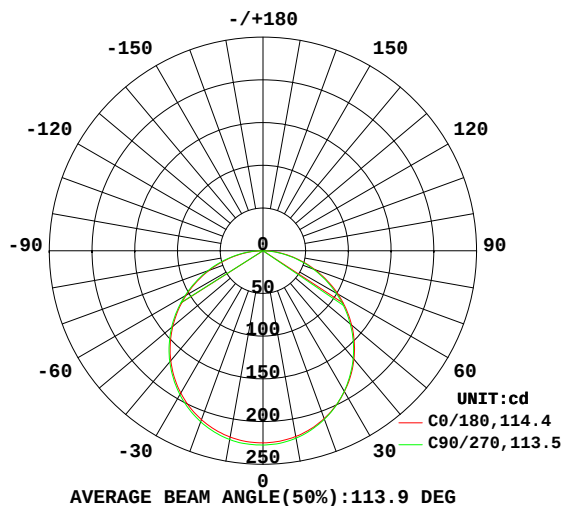


LUMINAIRE PHOTOMETRIC TEST REPORT

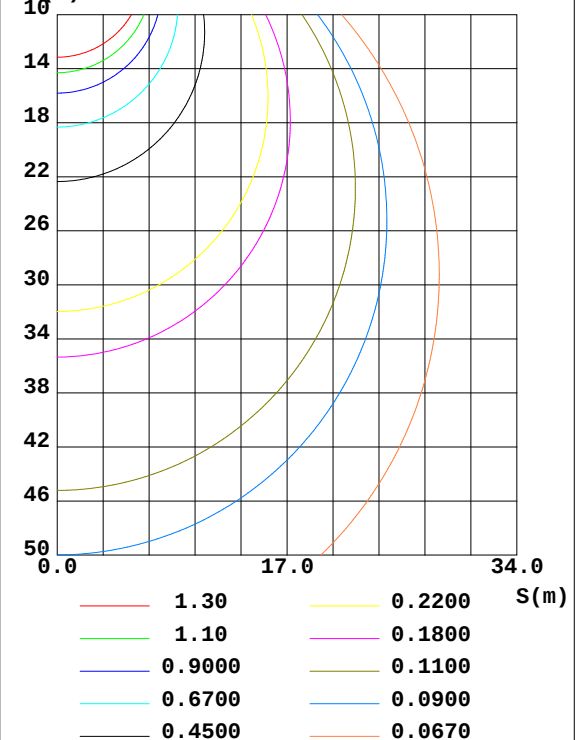
Test:U:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 35.78 lm/W			
MODEL	4000K	I _{max} (cd)	227.4	S/MH(C0/180)	1.27
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	660.12	η UP, DN(C0-180)	0.0,49.1
NOMINAL FLUX(lm)	660.12	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.35

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:2024-04-27

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:

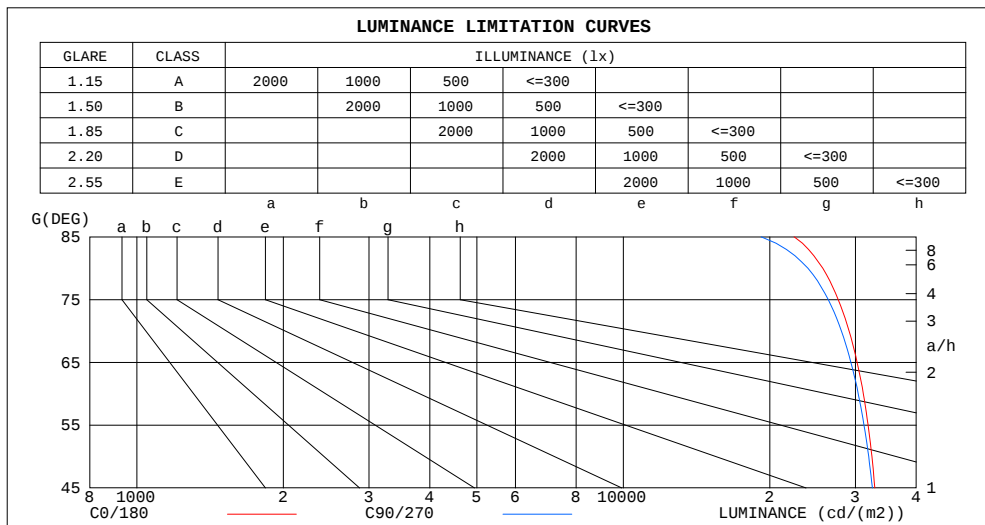
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	220.8	220.2	222.7	222.4	221.4	222.1	224.4	223.2	0- 10	21.38	21.38	3.24, 3.24
20	209.1	207.7	210.0	210.3	210.5	211.3	213.1	211.8	10- 20	61.30	82.68	12.5, 12.5
30	190.5	188.1	190.1	191.1	192.4	193.2	194.6	193.3	20- 30	93.04	175.7	26.6, 26.6
40	165.6	162.4	164.2	165.5	167.9	168.7	169.7	168.2	30- 40	112.5	288.2	43.7, 43.7
50	135.5	132.0	133.4	134.9	137.9	138.8	139.6	138.0	40- 50	117.2	405.4	61.4, 61.4
60	101.2	97.80	98.81	100.4	103.7	104.7	105.5	103.7	50- 60	106.7	512.1	77.6, 77.6
70	64.72	61.75	62.41	63.89	66.95	68.34	69.02	67.29	60- 70	82.89	595.0	90.1, 90.1
80	29.02	26.75	27.04	28.33	30.72	32.42	32.92	31.33	70- 80	50.03	645.0	97.7, 97.7
90	0.3899	0.3783	0.3706	0.3860	0.3320	1.235	1.374	0.6485	80- 90	15.10	660.1	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: 2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	22439	19209
80	25708	23956
75	27654	26377
70	29113	28071
65	30231	29346
60	31145	30404
55	31859	31243
50	32436	31940
45	32887	32506

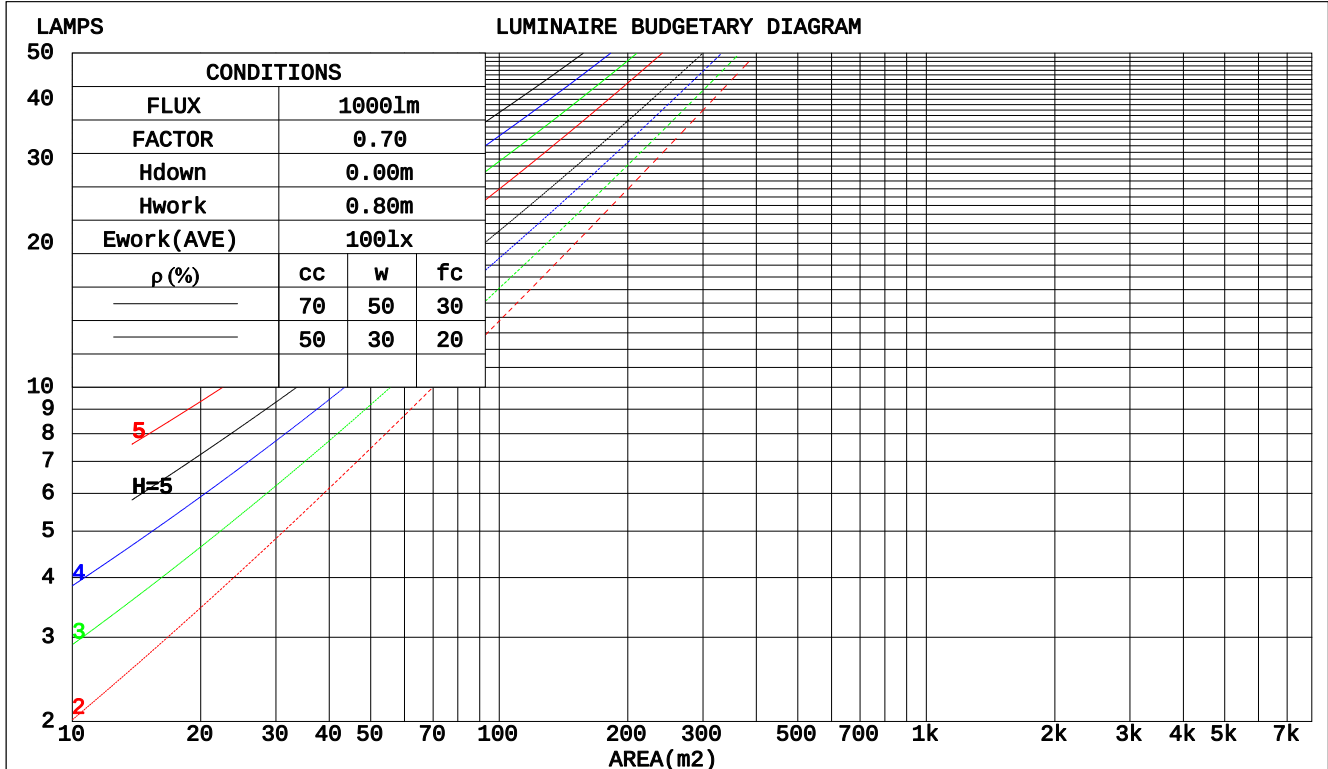
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	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	1.03	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.82	.76	.84	.79	.74	.81	.77	.73	.78	.74	.71	.69
3.0	.79	.70	.64	.77	.69	.63	.74	.68	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.68	.60	.53	.66	.58	.53	.63	.57	.52	.61	.56	.51	.49
5.0	.62	.53	.46	.61	.52	.46	.59	.51	.45	.57	.50	.45	.55	.49	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.40	.51	.45	.39	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.41	.35	.48	.41	.35	.47	.40	.35	.45	.39	.35	.33
8.0	.46	.38	.32	.45	.37	.32	.44	.37	.31	.43	.36	.31	.42	.36	.31	.29
9.0	.42	.34	.28	.42	.34	.28	.41	.33	.28	.40	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.30	.26	.37	.30	.25	.36	.30	.25	.24



