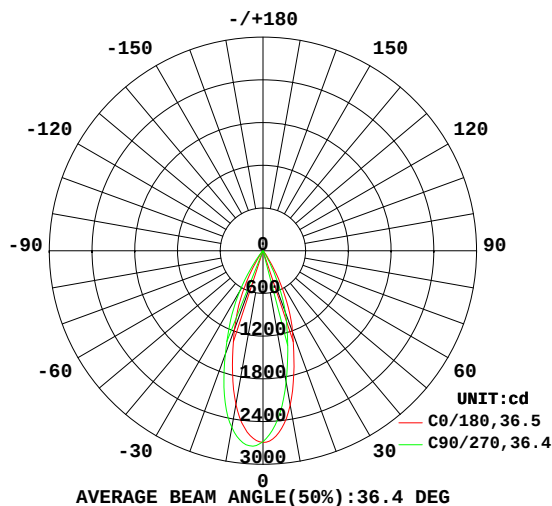


LUMINAIRE PHOTOMETRIC TEST REPORT

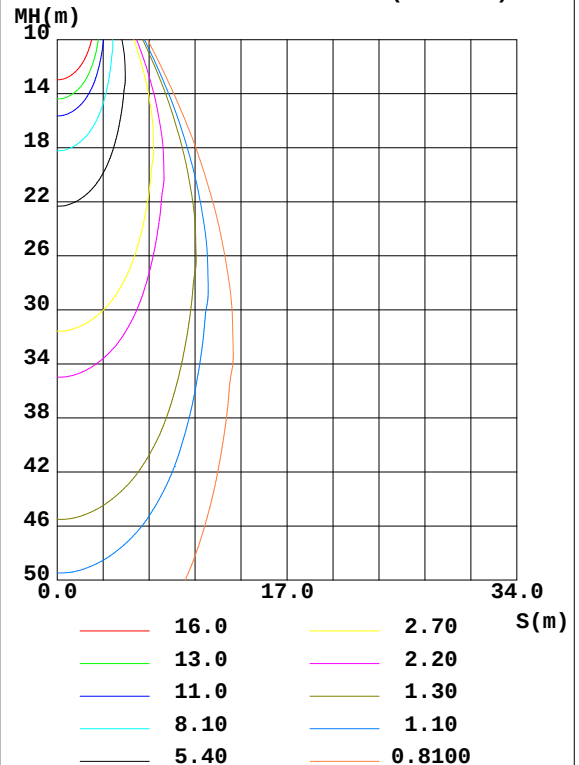
Test:U:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 74.98 lm/W			
MODEL	TB15111204 5700K	I _{max} (cd)	2748	S/MH(C0/180)	0.58
NOMINAL POWER(W)	16	LOR(%)	100.0	S/MH(C90/270)	0.71
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	1174.4	η UP, DN(C0-180)	0.0, 41.3
NOMINAL FLUX(lm)	1174.37	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 58.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	0.65

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: 2024-01-12

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:

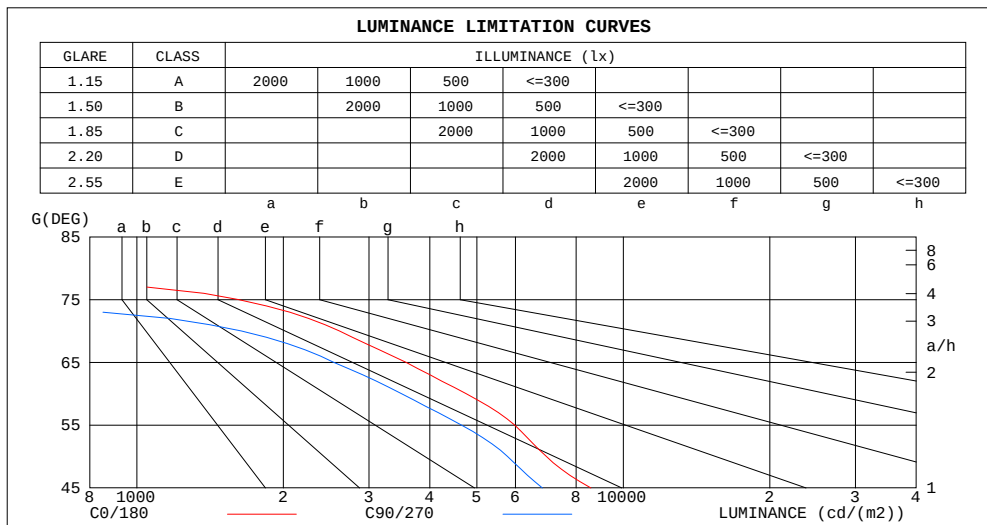
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2201	1969	1873	1947	2193	2419	2521	2438	0- 10	232.4	232.4	19.8,19.8
20	1207	1015	918.6	977.2	1164	1418	1549	1437	10- 20	466.1	698.5	59.5,59.5
30	374.8	201.2	151.8	195.6	336.4	546.5	651.9	558.2	20- 30	349.5	1048	89.2,89.2
40	38.24	24.50	22.08	23.42	32.46	52.76	72.30	61.22	30- 40	91.52	1140	97,97
50	14.82	13.04	12.33	12.81	14.78	16.80	18.66	17.15	40- 50	17.78	1157	98.6,98.6
60	7.890	6.314	5.808	6.283	7.918	9.639	10.60	9.677	50- 60	10.17	1168	99.4,99.4
70	2.961	2.169	1.860	2.239	3.057	3.925	4.353	3.890	60- 70	5.224	1173	99.9,99.9
80	0.2672	0.0779	0.0275	0.0585	0.1690	0.4576	0.8839	0.5459	70- 80	1.549	1174	100,100
90	0.0116	0.0116	0.0116	0.0154	0	0	0	0	80- 90	0.0749	1174	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:2024-01-12

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:

LUMINANCE LIMITATION CURVES

Test:U:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	40	40
80	463	48
75	1617	388
70	2607	1638
65	3575	2537
60	4753	3499
55	5978	4647
50	6946	5778
45	8578	6817

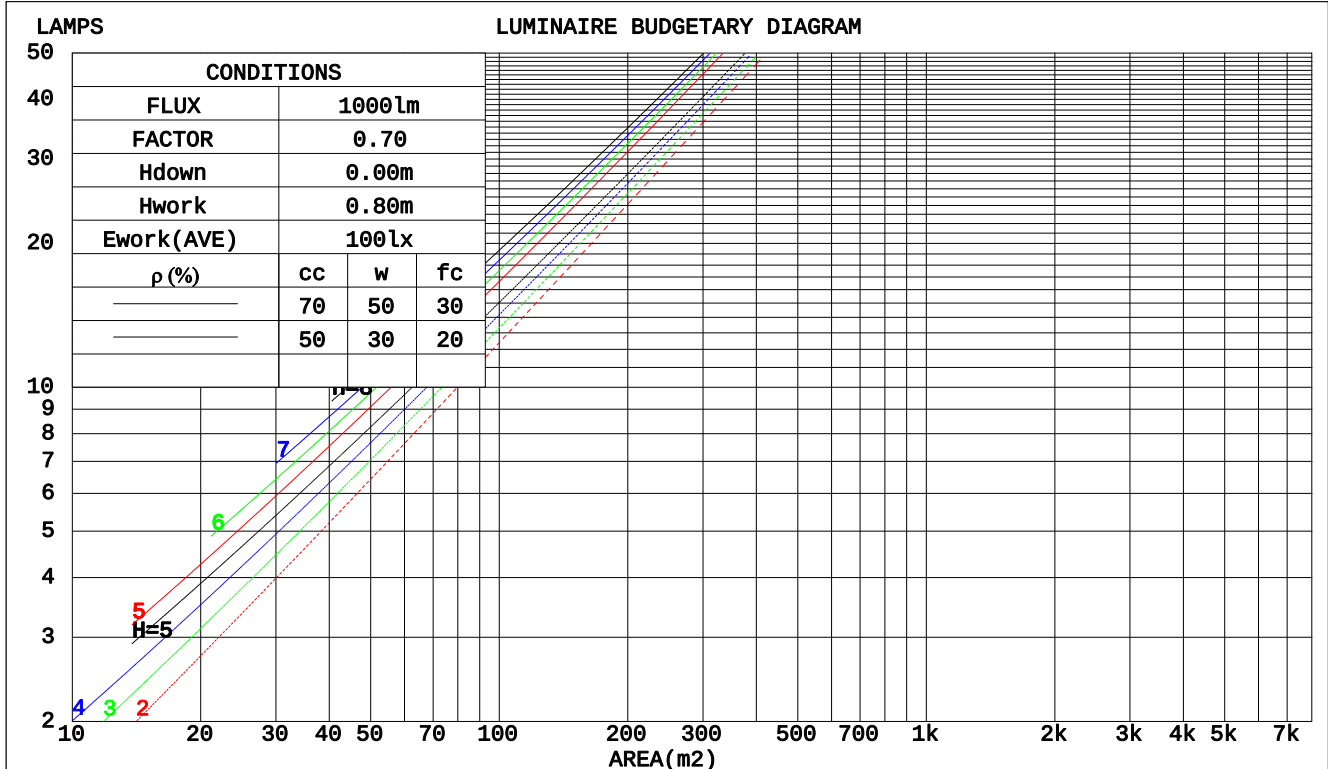
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	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	.00
1.0	1.12	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97	.95
2.0	1.05	1.02	.99	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.93	.92	.90
3.0	.00	.96	.92	.98	.95	.91	.96	.93	.90	.94	.91	.89	.91	.89	.87	.86
4.0	.95	.90	.86	.94	.89	.86	.92	.88	.85	.90	.86	.84	.88	.85	.83	.82
5.0	.90	.85	.82	.89	.85	.81	.87	.84	.80	.86	.82	.80	.84	.81	.79	.78
6.0	.86	.81	.77	.85	.80	.77	.84	.80	.76	.82	.79	.76	.81	.78	.76	.74
7.0	.82	.77	.73	.81	.77	.73	.80	.76	.73	.79	.75	.73	.78	.75	.72	.71
8.0	.79	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68
9.0	.75	.70	.67	.75	.70	.67	.74	.70	.67	.73	.69	.66	.72	.69	.66	.65
10.0	.72	.67	.64	.72	.67	.64	.71	.67	.64	.70	.67	.64	.70	.66	.64	.63



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-01-12

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:

WEC AND CCEC

Test:U:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm					
NAME: TH2035-BKTC18C02			TYPE:		WEIGHT:
SPEC.: black RA90 3000K+5700K			DIM.:		SERIAL No.:
MFR.:			SUR.: 65mm		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	.157	.089	.028	.150	.086	.027	.137	.079	.025	.126	.073	.023	.115	.067	.022	
2.0	.148	.081	.025	.142	.078	.024	.132	.073	.023	.122	.068	.021	.113	.064	.020	
3.0	.139	.074	.022	.135	.072	.022	.126	.068	.021	.118	.064	.020	.110	.061	.019	
4.0	.132	.068	.020	.128	.067	.020	.120	.064	.019	.113	.061	.018	.107	.058	.018	
5.0	.125	.064	.018	.122	.062	.018	.115	.060	.018	.109	.058	.017	.104	.055	.017	
6.0	.119	.060	.017	.116	.059	.017	.110	.057	.016	.105	.055	.016	.100	.053	.016	
7.0	.114	.056	.016	.111	.055	.016	.106	.054	.015	.101	.052	.015	.097	.050	.015	
8.0	.109	.053	.015	.106	.052	.015	.102	.051	.015	.098	.050	.014	.094	.048	.014	
9.0	.104	.050	.014	.102	.050	.014	.098	.049	.014	.095	.047	.014	.091	.046	.013	
10.0	.100	.048	.013	.098	.047	.013	.095	.046	.013	.091	.045	.013	.088	.044	.013	

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	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.153	.133	.115	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013	
3.0	.139	.113	.093	.119	.098	.080	.082	.068	.056	.047	.040	.033	.015	.013	.011	
4.0	.128	.098	.076	.110	.085	.066	.075	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.118	.086	.063	.102	.075	.055	.070	.052	.039	.041	.031	.023	.013	.010	.008	
6.0	.110	.077	.053	.095	.066	.046	.065	.047	.033	.038	.027	.019	.012	.009	.006	
7.0	.103	.069	.045	.089	.060	.039	.061	.042	.028	.036	.025	.016	.012	.008	.005	
8.0	.097	.062	.039	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005	
9.0	.092	.057	.033	.079	.049	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.087	.052	.029	.075	.046	.026	.052	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm										
NAME: TH2035-BKTC18C02					TYPE:			WEIGHT:		
SPEC.: black RA90 3000K+5700K					DIM.:			SERIAL No.:		
MFR.:					SUR.: 65mm			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	11.9	12.7	12.1	12.8	13.0	8.8	9.6	9.0	9.7	9.9
3H	11.9	12.7	12.2	12.8	13.0	8.9	9.7	9.2	9.8	10.0
4H	11.9	12.6	12.2	12.8	13.0	8.9	9.6	9.1	9.8	10.0
6H	11.8	12.5	12.1	12.7	12.9	8.8	9.4	9.1	9.7	9.9
8H	11.8	12.4	12.1	12.7	12.9	8.7	9.4	9.0	9.6	9.9
12H	11.7	12.3	12.0	12.6	12.9	8.7	9.3	9.0	9.5	9.8
4H 2H	11.8	12.5	12.0	12.7	12.9	8.9	9.6	9.1	9.8	10.0
3H	11.8	12.5	12.2	12.7	13.0	9.0	9.6	9.4	9.9	10.2
4H	11.8	12.4	12.2	12.7	13.0	9.0	9.5	9.3	9.8	10.1
6H	11.7	12.2	12.1	12.5	12.9	8.9	9.4	9.2	9.7	10.0
8H	11.7	12.1	12.1	12.5	12.8	8.8	9.3	9.2	9.6	10.0
12H	11.6	12.0	12.0	12.4	12.8	8.8	9.2	9.2	9.6	9.9
8H 4H	11.7	12.1	12.1	12.5	12.8	8.9	9.3	9.2	9.7	10.0
6H	11.6	12.0	12.0	12.3	12.8	8.8	9.1	9.2	9.5	9.9
8H	11.5	11.9	12.0	12.3	12.7	8.7	9.0	9.1	9.4	9.9
12H	11.5	11.7	11.9	12.2	12.7	8.6	8.9	9.1	9.4	9.8
12H 4H	11.6	12.0	12.0	12.4	12.8	8.8	9.2	9.2	9.6	10.0
6H	11.5	11.9	12.0	12.3	12.7	8.7	9.0	9.1	9.4	9.9
8H	11.5	11.7	11.9	12.2	12.7	8.6	8.9	9.1	9.4	9.8
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 3.0 / - 2.3					+ 1.3 / - 1.7				
1.5H	+ 4.6 / - 2.0					+ 1.7 / - 0.8				
2.0H	+ 1.9 / - 2.2					+ 1.6 / - 2.1				

CIE Pub.117, 1174 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.6)
Area: 0.00332 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

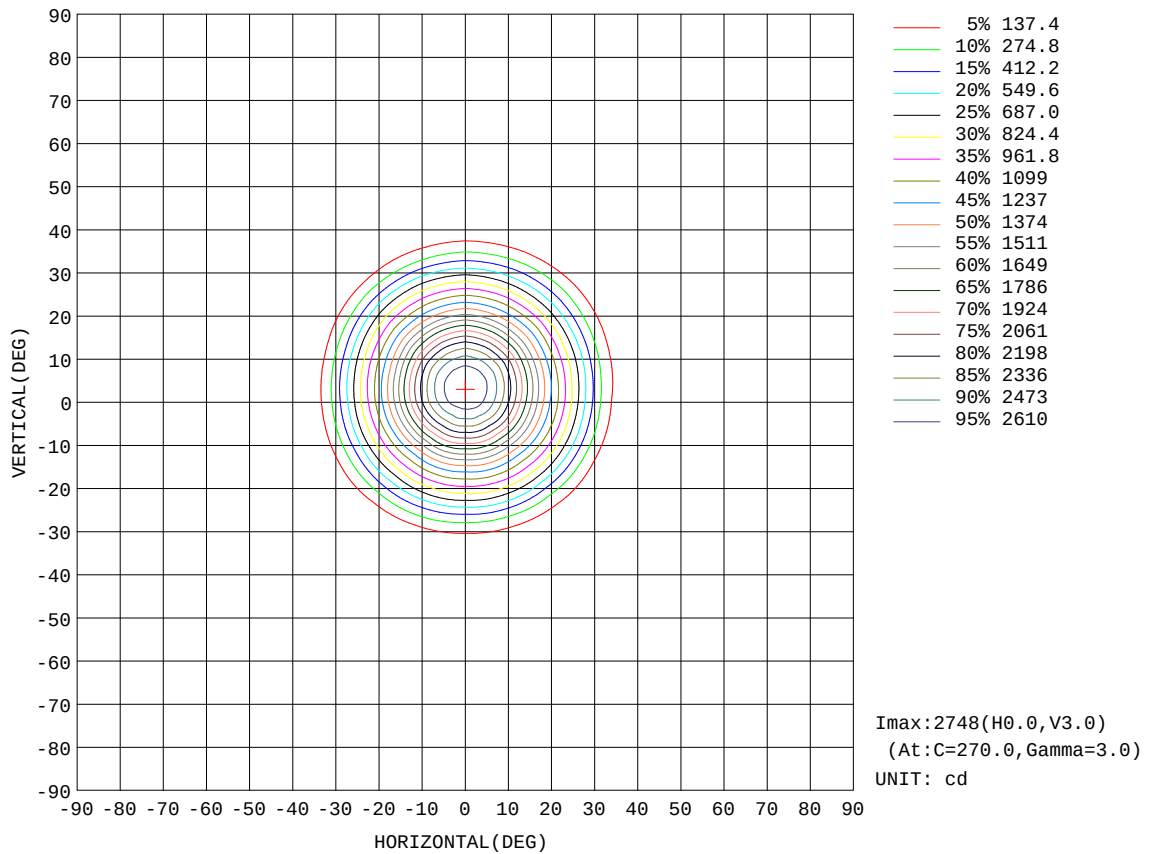
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	80	89	84	80	88	83	80	77
0.80	97	91	88	96	91	88	95	90	87	84
1.00	101	96	92	100	95	92	98	95	91	88
1.25	104	100	96	103	99	96	102	98	95	91
1.50	107	103	100	106	102	99	104	100	98	94
2.00	109	105	102	108	104	102	105	102	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	115	113	112	113	112	110	109	108	107	100
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:2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

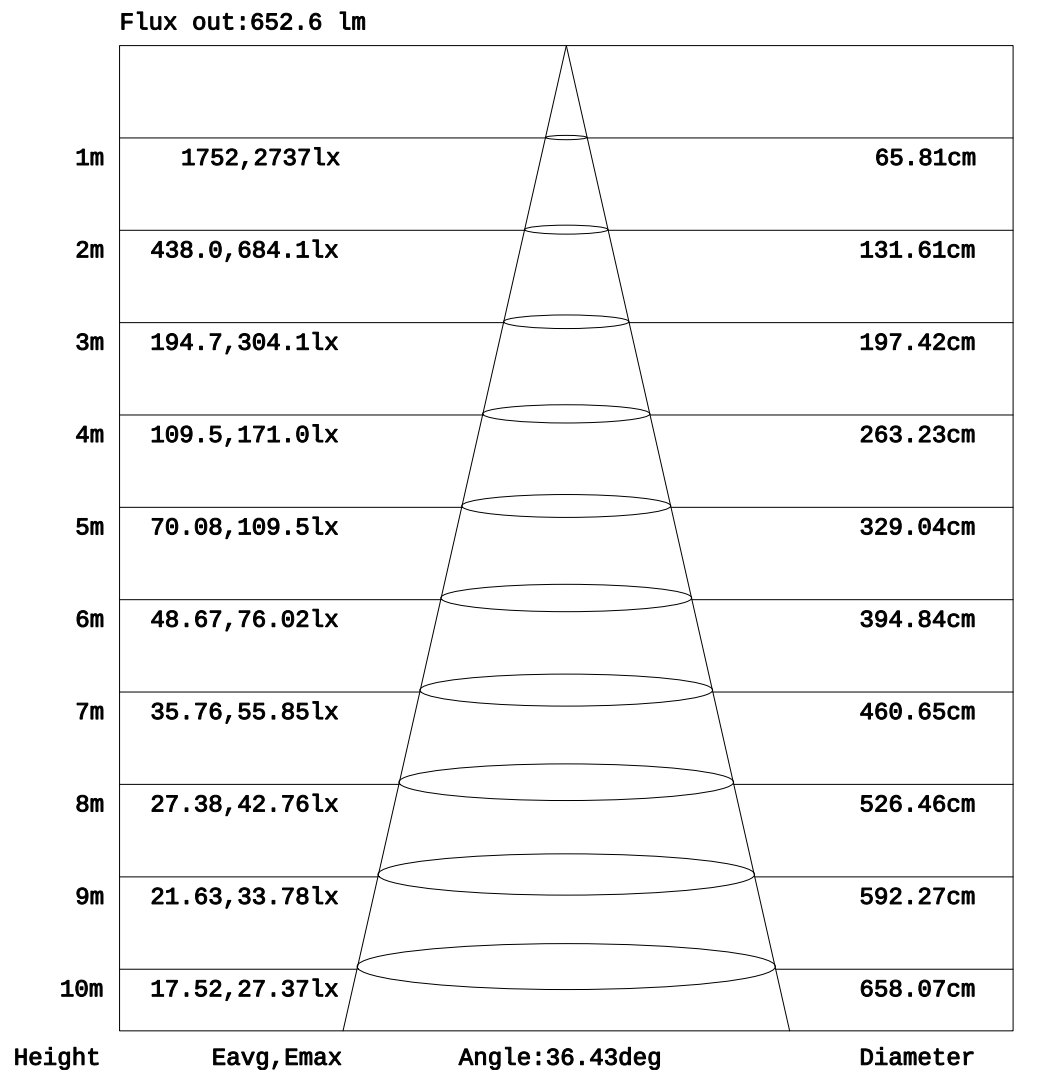


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:



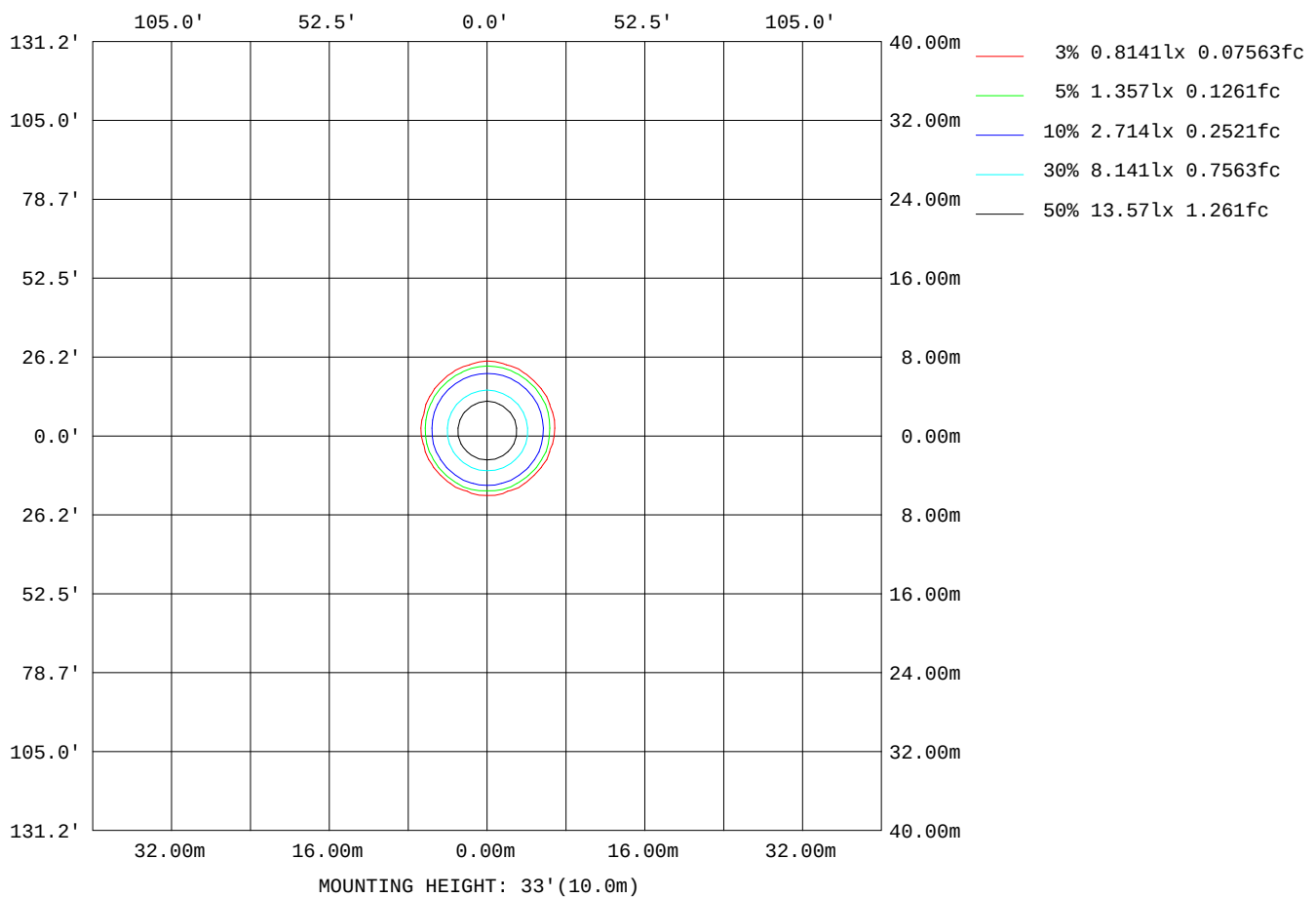
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-01-12

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:220.61V I:0.0728A P:15.662W PF:0.9747 Freq:50.01Hz Lamp Flux:1174.37x1 lm		
NAME: TH2035-BKTC18C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

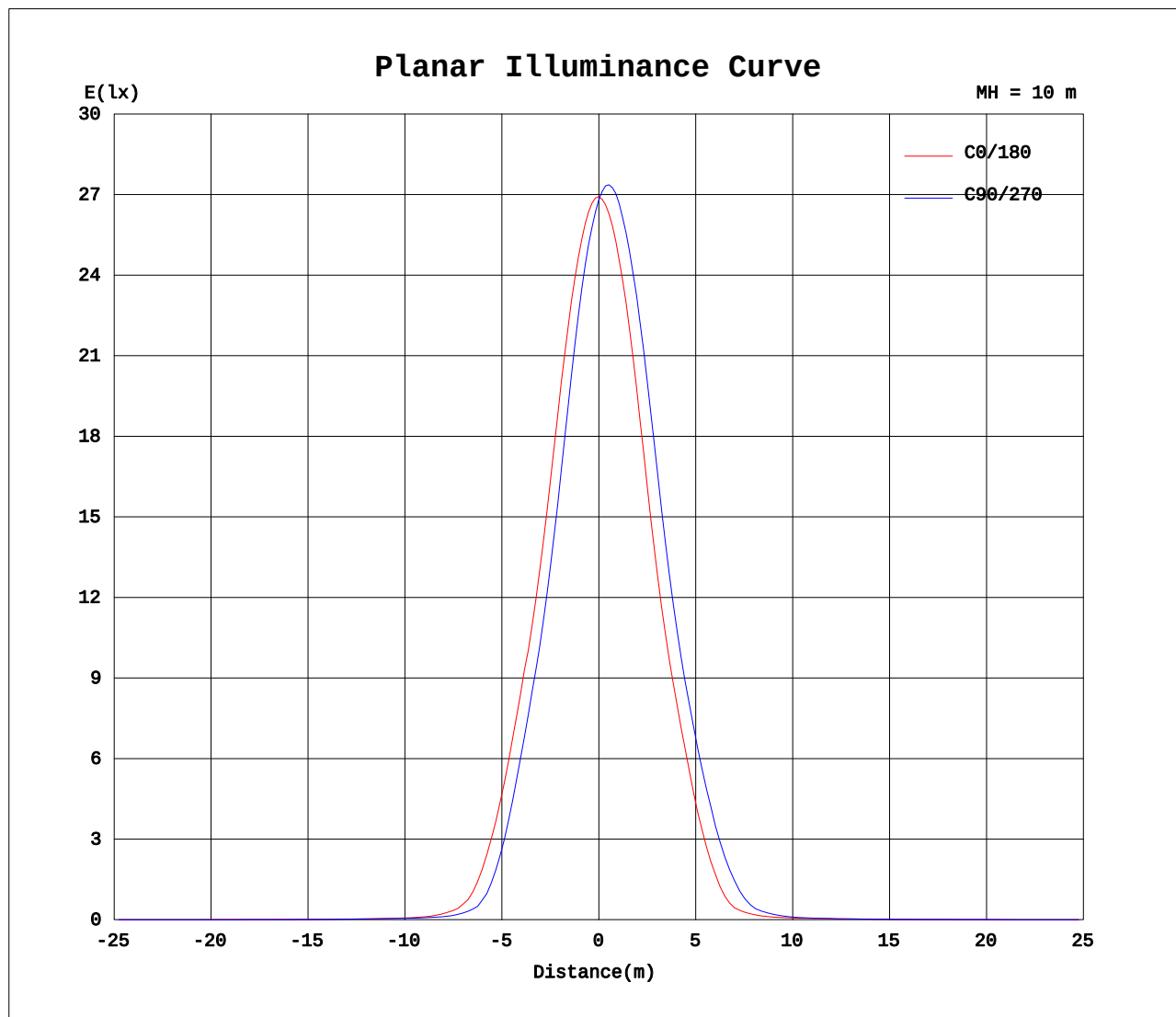
AvgL	cd/m2
L_0~180(65)av	3616
L_0~180(75)av	1588
L_0~180(85)av	20
L_90~270(65)av	3785
L_90~270(75)av	1616
L_90~270(85)av	178
L_45(65)av	3668
L_45(75)av	1527
L_45(85)av	69

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-01-12

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: 2024-01-12

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:

```