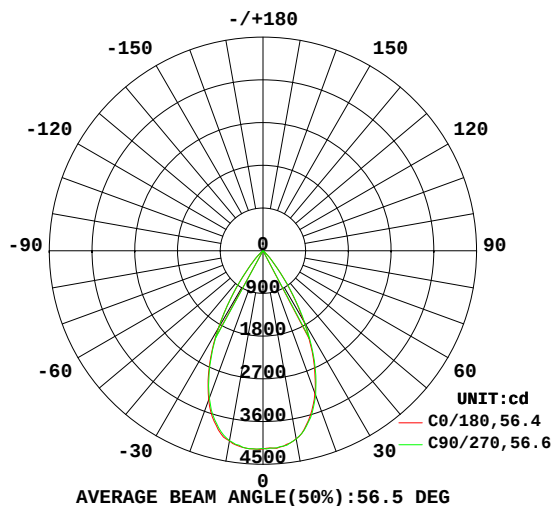


LUMINAIRE PHOTOMETRIC TEST REPORT

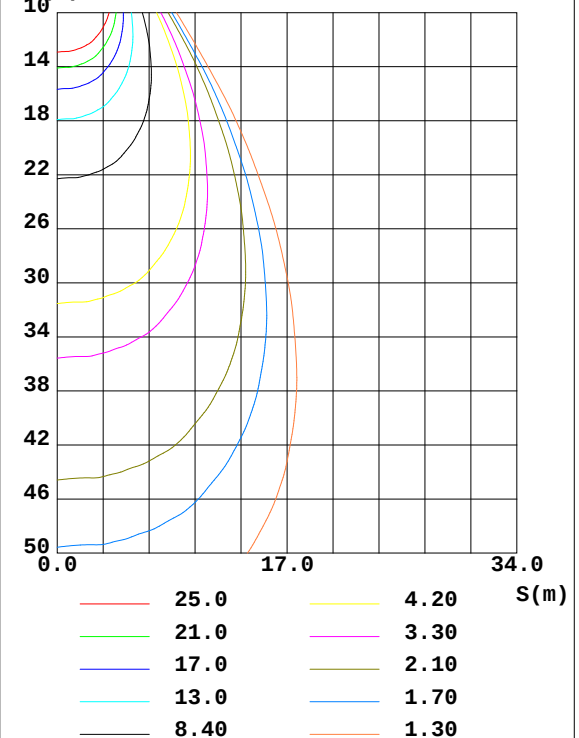
Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 92.33 lm/W			
MODEL	TB32171211 4000K	I _{max} (cd)	4191	S/MH(C0/180)	0.86
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	0.86
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	3432.3	η UP, DN(C0-180)	0.0, 49.3
NOMINAL FLUX(lm)	3432.27	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	0.90

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

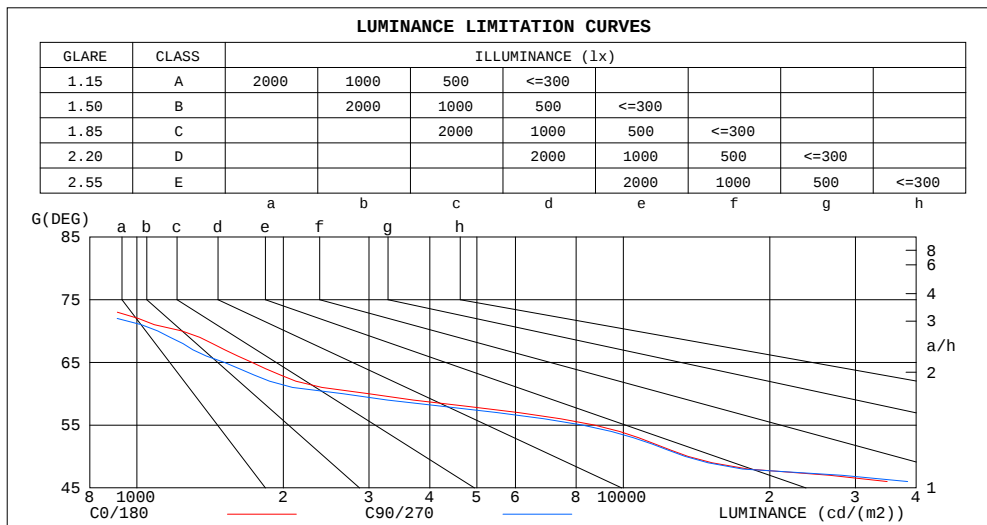
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4020	4028	4029	4052	4067	4076	4064	4042	0- 10	393.8	393.8	11.5, 11.5
20	3199	3190	3244	3283	3344	3335	3307	3274	10- 20	1045	1439	41.9, 41.9
30	1728	1735	1772	1827	1885	1891	1865	1814	20- 30	1174	2612	76.1, 76.1
40	403.1	402.5	416.8	437.9	467.5	484.8	464.7	440.5	30- 40	652.1	3264	95.1, 95.1
50	40.69	40.44	40.12	41.01	45.10	46.83	46.19	43.87	40- 50	142.7	3407	99.3, 99.3
60	6.972	6.610	6.167	5.923	6.022	6.702	7.141	7.502	50- 60	20.71	3428	99.9, 99.9
70	1.972	1.898	1.759	1.612	1.581	1.693	1.804	1.831	60- 70	3.288	3431	100, 100
80	0.4714	0.4869	0.4250	0.3981	0.3161	0.3700	0.4318	0.4086	70- 80	0.9292	3432	100, 100
90	0.2123	0.2123	0.2007	0.1892	0.0270	0.0232	0.0232	0.0232	80- 90	0.2460	3432	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		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	685	571
80	583	525
75	591	520
70	1237	1103
65	1723	1511
60	2992	2647
55	8717	8233
50	13584	13394
45	49704	48313

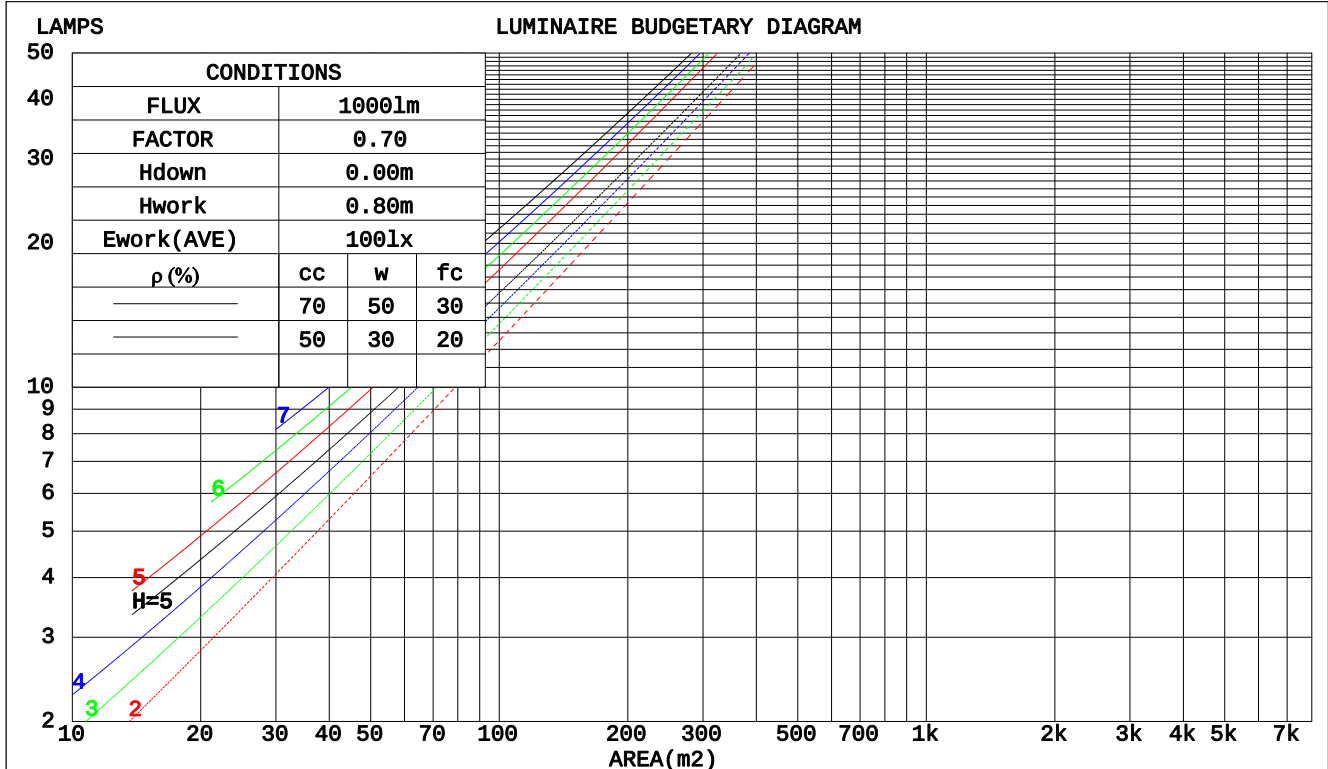
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	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	Coefficients of Utilization(CU)															
	RCR:Room Cavity Ratio															
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	.99	.99	.98	.97	.96	.94
2.0	1.04	.99	.97	1.02	.99	.96	.99	.96	.93	.96	.93	.91	.93	.91	.90	.88
3.0	.97	.92	.88	.96	.91	.88	.93	.89	.86	.91	.88	.85	.88	.86	.84	.82
4.0	.91	.86	.82	.90	.85	.81	.88	.84	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.86	.80	.76	.85	.79	.75	.83	.78	.75	.81	.77	.74	.80	.76	.74	.72
6.0	.81	.75	.71	.80	.74	.70	.78	.73	.70	.77	.73	.69	.76	.72	.69	.68
7.0	.76	.70	.66	.75	.70	.66	.74	.69	.66	.73	.68	.65	.72	.68	.65	.64
8.0	.72	.66	.62	.71	.66	.62	.70	.65	.62	.69	.65	.61	.68	.64	.61	.60
9.0	.68	.62	.58	.67	.62	.58	.67	.62	.58	.66	.61	.58	.65	.61	.58	.56
10.0	.64	.59	.55	.64	.59	.55	.63	.58	.55	.62	.58	.55	.62	.58	.55	.53



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm					
NAME: TH41-BKTC40C023P			TYPE:		WEIGHT:
SPEC.: black RA90 3000K+5700K			DIM.:		SERIAL No.:
MFR.:			SUR.: 77mm		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	.172	.098	.031	.165	.094	.030	.153	.088	.028	.141	.081	.026	.130	.076	.024	
2.0	.164	.090	.028	.159	.087	.027	.148	.082	.026	.138	.078	.024	.129	.073	.023	
3.0	.157	.083	.025	.152	.081	.024	.143	.077	.024	.134	.074	.023	.127	.070	.022	
4.0	.149	.078	.023	.145	.076	.022	.137	.073	.022	.130	.070	.021	.124	.067	.020	
5.0	.142	.073	.021	.139	.071	.021	.132	.069	.020	.126	.066	.020	.120	.064	.019	
6.0	.136	.068	.020	.133	.067	.019	.127	.065	.019	.122	.063	.019	.116	.061	.018	
7.0	.130	.064	.018	.128	.064	.018	.122	.062	.018	.117	.060	.018	.113	.059	.017	
8.0	.125	.061	.017	.123	.060	.017	.118	.059	.017	.113	.057	.017	.109	.056	.016	
9.0	.120	.058	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.106	.054	.016	
10.0	.115	.055	.015	.113	.055	.015	.109	.054	.015	.106	.053	.015	.103	.052	.015	

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	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.155	.133	.113	.133	.114	.098	.091	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.143	.114	.090	.122	.098	.078	.084	.068	.055	.048	.040	.032	.016	.013	.011	
4.0	.132	.099	.073	.113	.085	.064	.078	.059	.045	.045	.035	.026	.015	.011	.009	
5.0	.123	.087	.060	.106	.075	.052	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.116	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006	
7.0	.110	.070	.043	.094	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005	
8.0	.104	.064	.036	.089	.055	.032	.062	.039	.023	.036	.023	.013	.012	.008	.004	
9.0	.099	.059	.032	.085	.051	.028	.059	.036	.020	.034	.021	.012	.011	.007	.004	
10.0	.094	.054	.028	.081	.047	.024	.056	.033	.017	.033	.020	.010	.011	.006	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm											
NAME: TH41-BKTC40C023P					TYPE:			WEIGHT:			
SPEC.: black RA90 3000K+5700K					DIM.:			SERIAL No.:			
MFR.:					SUR.: 77mm			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		17.9	18.8	18.1	18.9	19.1	18.0	18.9	18.2	19.1	19.2
	3H	17.7	18.5	17.9	18.7	18.9	17.8	18.7	18.1	18.9	19.1
	4H	17.6	18.4	17.9	18.6	18.8	17.7	18.5	18.0	18.7	19.0
	6H	17.5	18.3	17.8	18.5	18.7	17.6	18.4	17.9	18.6	18.9
	8H	17.5	18.2	17.8	18.4	18.7	17.6	18.3	17.9	18.6	18.8
	12H	17.4	18.1	17.7	18.4	18.7	17.5	18.2	17.9	18.5	18.8
4H	2H	17.6	18.4	17.9	18.6	18.8	17.7	18.5	18.0	18.7	19.0
	3H	17.4	18.1	17.7	18.4	18.7	17.6	18.2	17.9	18.5	18.8
	4H	17.3	18.0	17.7	18.3	18.6	17.5	18.1	17.8	18.4	18.7
	6H	17.2	17.8	17.6	18.1	18.5	17.4	17.9	17.7	18.2	18.6
	8H	17.2	17.7	17.6	18.0	18.4	17.3	17.8	17.7	18.2	18.5
	12H	17.1	17.6	17.5	18.0	18.4	17.3	17.7	17.7	18.1	18.5
8H	4H	17.2	17.7	17.6	18.0	18.4	17.3	17.8	17.7	18.2	18.5
	6H	17.1	17.5	17.5	17.9	18.3	17.2	17.6	17.6	18.0	18.4
	8H	17.0	17.4	17.5	17.8	18.3	17.2	17.5	17.6	17.9	18.4
	12H	17.0	17.3	17.4	17.7	18.2	17.1	17.4	17.6	17.9	18.3
12H	4H	17.1	17.6	17.5	18.0	18.4	17.3	17.7	17.7	18.1	18.5
	6H	17.0	17.4	17.5	17.8	18.3	17.2	17.5	17.6	17.9	18.4
	8H	17.0	17.3	17.4	17.7	18.2	17.1	17.4	17.6	17.9	18.3
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 3.8 / -15.4					+ 3.9 / -16.1					
1.5H	+ 6.3 / -11.5					+ 6.3 / -11.7					
2.0H	+ 8.0 / -11.8					+ 7.8 / -12.1					

CIE Pub.117, 3432 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 4.3)
Area: 0.00466 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

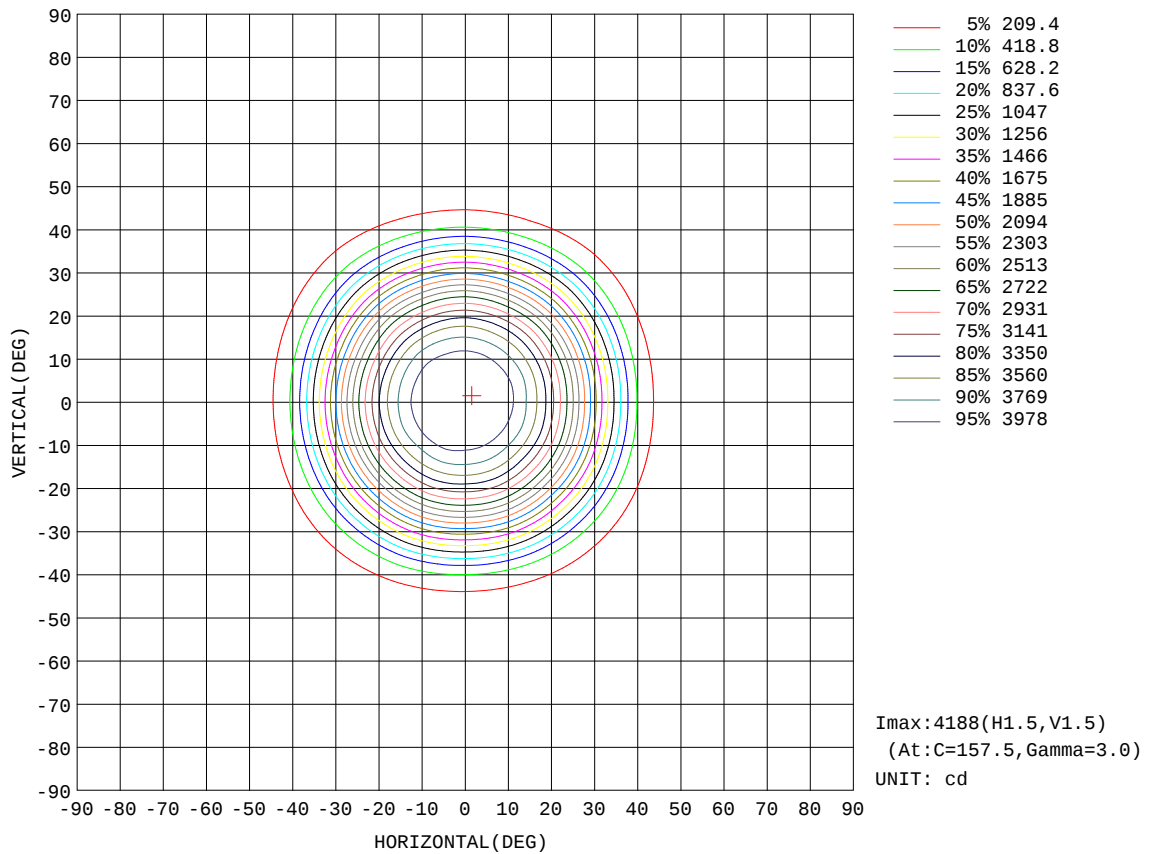
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	79	88	82	79	87	82	78	75
0.80	96	90	87	95	90	86	94	89	86	83
1.00	100	95	91	99	94	91	98	94	90	87
1.25	104	99	96	103	98	95	101	97	95	91
1.50	107	102	99	105	101	98	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	96
3.00	112	109	106	110	107	105	107	105	103	97
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	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:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

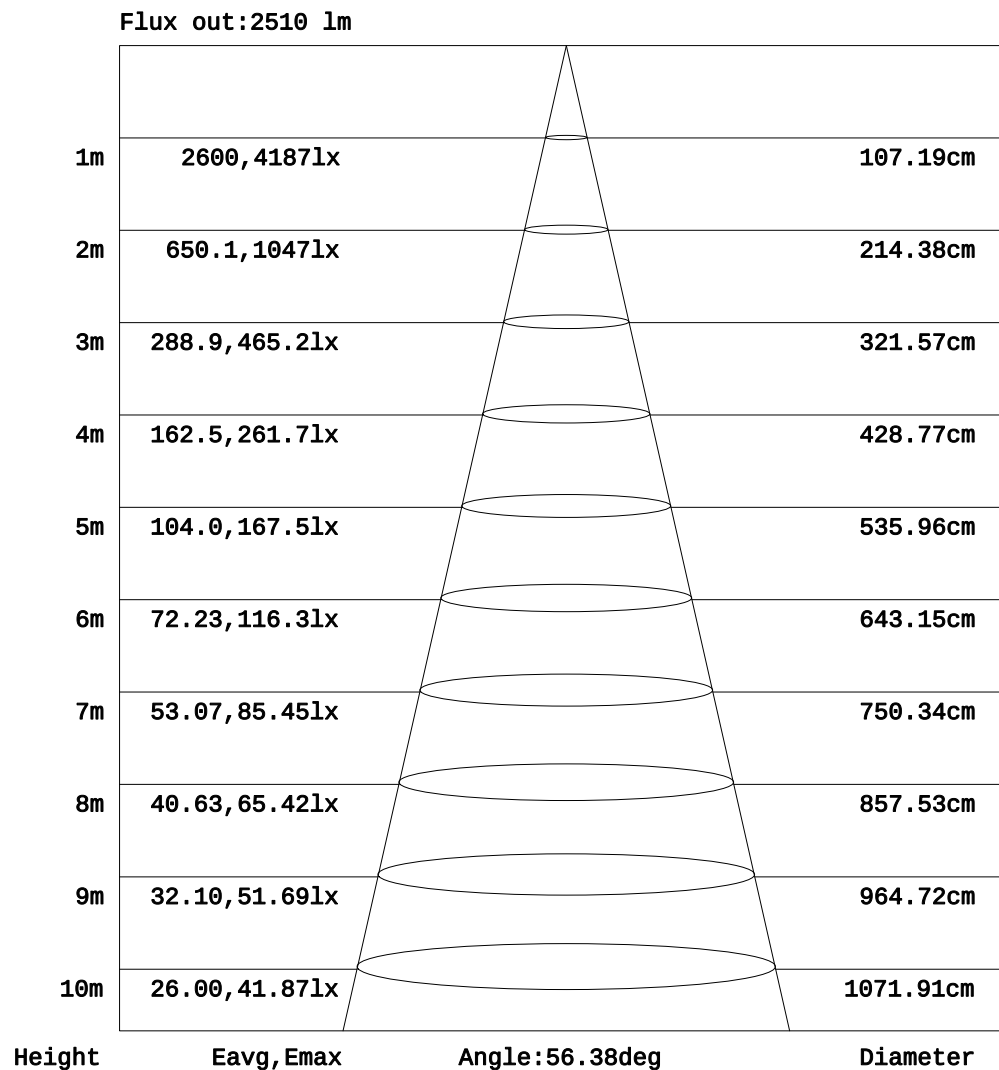


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:



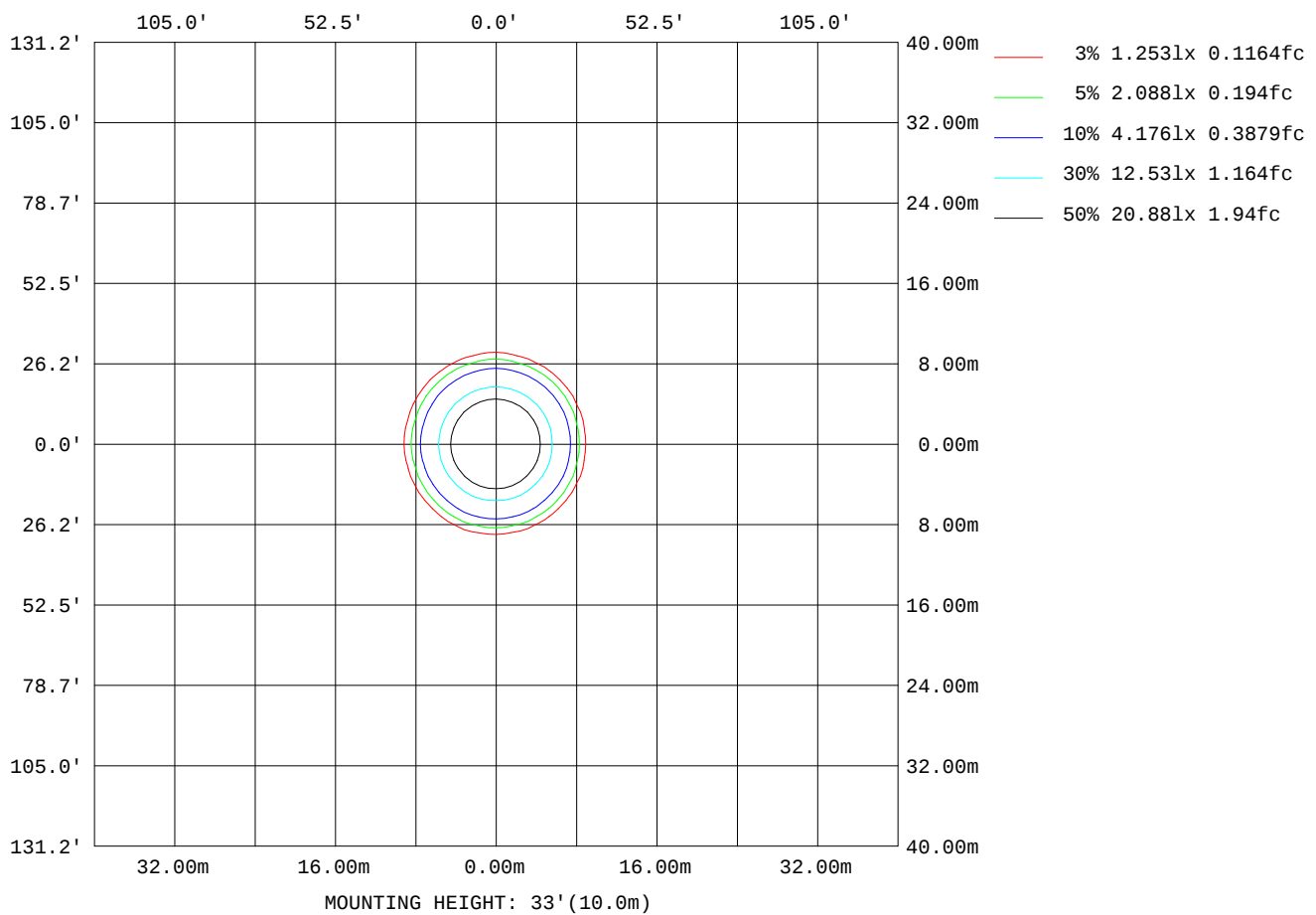
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.17V I:0.1718A P:37.175W PF:0.9400 Freq:49.99Hz Lamp Flux:3432.27x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

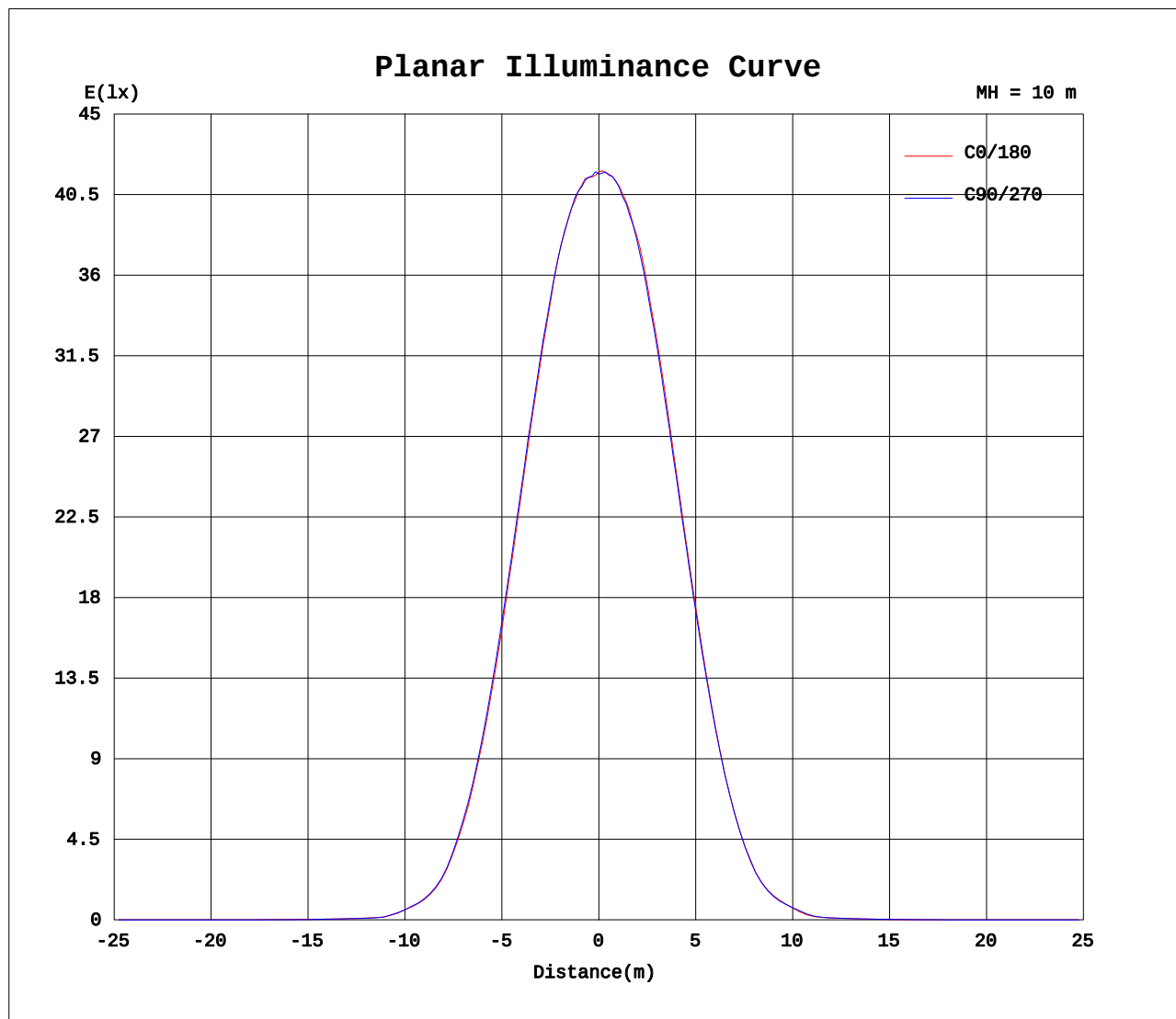
AvgL	cd/m2
L_0~180(65)av	1593
L_0~180(75)av	521
L_0~180(85)av	480
L_90~270(65)av	1560
L_90~270(75)av	557
L_90~270(85)av	485
L_45(65)av	1563
L_45(75)av	556
L_45(85)av	499

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2024-06-22

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

```

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

```