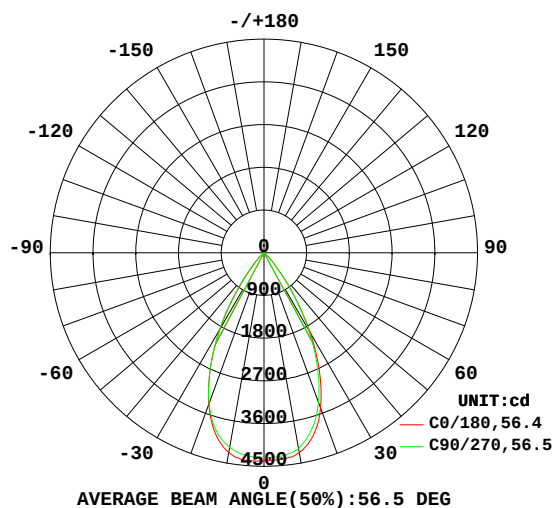


LUMINAIRE PHOTOMETRIC TEST REPORT

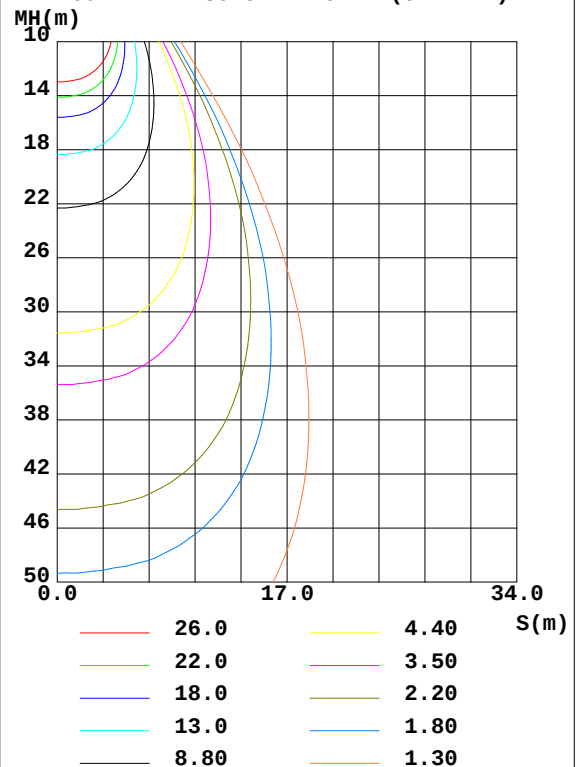
Test:U:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 90.26 lm/W			
MODEL	TB32141211 5700K	I _{max} (cd)	4398	S/MH(C0/180)	0.84
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	0.85
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	3572.3	η UP, DN(C0-180)	0.0, 50.1
NOMINAL FLUX(lm)	3572.28	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.9
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: 2023-12-21

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:

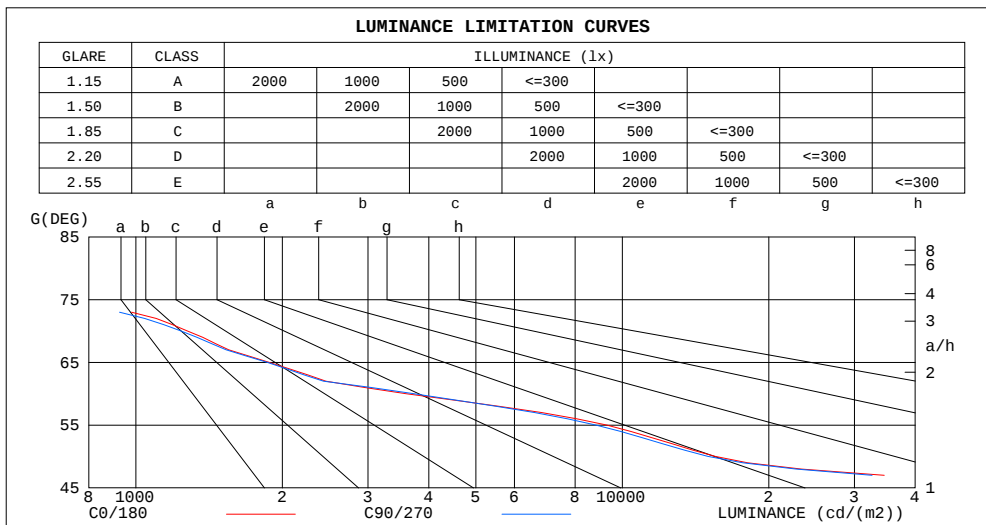
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4274	4238	4187	4147	4272	4211	4164	4156	0- 10	408.1	408.1	11.4, 11.4
20	3486	3434	3355	3310	3400	3406	3384	3407	10- 20	1084	1492	41.8, 41.8
30	1957	1934	1889	1815	1858	1878	1878	1926	20- 30	1215	2707	75.8, 75.8
40	498.1	506.0	476.4	421.9	424.0	458.9	485.4	501.0	30- 40	684.8	3392	94.9, 94.9
50	46.53	48.47	44.91	41.17	43.24	47.51	50.50	48.09	40- 50	152.9	3545	99.2, 99.2
60	8.359	8.802	8.677	8.241	9.024	9.589	8.207	8.548	50- 60	22.25	3567	99.9, 99.9
70	2.033	2.056	1.971	1.802	1.958	3.131	1.977	1.978	60- 70	4.059	3571	100, 100
80	0.5177	0.5370	0.4174	0.3285	0.2659	0.4123	0.4202	0.3624	70- 80	1.010	3572	100, 100
90	0.1930	0.2007	0.2085	0.2007	0.0386	0.0347	0.0309	0.0270	80- 90	0.2464	3572	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:2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	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	686	609
80	640	516
75	636	553
70	1276	1237
65	1877	1861
60	3588	3724
55	9285	8817
50	15533	14994
45	62895	59589

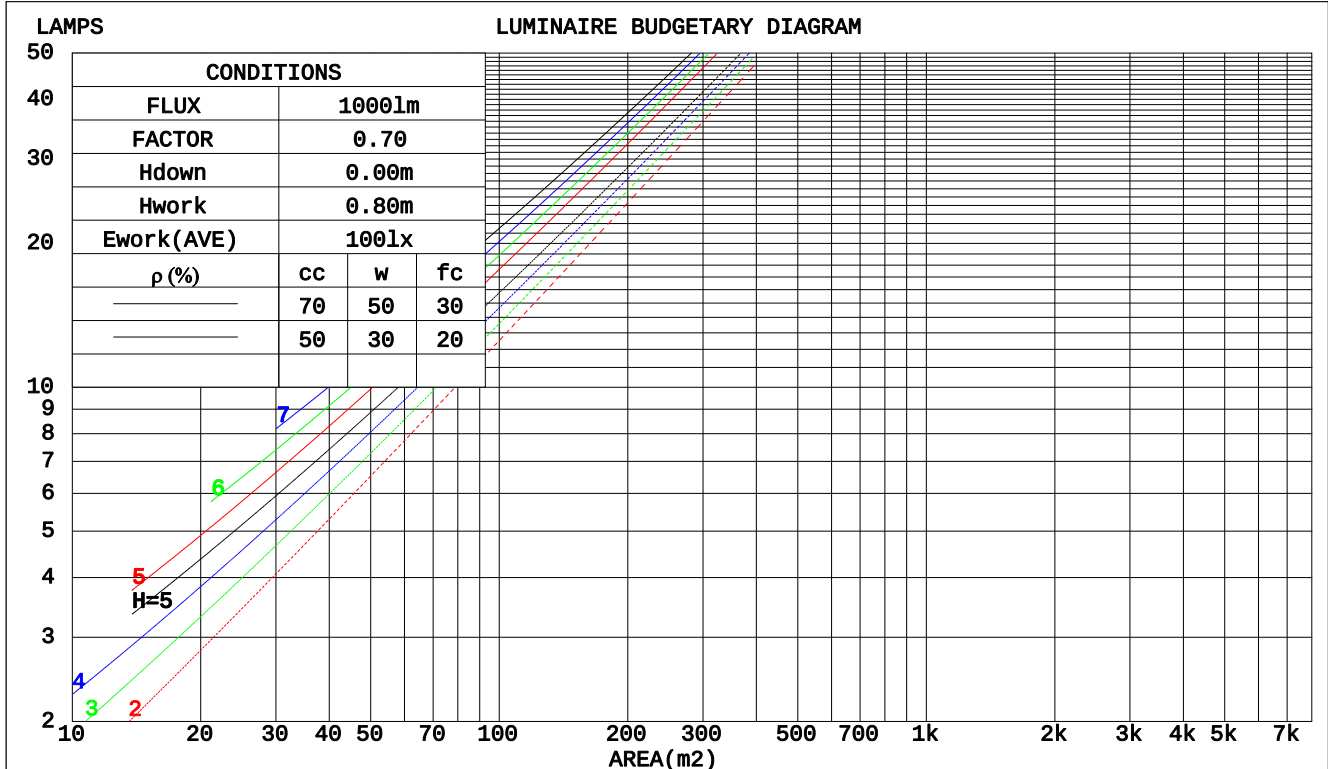
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	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	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	.98	.95	.99	.96	.93	.96	.93	.91	.93	.91	.89	.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	.83	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.85	.80	.76	.85	.79	.75	.83	.78	.75	.81	.77	.74	.80	.76	.73	.72
6.0	.80	.75	.71	.80	.74	.70	.78	.73	.70	.77	.73	.69	.75	.72	.69	.68
7.0	.76	.70	.66	.75	.70	.66	.74	.69	.65	.73	.68	.65	.72	.68	.65	.63
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	.66	.61	.58	.66	.61	.58	.65	.61	.58	.56
10.0	.64	.59	.55	.64	.59	.55	.63	.58	.55	.62	.58	.55	.62	.57	.54	.53



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm					
NAME: TH40-BKTC40C021P			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	.131	.076	.024	
2.0	.165	.090	.028	.159	.088	.027	.148	.083	.026	.139	.078	.024	.130	.073	.023	
3.0	.157	.083	.025	.152	.081	.025	.143	.078	.024	.135	.074	.023	.127	.070	.022	
4.0	.150	.078	.023	.145	.076	.022	.138	.073	.022	.131	.070	.021	.124	.067	.020	
5.0	.143	.073	.021	.139	.071	.021	.132	.069	.020	.126	.067	.020	.120	.064	.019	
6.0	.136	.068	.020	.133	.067	.019	.127	.065	.019	.122	.063	.019	.117	.061	.018	
7.0	.131	.065	.018	.128	.064	.018	.123	.062	.018	.118	.060	.018	.113	.059	.017	
8.0	.125	.061	.017	.123	.060	.017	.118	.059	.017	.114	.058	.017	.110	.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	.110	.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	.049	.040	.032	.016	.013	.011	
4.0	.132	.099	.073	.114	.085	.064	.078	.059	.045	.045	.035	.026	.015	.011	.009	
5.0	.124	.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	.090	.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	.095	.054	.028	.081	.047	.024	.057	.033	.017	.033	.020	.010	.011	.006	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm											
NAME: TH40-BKTC40C021P					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		18.7	19.6	18.9	19.8	20.0	18.5	19.4	18.7	19.6	19.8
	3H	18.6	19.4	18.8	19.6	19.8	18.4	19.2	18.6	19.4	19.6
	4H	18.5	19.3	18.7	19.5	19.7	18.3	19.1	18.5	19.3	19.5
	6H	18.4	19.1	18.7	19.4	19.6	18.2	18.9	18.5	19.2	19.4
	8H	18.3	19.1	18.6	19.3	19.6	18.1	18.9	18.4	19.1	19.4
	12H	18.3	19.0	18.6	19.2	19.5	18.1	18.8	18.4	19.0	19.3
4H	2H	18.5	19.3	18.7	19.5	19.7	18.3	19.1	18.5	19.3	19.5
	3H	18.3	19.0	18.6	19.2	19.5	18.1	18.8	18.4	19.0	19.3
	4H	18.2	18.8	18.5	19.1	19.4	18.0	18.6	18.3	18.9	19.2
	6H	18.1	18.6	18.5	19.0	19.3	17.9	18.4	18.3	18.8	19.1
	8H	18.1	18.6	18.4	18.9	19.3	17.9	18.4	18.2	18.7	19.1
	12H	18.0	18.5	18.4	18.8	19.2	17.8	18.3	18.2	18.6	19.0
8H	4H	18.1	18.6	18.4	18.9	19.3	17.9	18.4	18.2	18.7	19.1
	6H	17.9	18.4	18.4	18.8	19.2	17.7	18.2	18.2	18.6	19.0
	8H	17.9	18.3	18.3	18.7	19.1	17.7	18.1	18.1	18.5	18.9
	12H	17.8	18.2	18.3	18.6	19.1	17.6	18.0	18.1	18.4	18.9
12H	4H	18.0	18.5	18.4	18.8	19.2	17.8	18.3	18.2	18.6	19.0
	6H	17.9	18.3	18.3	18.7	19.1	17.7	18.1	18.1	18.5	18.9
	8H	17.8	18.2	18.3	18.6	19.1	17.6	18.0	18.1	18.4	18.9
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 3.6 / -16.0					+ 3.6 / -15.9					
1.5H	+ 6.0 / -12.1					+ 6.0 / -12.1					
2.0H	+ 8.0 / -12.4					+ 7.9 / -12.2					

CIE Pub.117, 3572 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 4.4)
Area: 0.00466 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

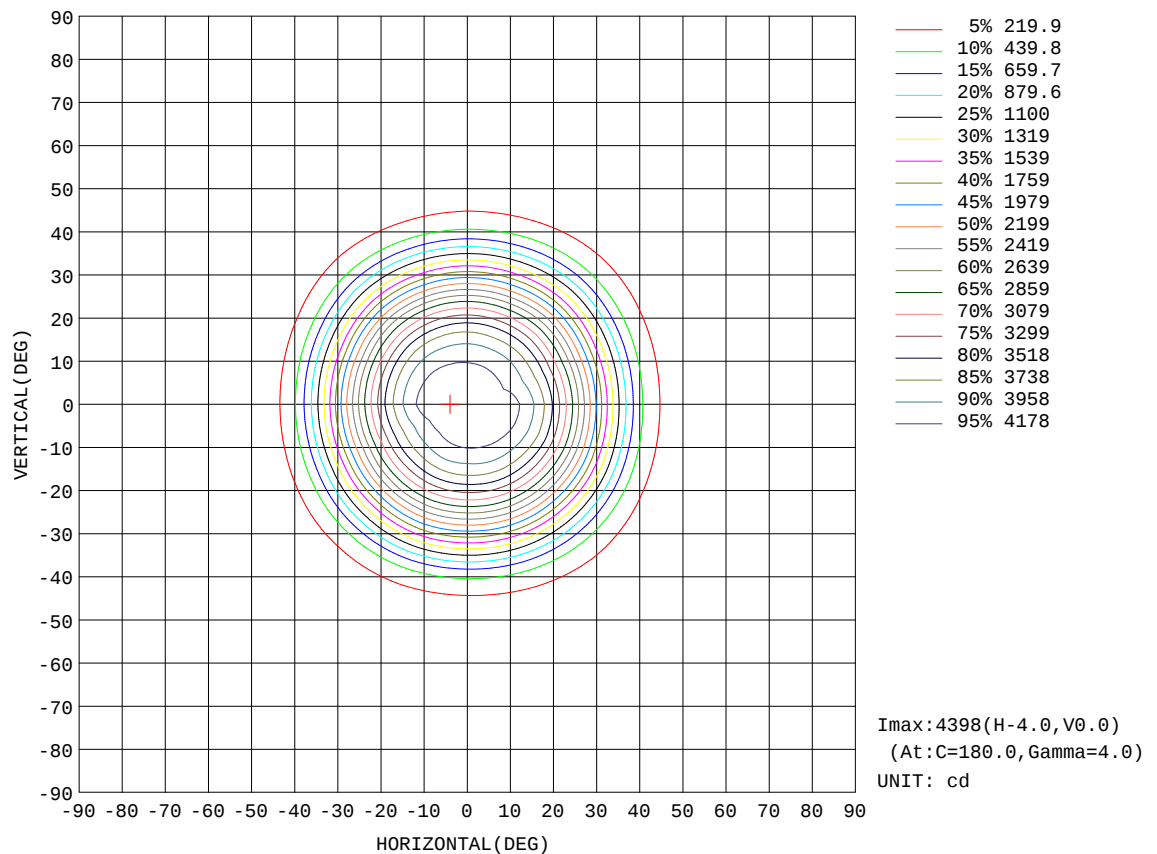
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	79	88	82	78	87	82	78	75
0.80	96	90	86	95	90	86	94	89	86	82
1.00	100	95	91	99	94	91	98	94	90	87
1.25	104	99	96	103	98	95	101	97	94	90
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:2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

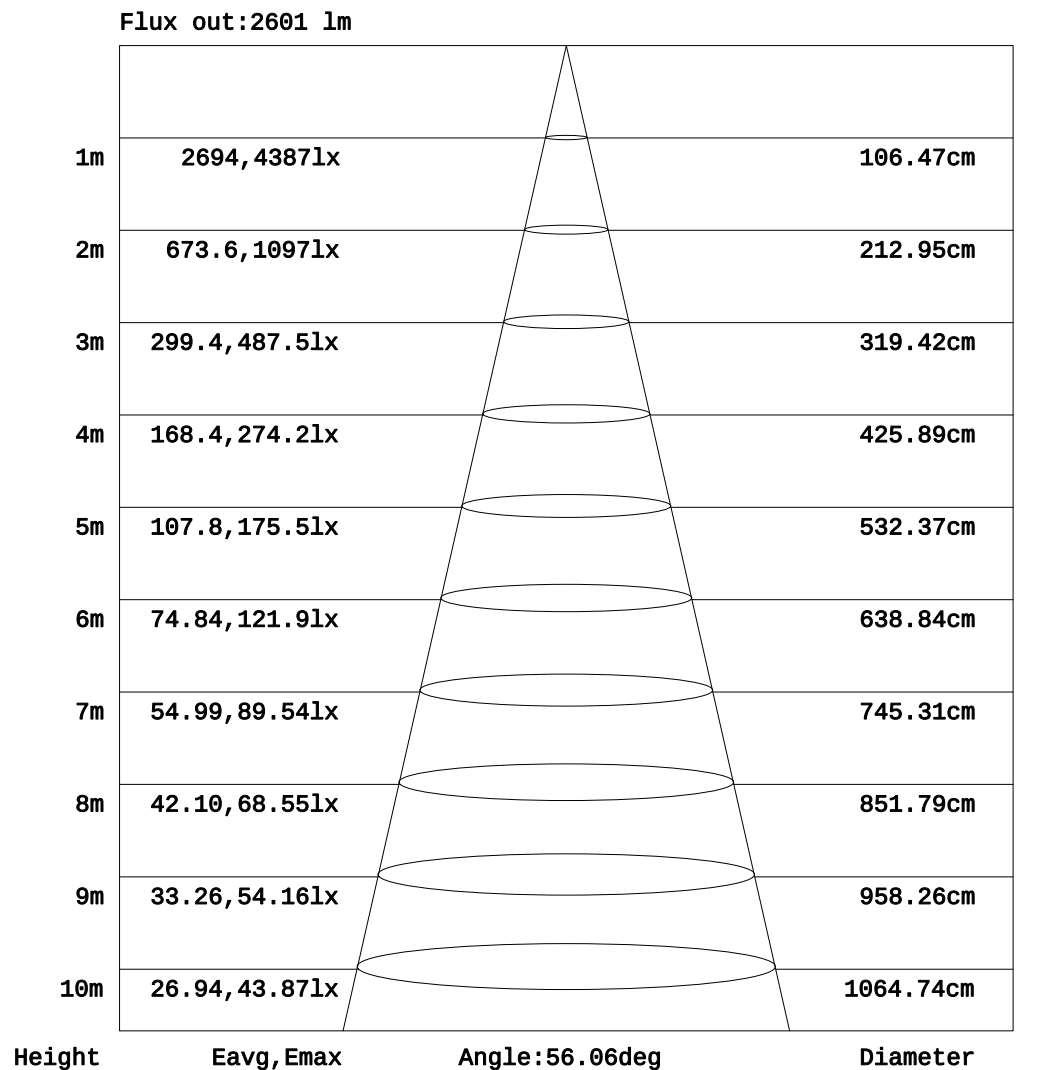


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:



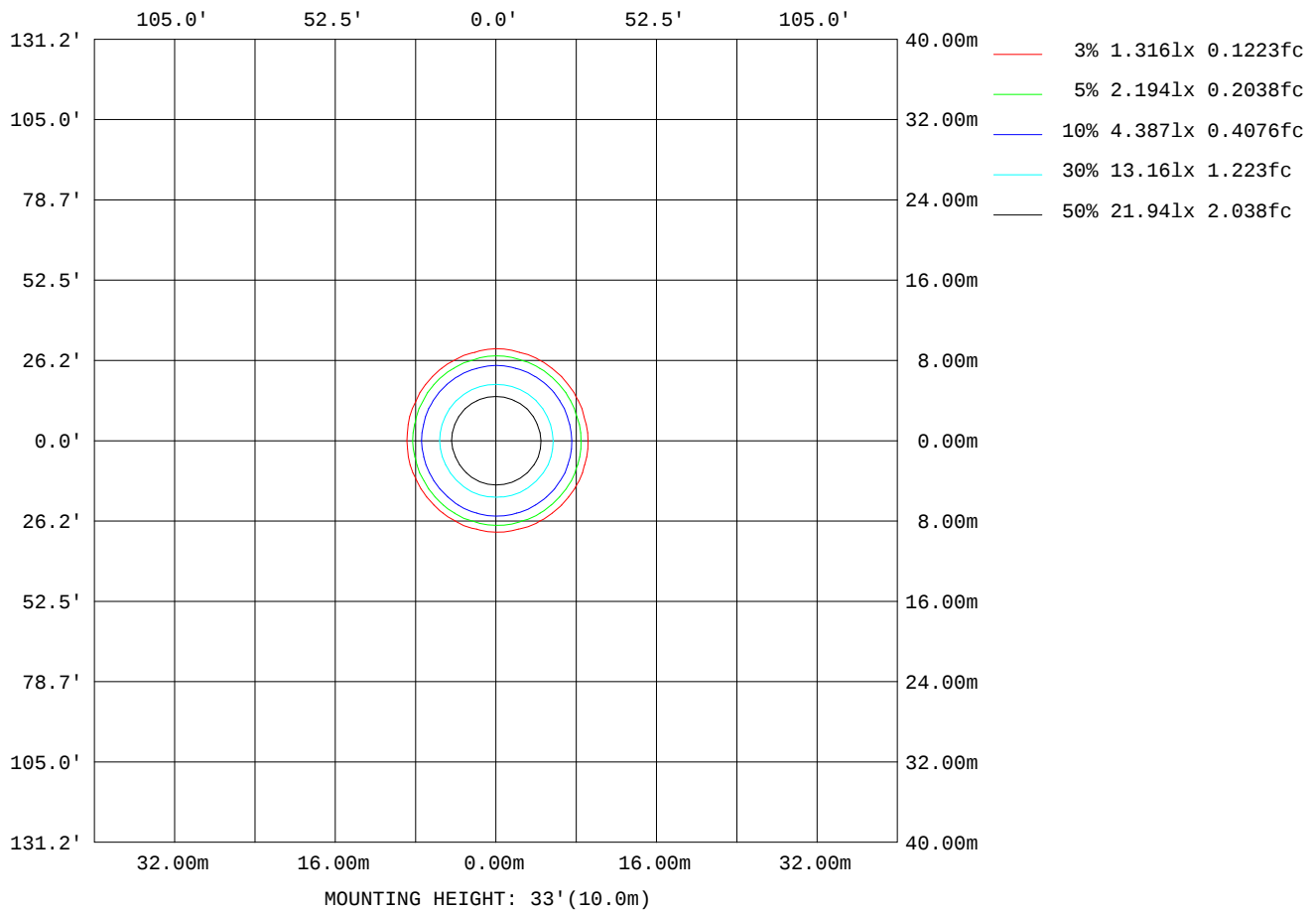
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	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: 2023-12-21

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:220.55V I:0.1856A P:39.576W PF:0.9669 Freq:50.01Hz Lamp Flux:3572.28x1 lm		
NAME: TH40-BKTC40C021P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 77mm	Shielding Angle:

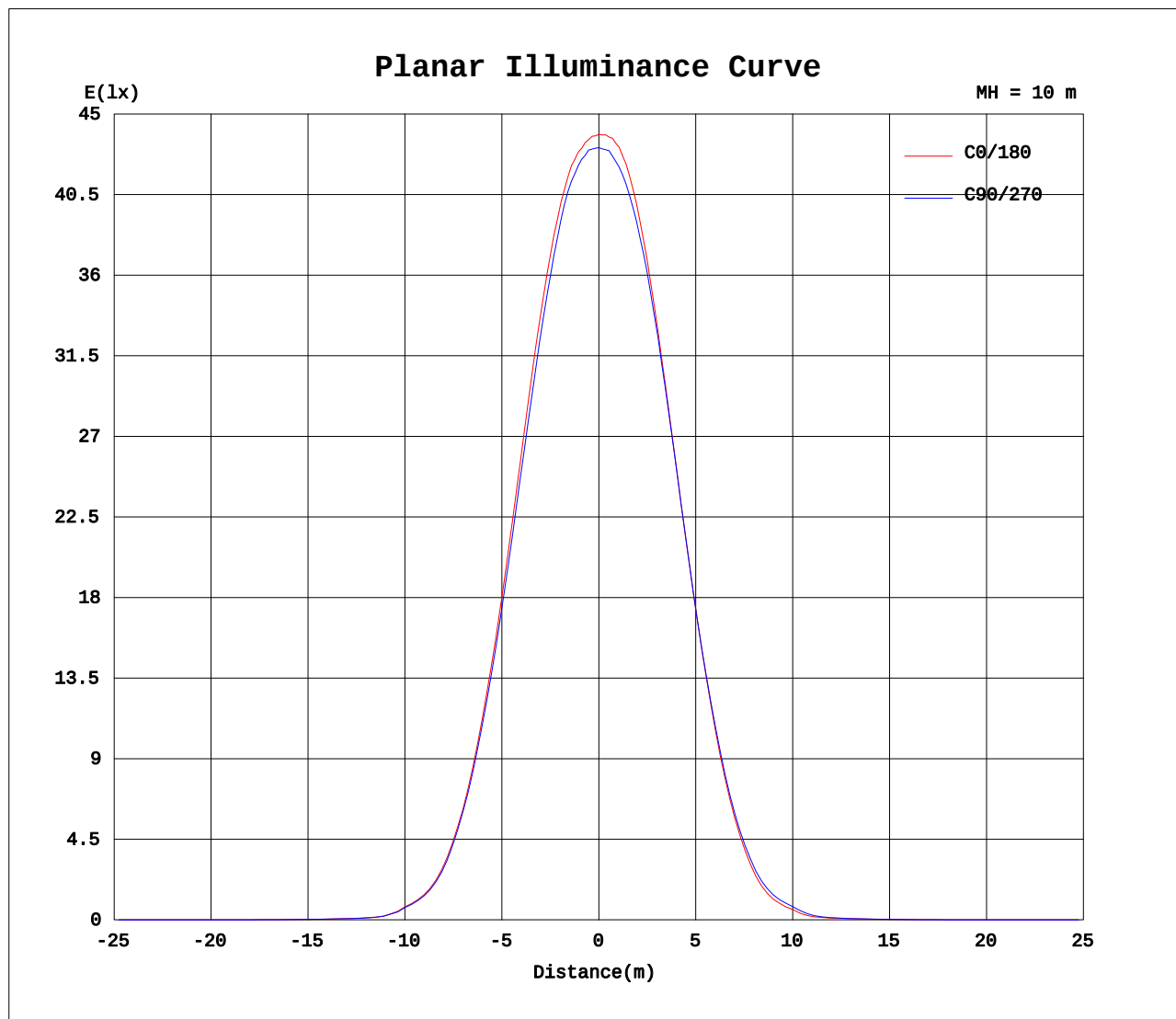
AvgL	cd/m2
L_0~180(65)av	1873
L_0~180(75)av	531
L_0~180(85)av	476
L_90~270(65)av	1861
L_90~270(75)av	572
L_90~270(85)av	522
L_45(65)av	1984
L_45(75)av	562
L_45(85)av	527

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-12-21

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: 2023-12-21

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:

```