1	32.0	37.4	42.5	43.9	42.2	39.0	33.1	27.2	21.6	18.3	16.1			
55	9.32	9.52	10.1	11.5	13.8	17.6	20.9	24.0	24.6	23.5	21.5	18.1	14.8	11.9	10.3	9.34			
60	6.74	6.79	7.11	7.71	8.73	10.3	12.0	13.6	13.7	13.0	11.8	10.2	8.79	7.68	6.99	6.64			
65	5.18	5.19	5.39	5.72	6.32	7.11	7.94	8.56	8.55	8.12	7.52	6.89	6.15	5.67	5.23	5.09			
70	3.95	3.95	4.13	4.39	4.79	5.25	5.77	6.08	5.99	5.79	5.42	5.02	4.57	4.24	3.94	3.87			
75	2.87	2.85	3.05	3.24	3.63	3.93	4.31	4.48	4.44	4.32	4.01	3.76	3.41	3.18	2.90	2.82			
80	1.82	1.80	2.02	2.27	2.63	2.85	3.22	3.30	3.26	3.23	2.97	2.82	2.50	2.30	1.97	1.79			
85	0.05	0.05	0.06	0.06	1.29	1.93	2.31	2.37	2.35	2.35	2.15	2.03	1.56	0.54	0.00	0.00			
90	0.05	0.05	0.04	0.05	0.04	0.04	0.11	0.73	0.91	0.82	0.38	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: