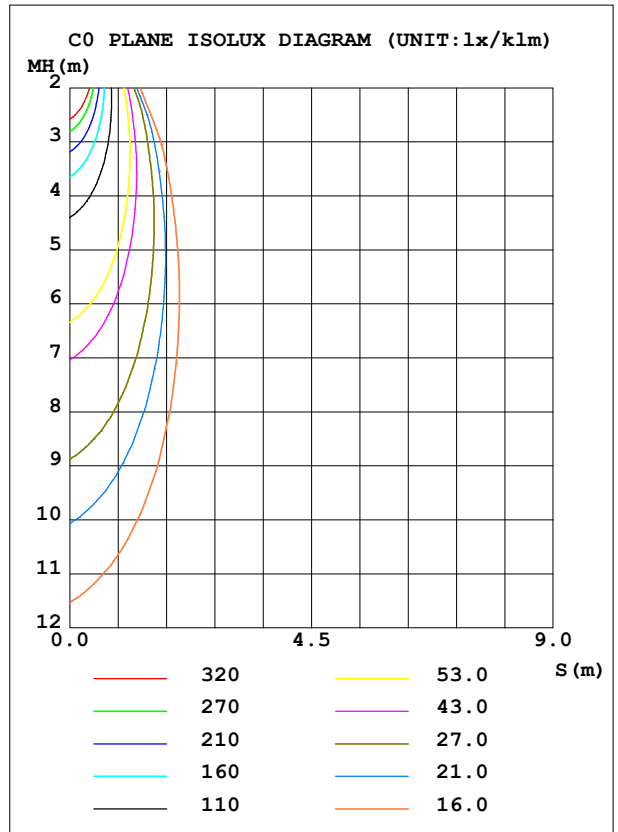
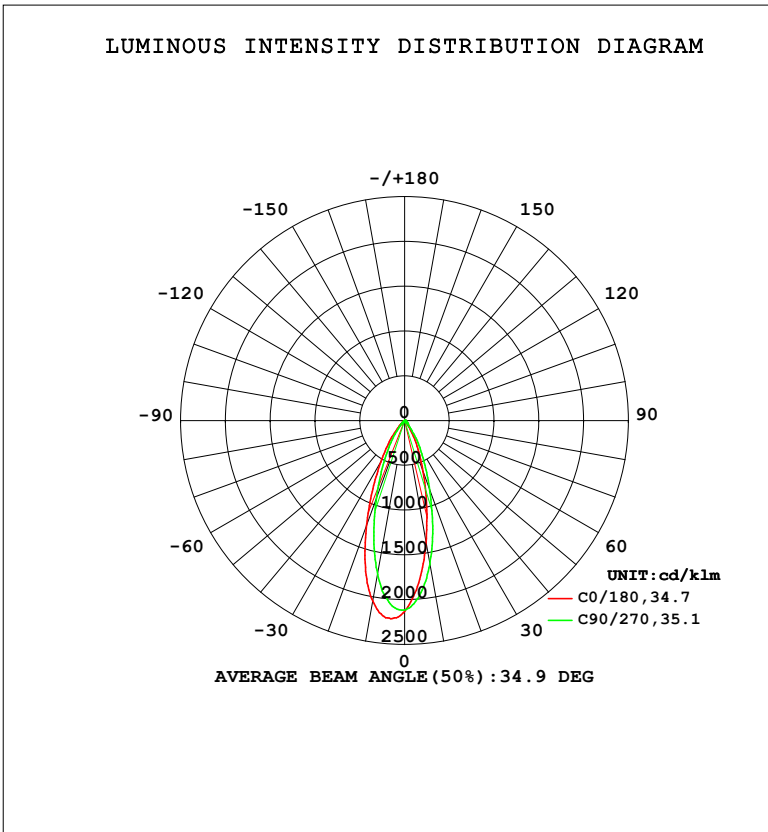


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 72.24 lm/W
MODEL	TUM0001-WH	I _{max} (cd/klm)	2216	S/MH (C0/180)	0.71	
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.60	
RATED VOLTAGE (V)	120.0	TOTAL FLUX (lm/klm)	1000.00	η UP, DN (C0-180)	0.0, 46.6	
NOMINAL FLUX (lm)	1030.01	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 53.4	
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:

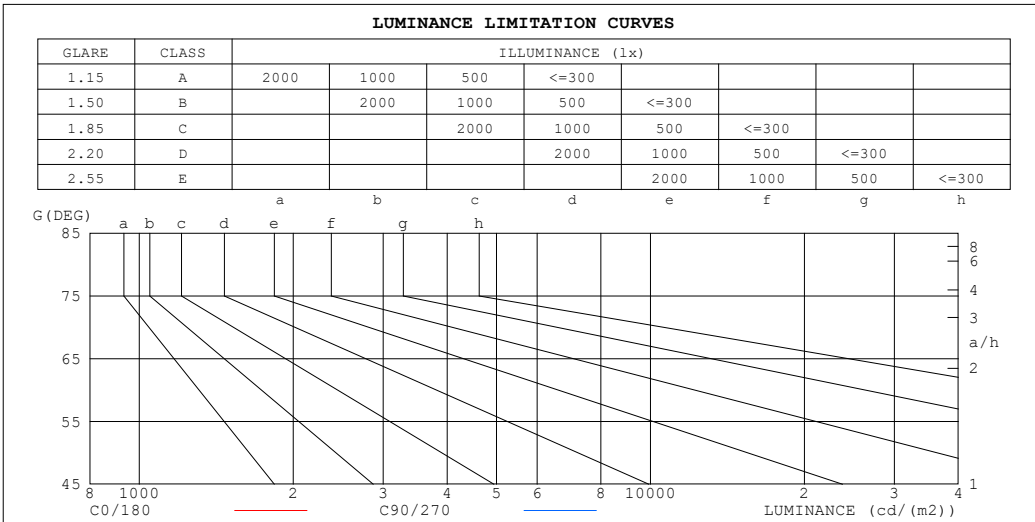
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1389	1430	1630	1904	2046	1978	1747	1486	0- 10	181.6	181.6	18.2,18.2
20	604.9	635.2	819.6	1101	1244	1165	925.4	694.0	10- 20	355.8	537.4	53.7,53.7
30	199.3	218.5	331.6	465.6	532.8	505.7	370.0	251.2	20- 30	269.6	806.9	80.7,80.7
40	48.25	51.01	76.65	128.3	166.1	140.1	91.24	57.38	30- 40	125.8	932.8	93.3,93.3
50	15.39	16.85	24.73	37.56	44.53	39.33	27.67	18.13	40- 50	40.51	973.3	97.3,97.3
60	6.650	6.961	8.614	11.97	13.88	11.94	8.883	7.005	50- 60	14.87	988.1	98.8,98.8
70	3.905	4.020	4.708	5.707	6.015	5.483	4.641	4.008	60- 70	6.648	994.8	99.5,99.5
80	1.763	1.978	2.563	3.177	3.267	3.058	2.559	2.013	70- 80	3.812	998.6	99.9,99.9
90	0.0539	0.0472	0.0472	0.1281	1.011	0.4786	0	0	80- 90	1.406	1000.0	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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	6	133
80	94	137
75	101	127
70	106	128
65	112	136
60	123	160
55	148	221
50	222	357
45	367	574

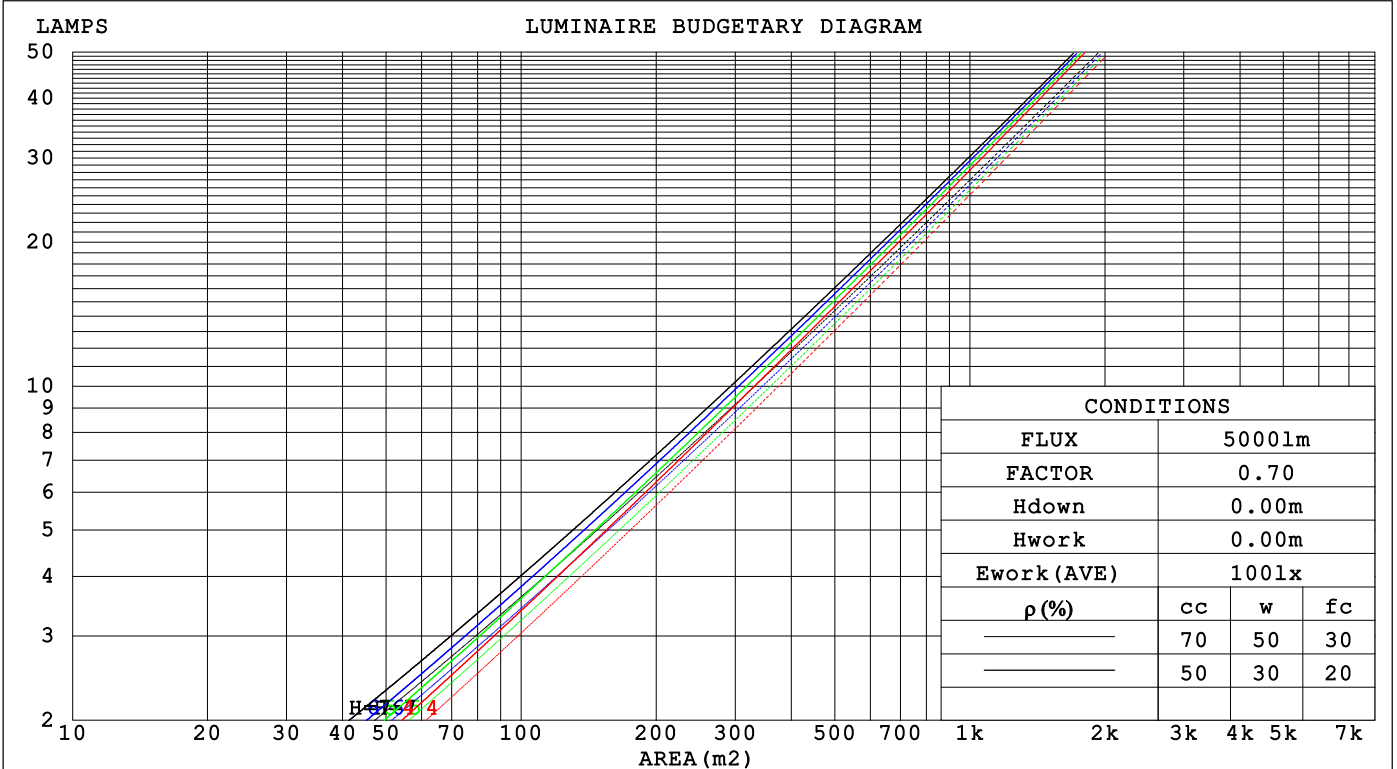
C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators:
 Test Date: 2024-10-21

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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	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	.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	.91	.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	.76	.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	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.62	.61
10.0	.69	.64	.60	.68	.63	.60	.68	.63	.60	.67	.63	.60	.66	.62	.60	.58



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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz		
Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	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	.168	.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	.067	.021	
4.0	.142	.074	.022	.138	.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	.114	.059	.017	.109	.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	.095	.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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	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	0.6	1.5	0.8	1.6	1.8	3.2	4.1	3.4	4.2	4.4
3H	0.8	1.6	1.0	1.8	2.0	3.3	4.1	3.5	4.2	4.4
4H	0.9	1.7	1.2	1.9	2.1	3.3	4.1	3.6	4.3	4.5
6H	1.0	1.7	1.3	2.0	2.2	3.4	4.1	3.7	4.3	4.6
8H	1.0	1.7	1.3	1.9	2.2	3.4	4.1	3.7	4.4	4.6
12H	1.0	1.6	1.3	1.9	2.1	3.5	4.1	3.8	4.4	4.6
4H 2H	0.6	1.3	0.8	1.5	1.8	3.0	3.8	3.3	4.0	4.2
3H	0.9	1.5	1.2	1.8	2.1	3.2	3.8	3.5	4.1	4.4
4H	1.1	1.7	1.4	2.0	2.3	3.3	3.9	3.6	4.2	4.5
6H	1.3	1.8	1.7	2.1	2.5	3.5	4.0	3.8	4.3	4.6
8H	1.3	1.8	1.7	2.1	2.5	3.5	4.0	3.9	4.4	4.7
12H	1.2	1.7	1.6	2.0	2.4	3.6	4.0	4.0	4.4	4.8
8H 4H	1.1	1.6	1.5	2.0	2.3	3.2	3.7	3.6	4.1	4.5
6H	1.4	1.8	1.8	2.2	2.6	3.5	3.9	3.9	4.3	4.7
8H	1.4	1.7	1.8	2.2	2.6	3.6	3.9	4.0	4.4	4.8
12H	1.3	1.6	1.8	2.1	2.5	3.7	4.0	4.1	4.4	4.9
12H 4H	1.1	1.5	1.5	1.9	2.3	3.2	3.7	3.6	4.0	4.4
6H	1.4	1.7	1.8	2.2	2.6	3.4	3.8	3.9	4.2	4.6
8H	1.4	1.7	1.9	2.1	2.6	3.6	3.9	4.0	4.3	4.8

Variations with the observer position at spacings(CIE Pub.117):		
S = 1.0H	+ 1.4 / - 2.1	+ 2.9 / - 2.5
1.5H	+ 2.6 / - 2.0	+ 4.5 / - 2.7
2.0H	+ 2.6 / - 1.2	+ 3.8 / - 1.6

CIE Pub.117, 1030 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.1)
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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

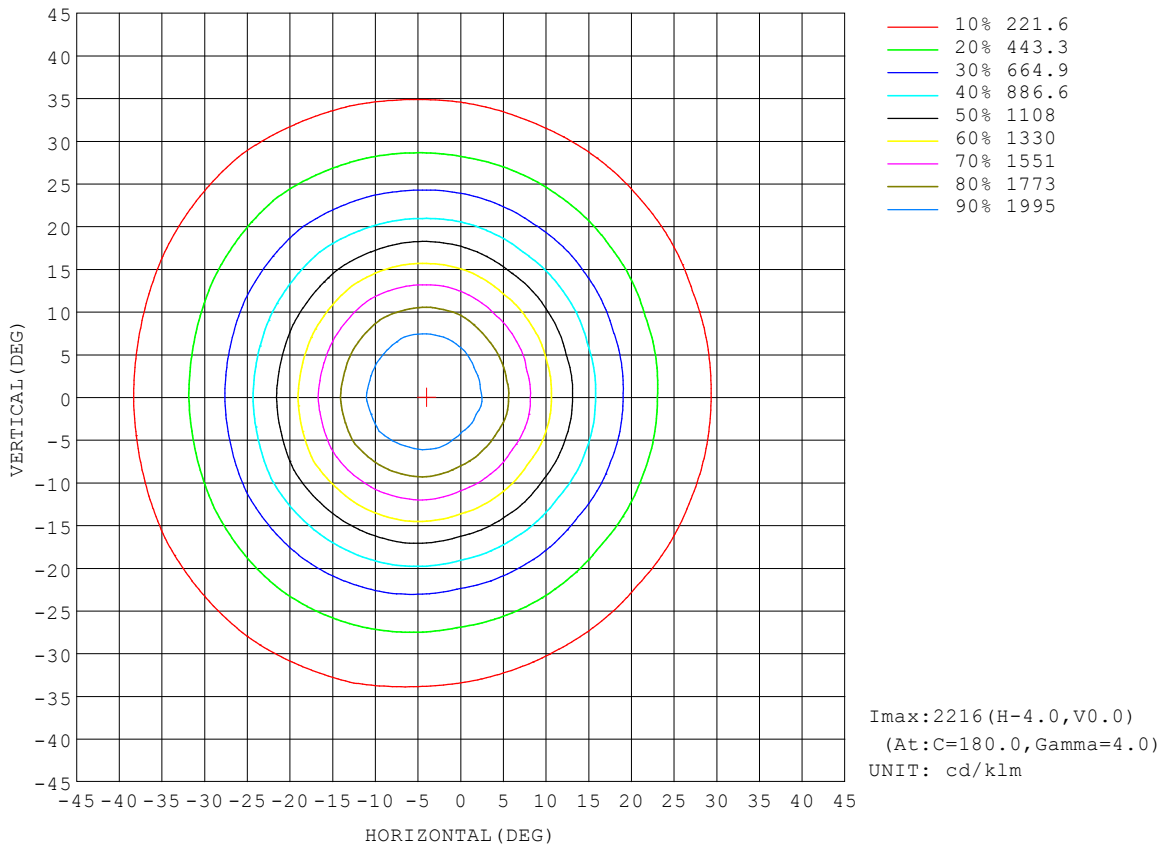
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	80	77	73
0.80	95	89	85	94	89	85	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	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	107	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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

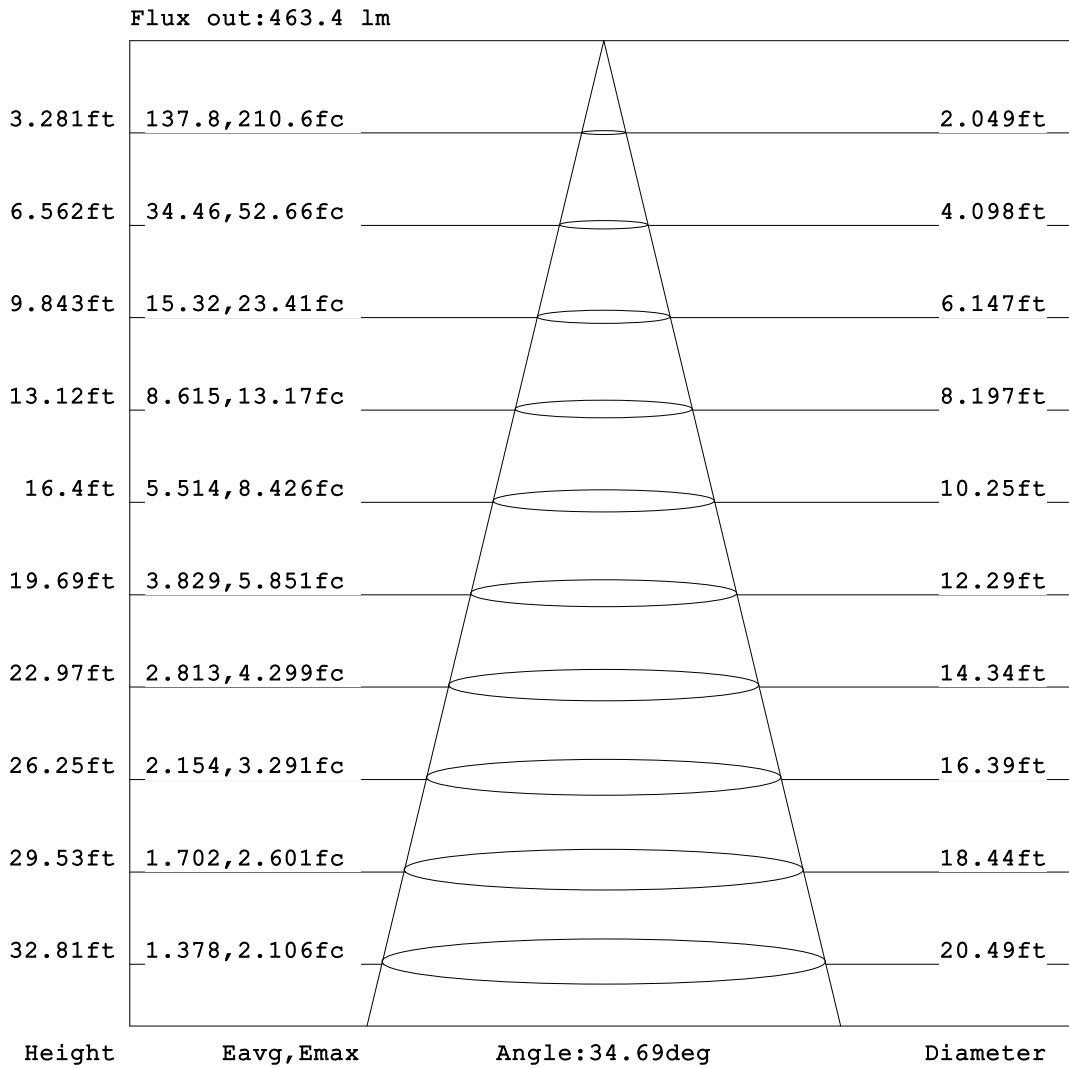


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:
 Test Date:2024-10-21

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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



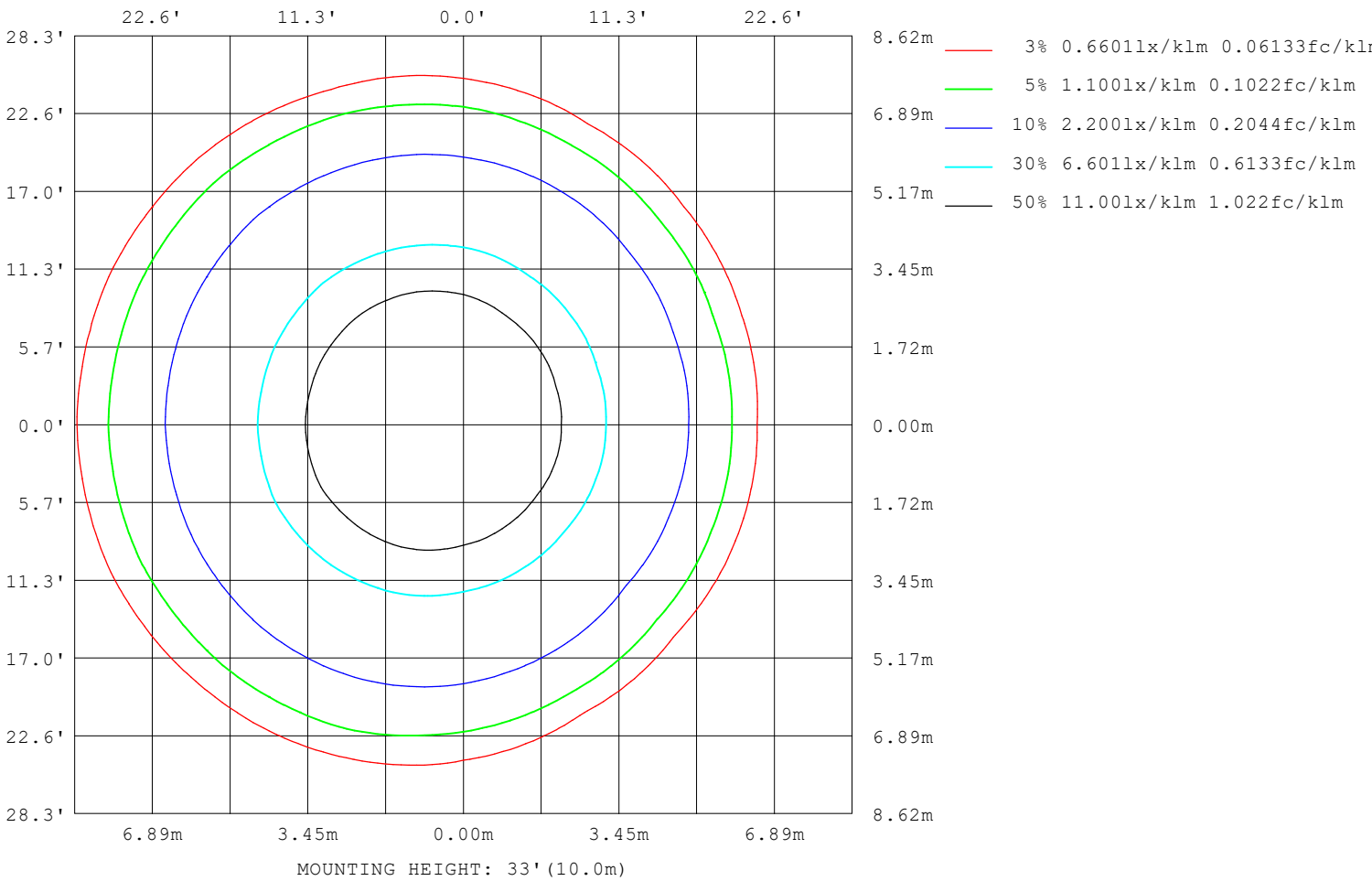
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	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:120.48V I:0.1207A P:14.258W PF:0.9805 Freq:59.98Hz Lamp Flux:1030.01x1 lm		
NAME: TUM0001-WH	TYPE:	WEIGHT:
SPEC.: 3500K	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

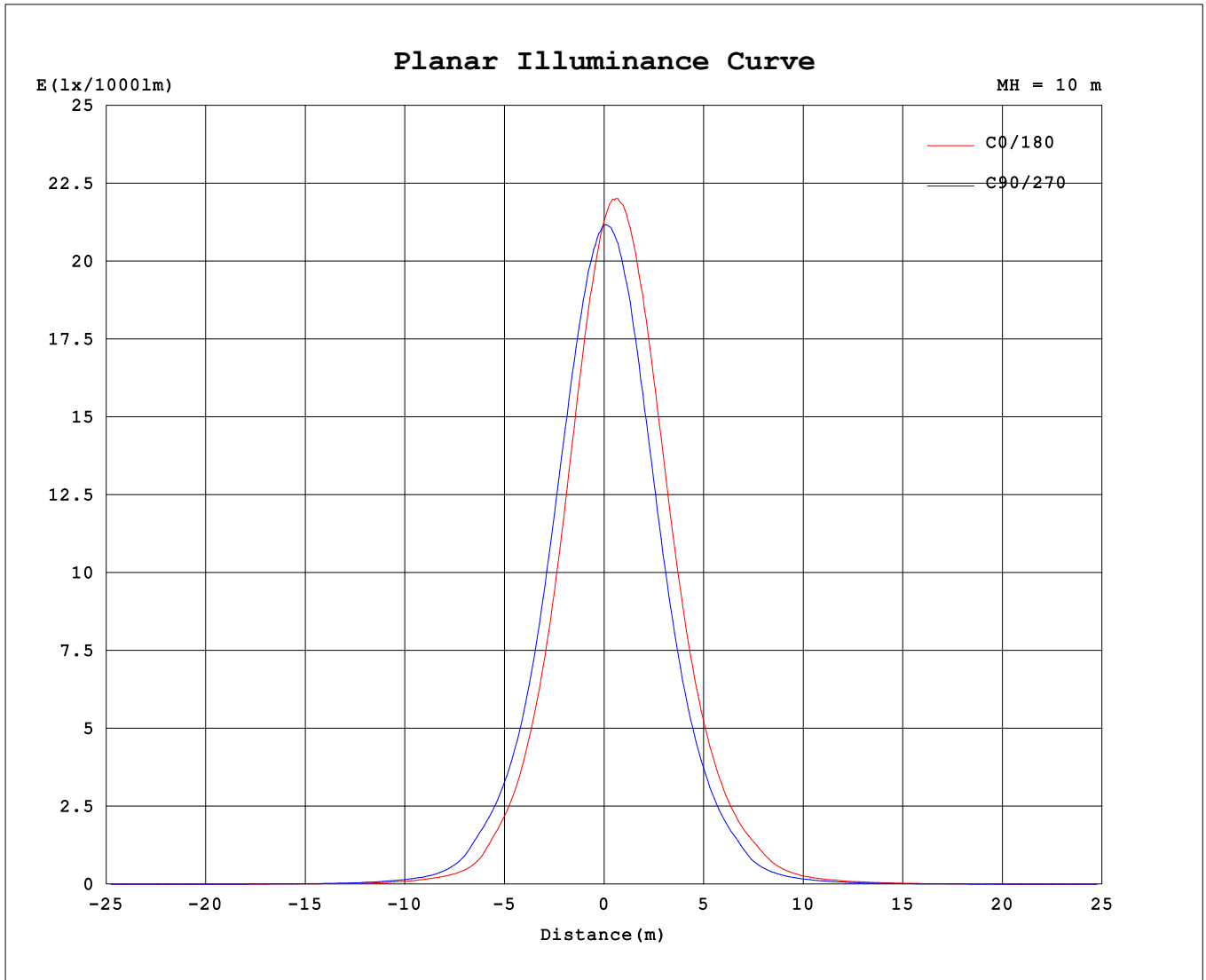
AvgL	cd/m2
L_0~180 (65) av	150
L_0~180 (75) av	130
L_0~180 (85) av	130
L_90~270 (65) av	136
L_90~270 (75) av	125
L_90~270 (85) av	152
L_45 (65) av	143
L_45 (75) av	128
L_45 (85) av	122

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:

