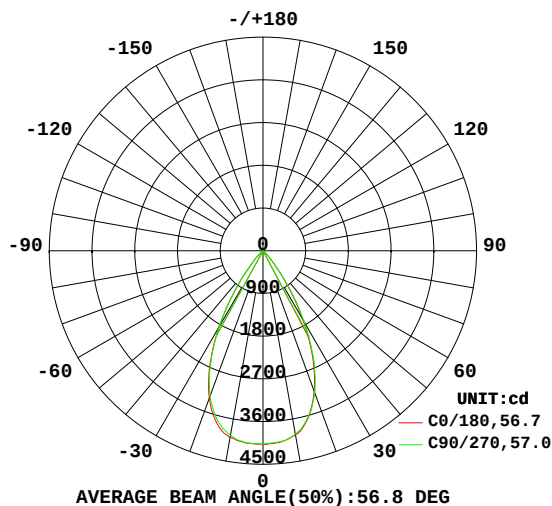


LUMINAIRE PHOTOMETRIC TEST REPORT

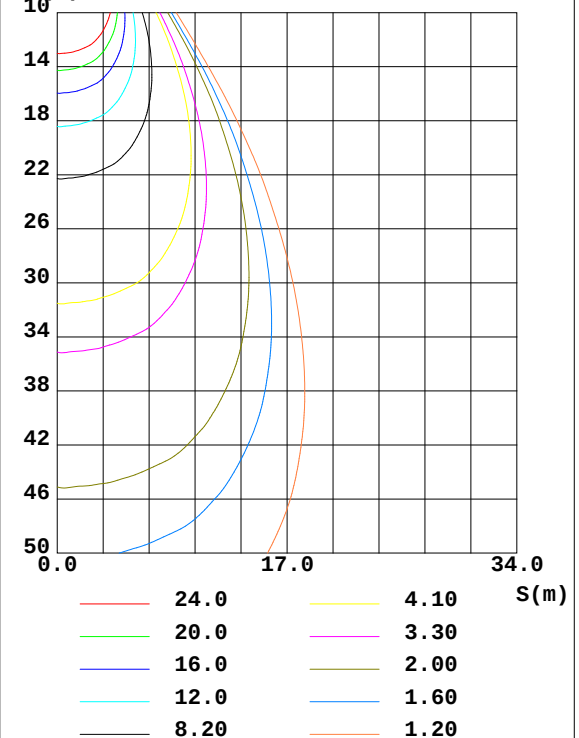
Test:U:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 85.33 lm/W			
MODEL	TB32171211 5700K	I _{max} (cd)	4081	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)	3361.3	η UP, DN(C0-180)	0.0, 49.3
NOMINAL FLUX(lm)	3361.25	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:

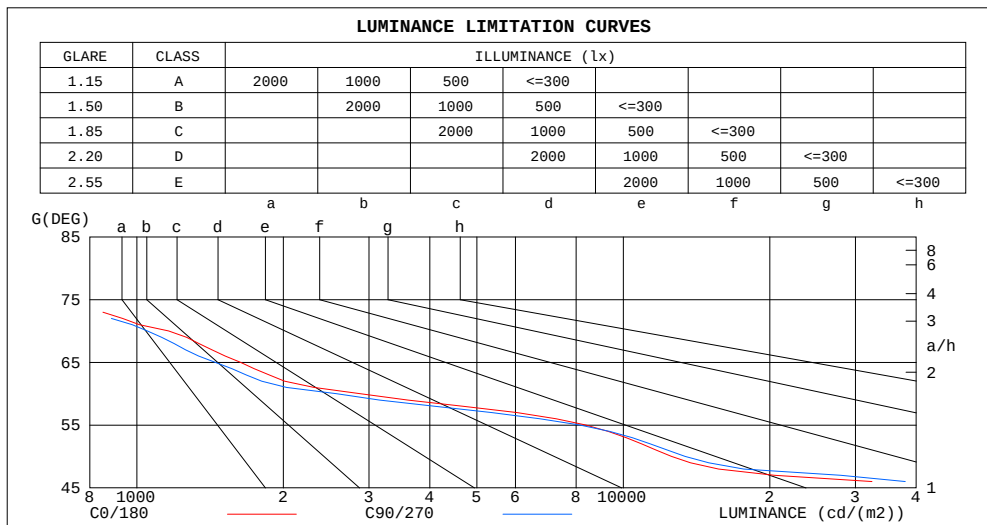
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3939	3916	3922	3942	3993	3983	3948	3945	0- 10	383.5	383.5	11.4, 11.4
20	3157	3152	3188	3230	3309	3301	3254	3208	10- 20	1025	1408	41.9, 41.9
30	1698	1709	1751	1792	1847	1865	1847	1789	20- 30	1159	2567	76.4, 76.4
40	371.5	378.0	405.3	421.4	437.0	460.4	453.3	422.7	30- 40	634.9	3202	95.3, 95.3
50	37.64	38.64	40.13	40.10	41.60	44.37	46.28	42.55	40- 50	134.9	3337	99.3, 99.3
60	6.698	6.313	5.988	5.717	5.763	6.413	6.848	7.206	50- 60	20.08	3357	99.9, 99.9
70	1.852	1.797	1.674	1.519	1.461	1.581	1.731	1.743	60- 70	3.133	3360	100, 100
80	0.4482	0.4599	0.4058	0.3710	0.2968	0.3431	0.4163	0.3893	70- 80	0.8774	3361	100, 100
90	0.1969	0.2007	0.1969	0.1853	0.0232	0.0193	0.0193	0.0193	80- 90	0.2333	3361	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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 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	638	571
80	554	501
75	562	498
70	1162	1050
65	1633	1449
60	2875	2570
55	8373	8145
50	12564	13398
45	44000	47624

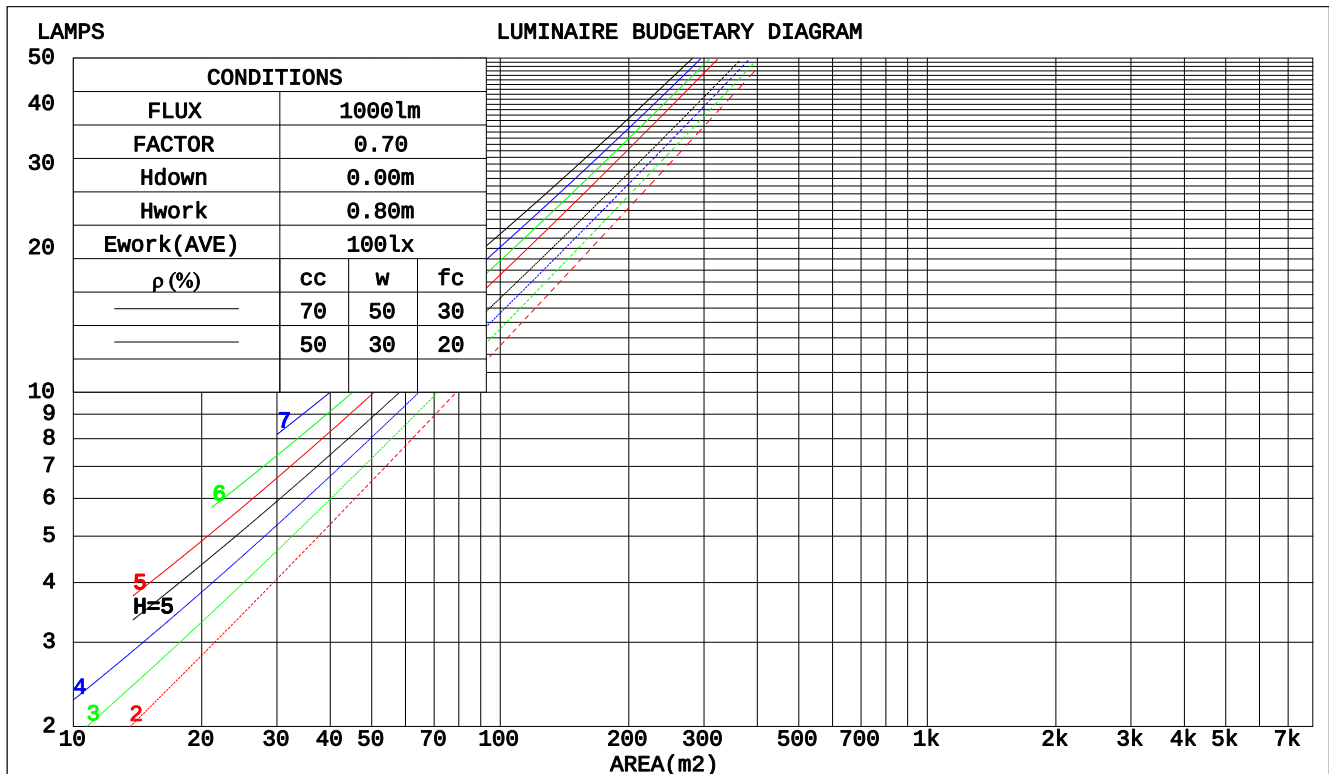
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-06-22

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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 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						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	.99	.99	.98	.97	.96	.94
2.0	1.04	.99	.97	1.02	.99	.96	.99	.96	.93	.96	.94	.91	.93	.91	.90	.88
3.0	.97	.92	.89	.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	.76	.83	.78	.75	.81	.77	.74	.80	.76	.74	.72
6.0	.81	.75	.71	.80	.74	.70	.78	.74	.70	.77	.73	.70	.76	.72	.69	.68
7.0	.76	.70	.66	.75	.70	.66	.74	.69	.66	.73	.69	.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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 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	.152	.087	.028	.141	.081	.026	.130	.075	.024		
2.0	.164	.090	.028	.158	.087	.027	.148	.082	.026	.138	.078	.024	.129	.073	.023		
3.0	.156	.083	.025	.152	.081	.024	.143	.077	.023	.134	.074	.023	.127	.070	.022		
4.0	.149	.077	.023	.145	.076	.022	.137	.073	.022	.130	.070	.021	.123	.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	.121	.063	.019	.116	.061	.018		
7.0	.130	.064	.018	.127	.064	.018	.122	.062	.018	.117	.060	.018	.113	.059	.017		
8.0	.125	.061	.017	.122	.060	.017	.118	.059	.017	.113	.057	.017	.109	.056	.016		
9.0	.120	.058	.016	.118	.057	.016	.113	.056	.016	.110	.055	.016	.106	.054	.016		
10.0	.115	.055	.015	.113	.055	.015	.109	.054	.015	.106	.053	.015	.102	.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	.027	.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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 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	17.7	18.6	17.9	18.8	19.0	18.0	18.9	18.2	19.1	19.2	
	3H	17.6	18.4	17.8	18.6	18.8	17.8	18.6	18.1	18.8	
	4H	17.5	18.3	17.7	18.5	18.7	17.7	18.5	18.0	18.7	
	6H	17.4	18.1	17.7	18.4	18.6	17.6	18.4	17.9	18.6	
	8H	17.3	18.0	17.6	18.3	18.6	17.6	18.3	17.9	18.5	
	12H	17.3	18.0	17.6	18.2	18.5	17.5	18.2	17.9	18.5	
4H	2H	17.5	18.3	17.7	18.5	18.7	17.7	18.5	18.0	18.7	
	3H	17.3	18.0	17.6	18.2	18.5	17.5	18.2	17.9	18.5	
	4H	17.2	17.8	17.5	18.1	18.4	17.4	18.1	17.8	18.4	
	6H	17.1	17.6	17.5	18.0	18.3	17.3	17.9	17.7	18.2	
	8H	17.1	17.6	17.4	17.9	18.3	17.3	17.8	17.7	18.2	
	12H	17.0	17.5	17.4	17.8	18.2	17.2	17.7	17.7	18.1	
8H	4H	17.1	17.6	17.4	17.9	18.3	17.3	17.8	17.7	18.2	
	6H	16.9	17.4	17.4	17.8	18.2	17.2	17.6	17.6	18.0	
	8H	16.9	17.3	17.3	17.7	18.1	17.1	17.5	17.6	17.9	
	12H	16.8	17.2	17.3	17.6	18.1	17.1	17.4	17.6	17.8	
12H	4H	17.0	17.5	17.4	17.8	18.2	17.2	17.7	17.7	18.1	
	6H	16.9	17.3	17.3	17.7	18.1	17.1	17.5	17.6	17.9	
	8H	16.8	17.2	17.3	17.6	18.1	17.1	17.4	17.6	17.8	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 3.9 / -15.1					+ 4.0 / -16.0					
1.5H	+ 6.3 / -11.2					+ 6.4 / -11.7					
2.0H	+ 7.8 / -11.5					+ 7.9 / -12.3					

CIE Pub.117, 3361 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 4.2)
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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

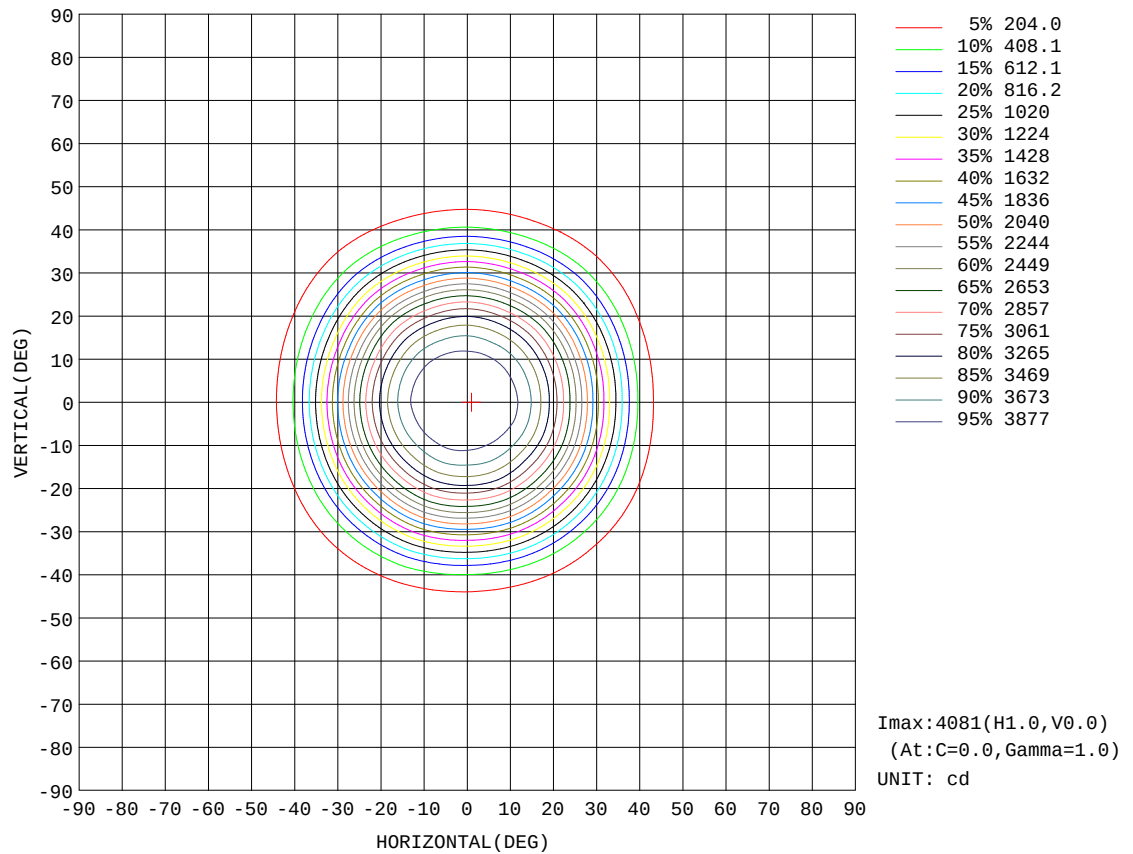
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	82	79	88	82	79	87	82	79	75
0.80	96	90	87	95	90	87	94	89	86	83
1.00	100	95	91	99	94	91	98	94	91	87
1.25	104	99	96	103	99	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	108	105	107	105	103	97
4.00	114	111	109	112	110	108	109	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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

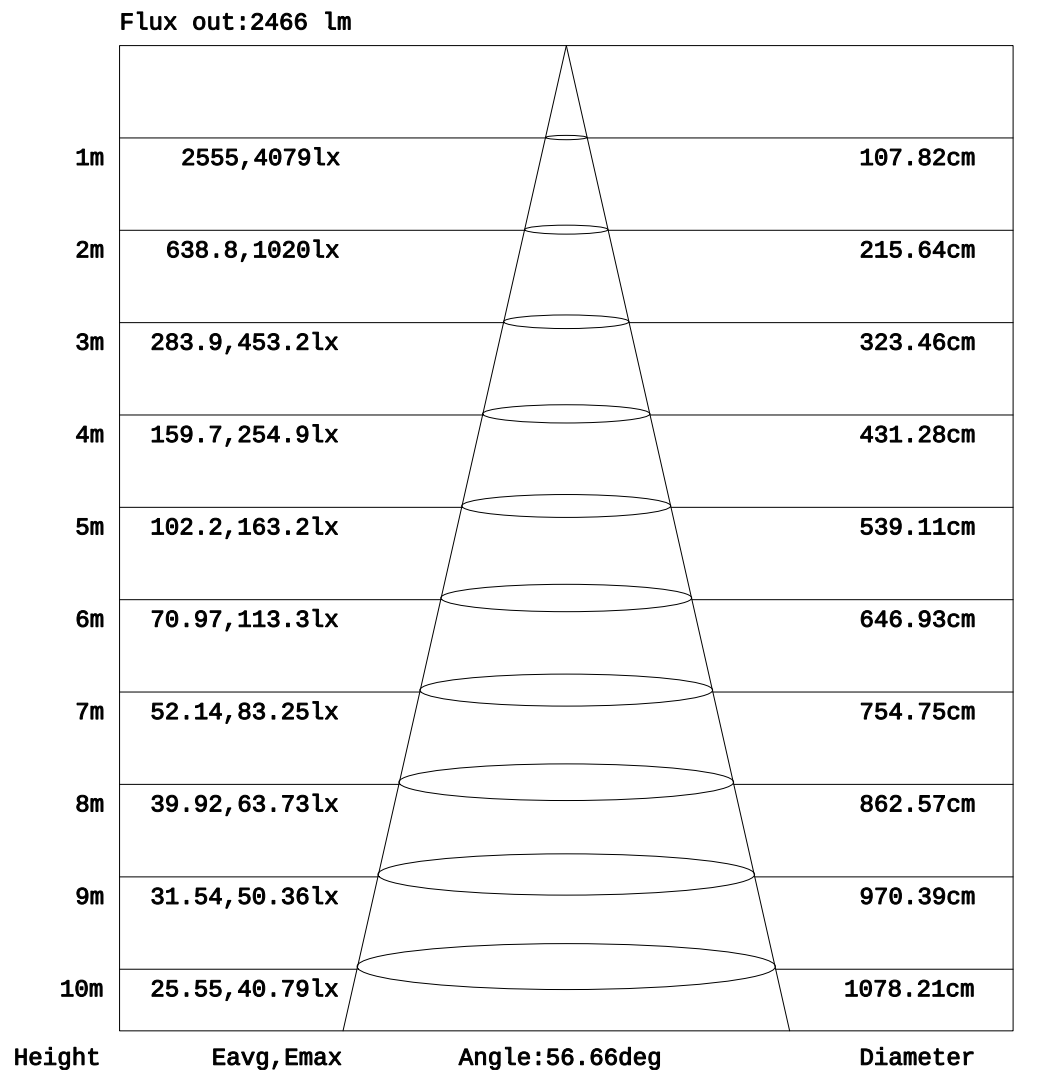


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-06-22

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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:



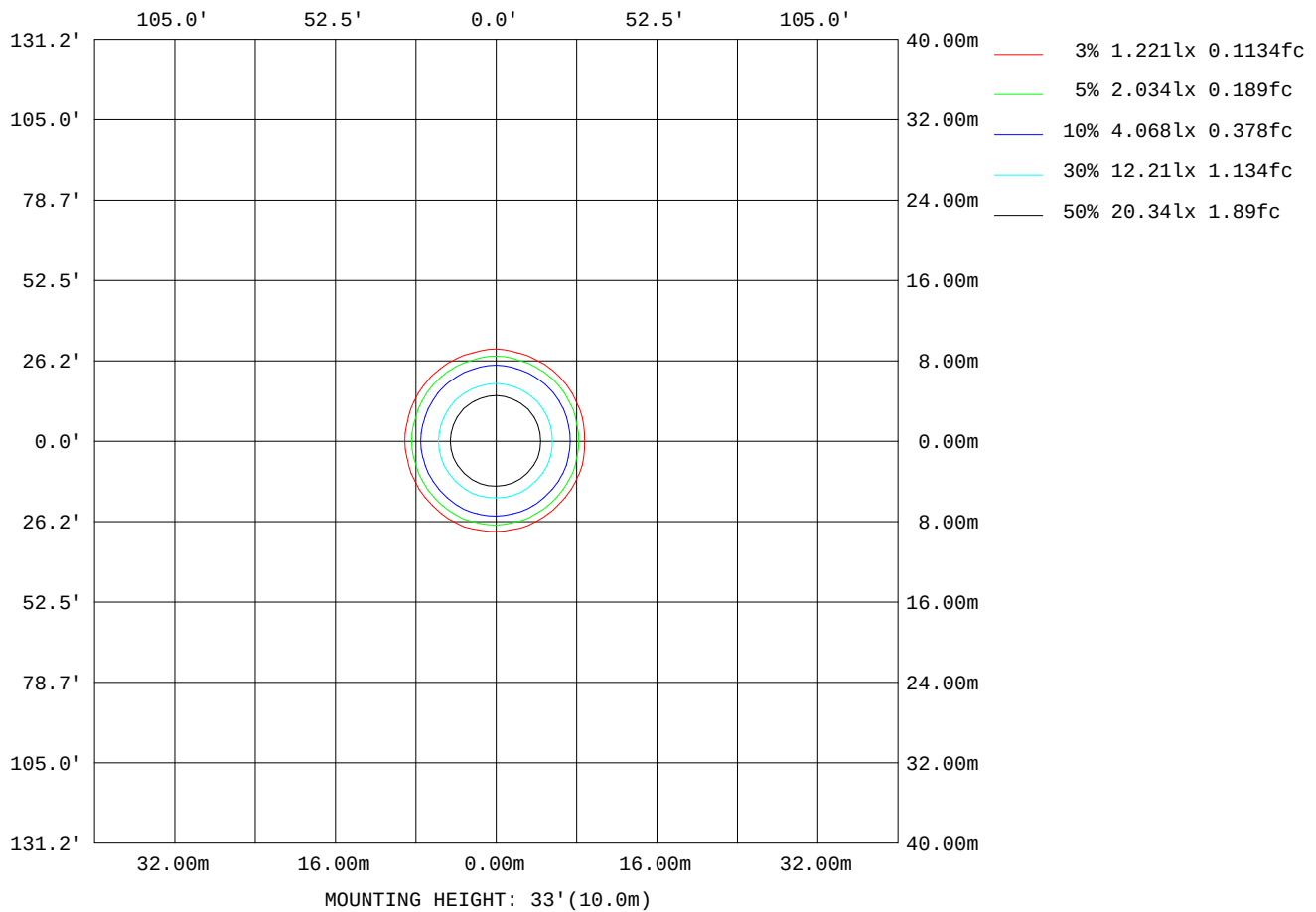
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 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:230.16V I:0.1813A P:39.391W PF:0.9441 Freq:49.99Hz Lamp Flux:3361.25x1 lm		
NAME: TH41-BKTC40C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

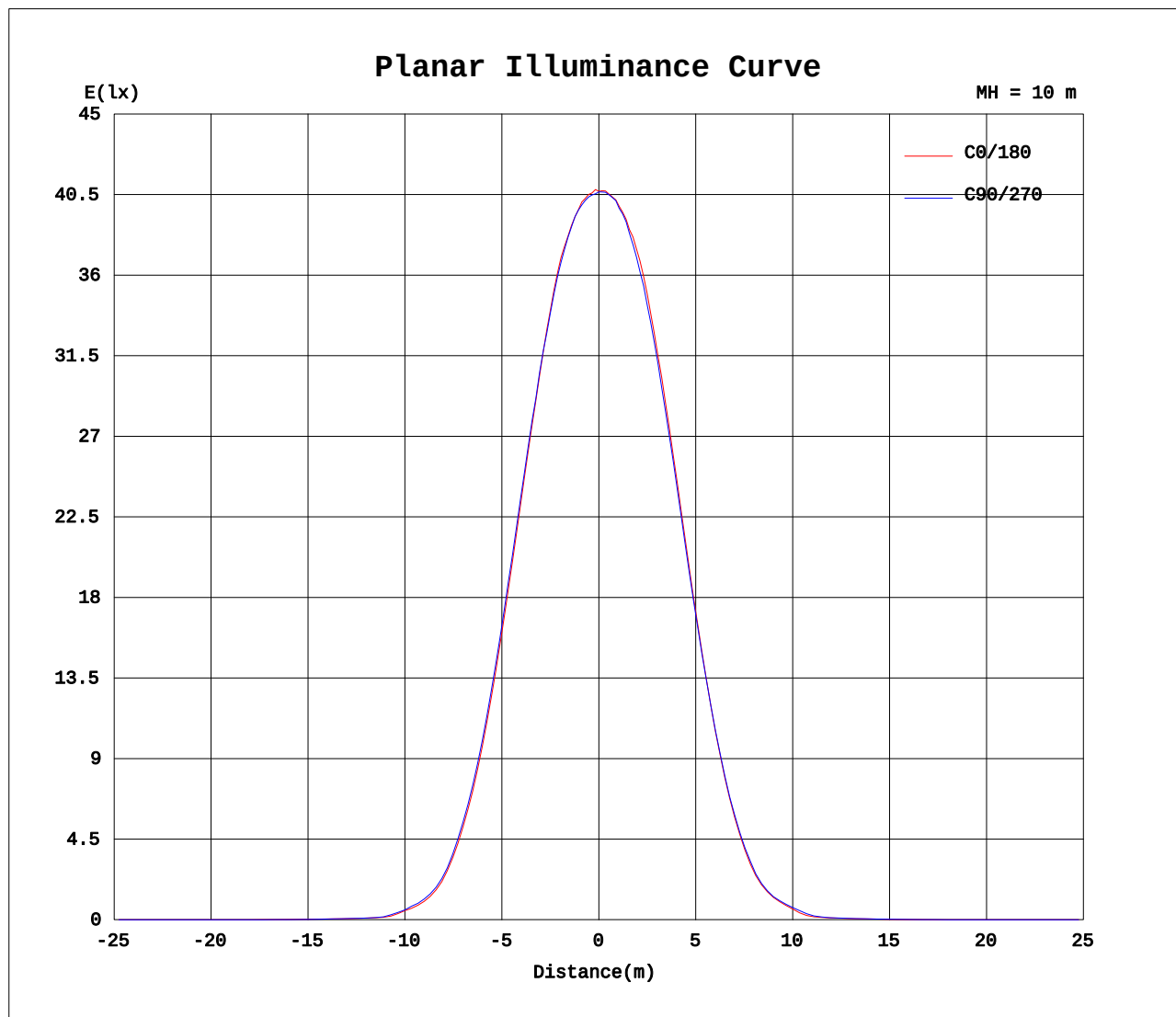
AvgL	cd/m2
L_0~180(65)av	1501
L_0~180(75)av	489
L_0~180(85)av	437
L_90~270(65)av	1498
L_90~270(75)av	535
L_90~270(85)av	489
L_45(65)av	1490
L_45(75)av	522
L_45(85)av	477

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:

```