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm					
NAME: THF16WW-BK18W24V			TYPE:		WEIGHT:
SPEC.: black RA90 3000K+6000K			DIM.:		SERIAL No.:
MFR.:			SUR.: 325*20mm		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	.318	.181	.057	.311	.177	.056	.297	.171	.054	.285	.164	.053	.274	.159	.051		
2.0	.297	.163	.050	.291	.160	.049	.279	.155	.048	.268	.150	.047	.258	.146	.046		
3.0	.274	.146	.044	.268	.144	.043	.258	.140	.042	.248	.136	.042	.239	.133	.041		
4.0	.252	.131	.039	.247	.129	.038	.238	.126	.038	.229	.123	.037	.221	.120	.037		
5.0	.233	.119	.034	.228	.117	.034	.220	.115	.034	.213	.112	.033	.205	.110	.033		
6.0	.215	.108	.031	.212	.107	.031	.204	.105	.030	.198	.103	.030	.191	.101	.030		
7.0	.200	.099	.028	.197	.098	.028	.190	.096	.028	.184	.094	.027	.179	.093	.027		
8.0	.187	.091	.026	.184	.091	.026	.178	.089	.025	.173	.087	.025	.167	.086	.025		
9.0	.175	.085	.024	.172	.084	.024	.167	.083	.023	.162	.081	.023	.158	.080	.023		
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.149	.075	.021		

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	.181	.156	.134	.155	.134	.115	.106	.092	.080	.061	.053	.046	.020	.017	.015	
2.0	.173	.132	.097	.148	.114	.084	.102	.079	.059	.059	.046	.034	.019	.015	.011	
3.0	.165	.114	.074	.142	.099	.064	.097	.069	.045	.056	.040	.026	.018	.013	.009	
4.0	.158	.101	.058	.135	.087	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.129	.078	.041	.089	.055	.029	.051	.032	.017	.017	.011	.006	
6.0	.143	.082	.039	.123	.071	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.136	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.015	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.118	.060	.022	.101	.052	.019	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm											
NAME: THF16WW-BK18W24V					TYPE:			WEIGHT:			
SPEC.: black RA90 3000K+6000K					DIM.:			SERIAL No.:			
MFR.:					SUR.: 325*20mm			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	26.2	27.8	26.5	28.0	28.2	26.1	27.7	26.4	27.9	28.1	
	3H	27.8	29.2	28.1	29.5	29.7	27.7	29.1	28.0	29.3	29.6
	4H	28.5	29.8	28.8	30.1	30.3	28.3	29.7	28.6	29.9	30.2
	6H	29.0	30.3	29.3	30.5	30.8	28.8	30.1	29.1	30.3	30.6
	8H	29.1	30.4	29.5	30.7	31.0	28.9	30.2	29.3	30.4	30.7
	12H	29.2	30.4	29.6	30.7	31.0	29.0	30.2	29.4	30.5	30.8
4H	2H	26.8	28.2	27.1	28.4	28.7	26.8	28.1	27.1	28.4	28.6
	3H	28.6	29.8	29.0	30.1	30.4	28.5	29.7	28.8	30.0	30.3
	4H	29.4	30.5	29.8	30.8	31.1	29.2	30.3	29.6	30.7	31.0
	6H	30.0	31.0	30.4	31.3	31.7	29.8	30.8	30.2	31.2	31.5
	8H	30.2	31.1	30.7	31.5	31.9	30.0	30.9	30.5	31.3	31.7
	12H	30.4	31.2	30.8	31.6	32.0	30.2	31.0	30.6	31.4	31.8
8H	4H	29.7	30.6	30.1	30.9	31.3	29.5	30.4	29.9	30.8	31.2
	6H	30.4	31.2	30.9	31.6	32.0	30.3	31.0	30.7	31.4	31.9
	8H	30.7	31.4	31.2	31.8	32.3	30.6	31.2	31.0	31.6	32.1
	12H	31.0	31.6	31.5	32.0	32.5	30.7	31.3	31.2	31.8	32.2
12H	4H	29.7	30.5	30.1	30.9	31.3	29.5	30.4	30.0	30.8	31.2
	6H	30.5	31.2	30.9	31.6	32.0	30.3	31.0	30.8	31.4	31.9
	8H	30.8	31.4	31.3	31.9	32.3	30.7	31.2	31.1	31.7	32.2
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3					

CIE Pub.117, 660.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.4)
Area: 0.0065 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:

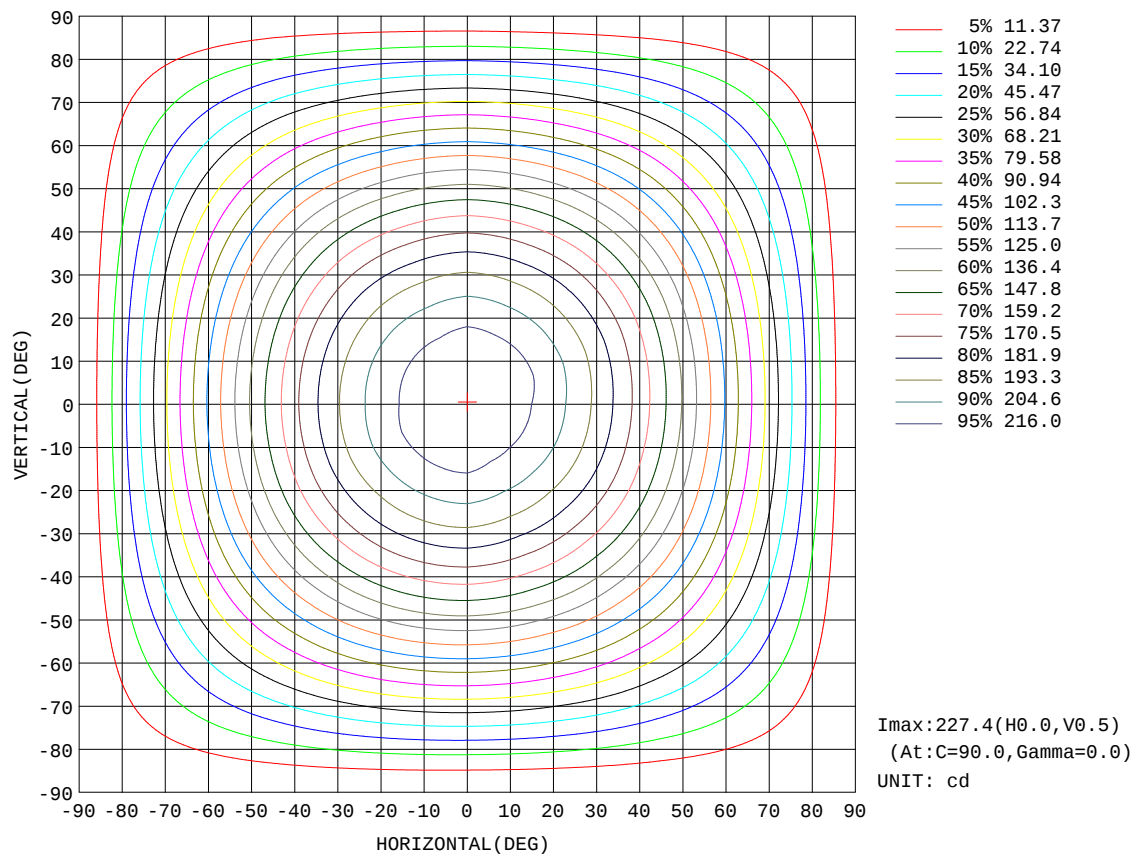
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	38	56	45	38	55	45	38	31
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	64	56	72	65	56	49
1.25	82	72	65	81	71	64	78	70	63	56
1.50	88	77	70	86	77	70	83	75	69	61
2.00	94	86	79	93	84	78	89	82	77	69
2.50	98	90	84	96	89	83	92	86	82	73
3.00	102	95	89	100	93	88	96	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	95	85
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:2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:



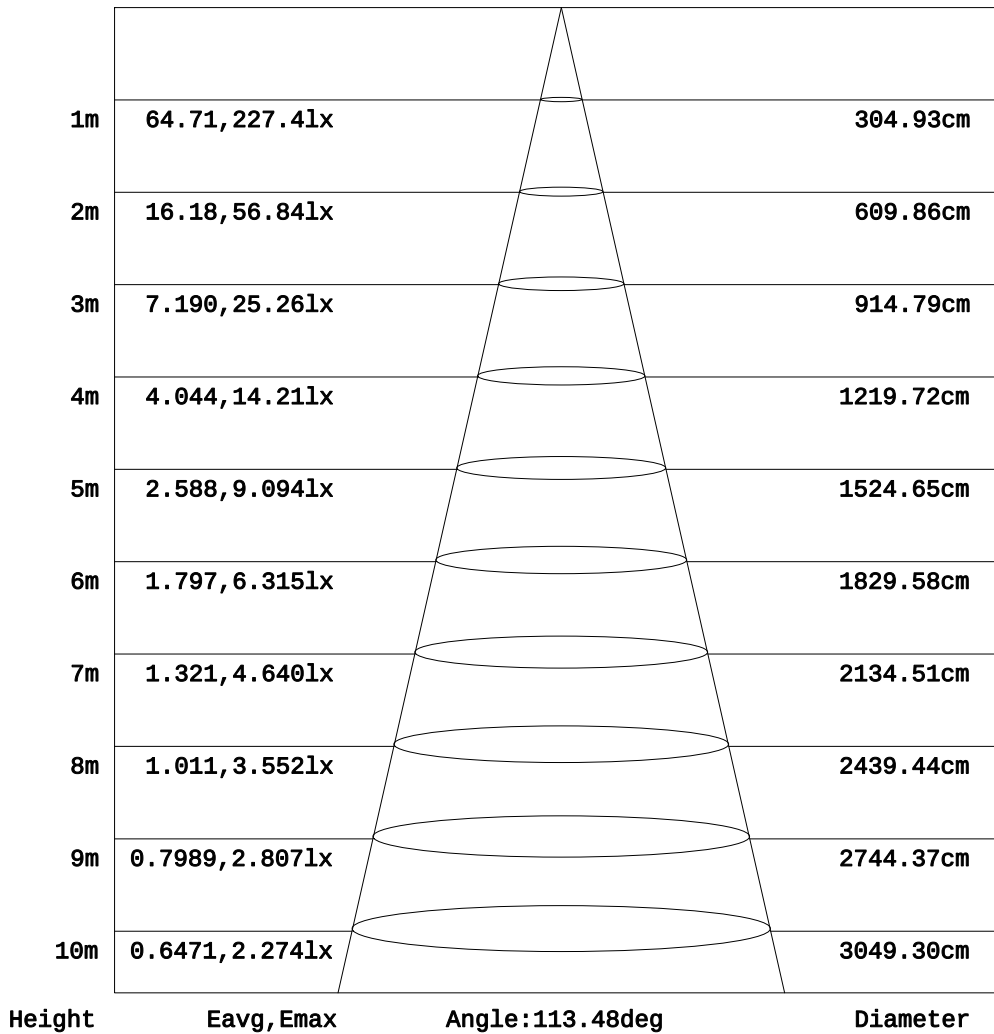
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:

Flux out:482.0 lm



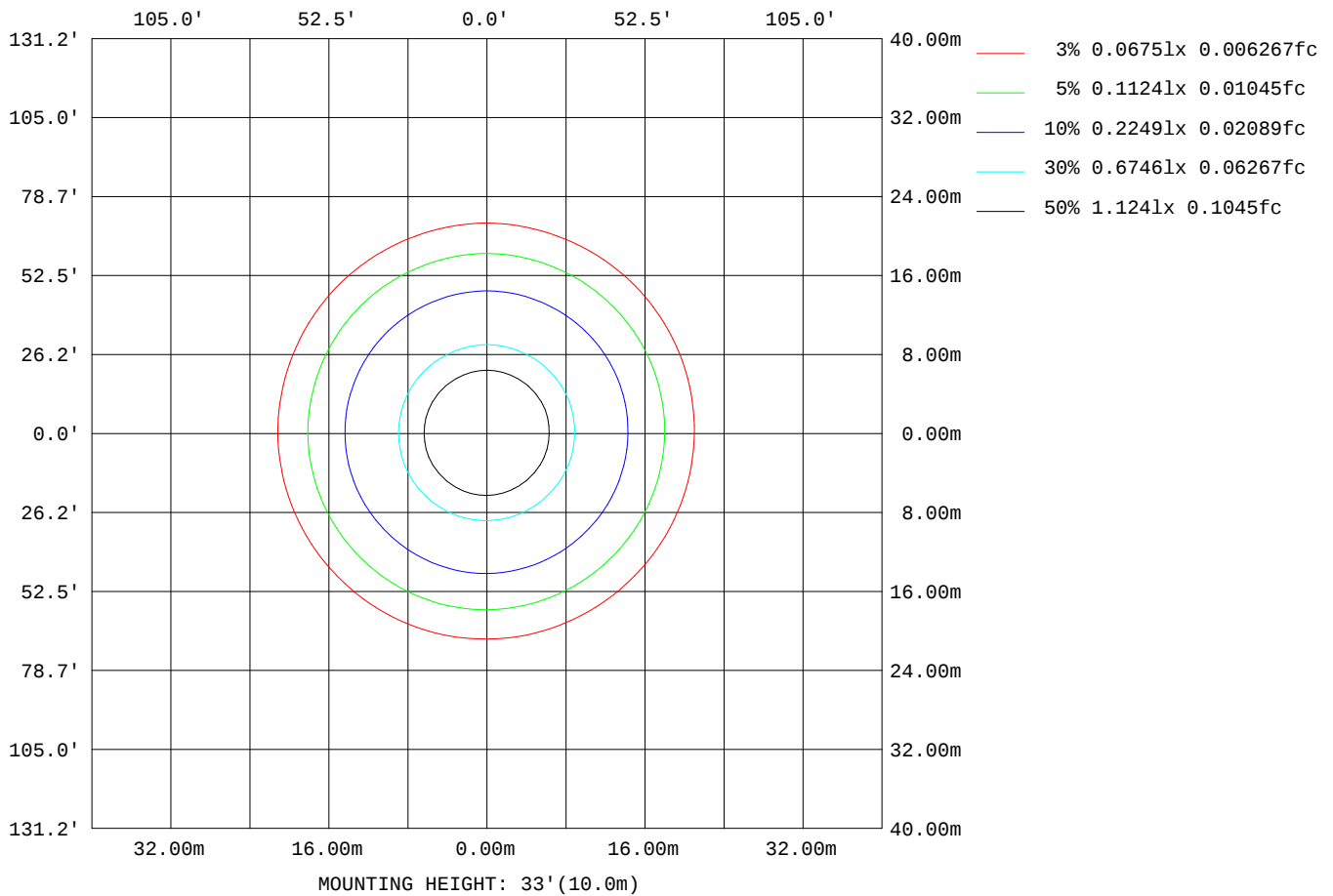
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-04-27

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:230.09V I:0.1711A P:18.450W PF:0.4687 Freq:49.99Hz Lamp Flux:660.12x1 lm		
NAME: THF16WW-BK18W24V	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+6000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 325*20mm	Shielding Angle:

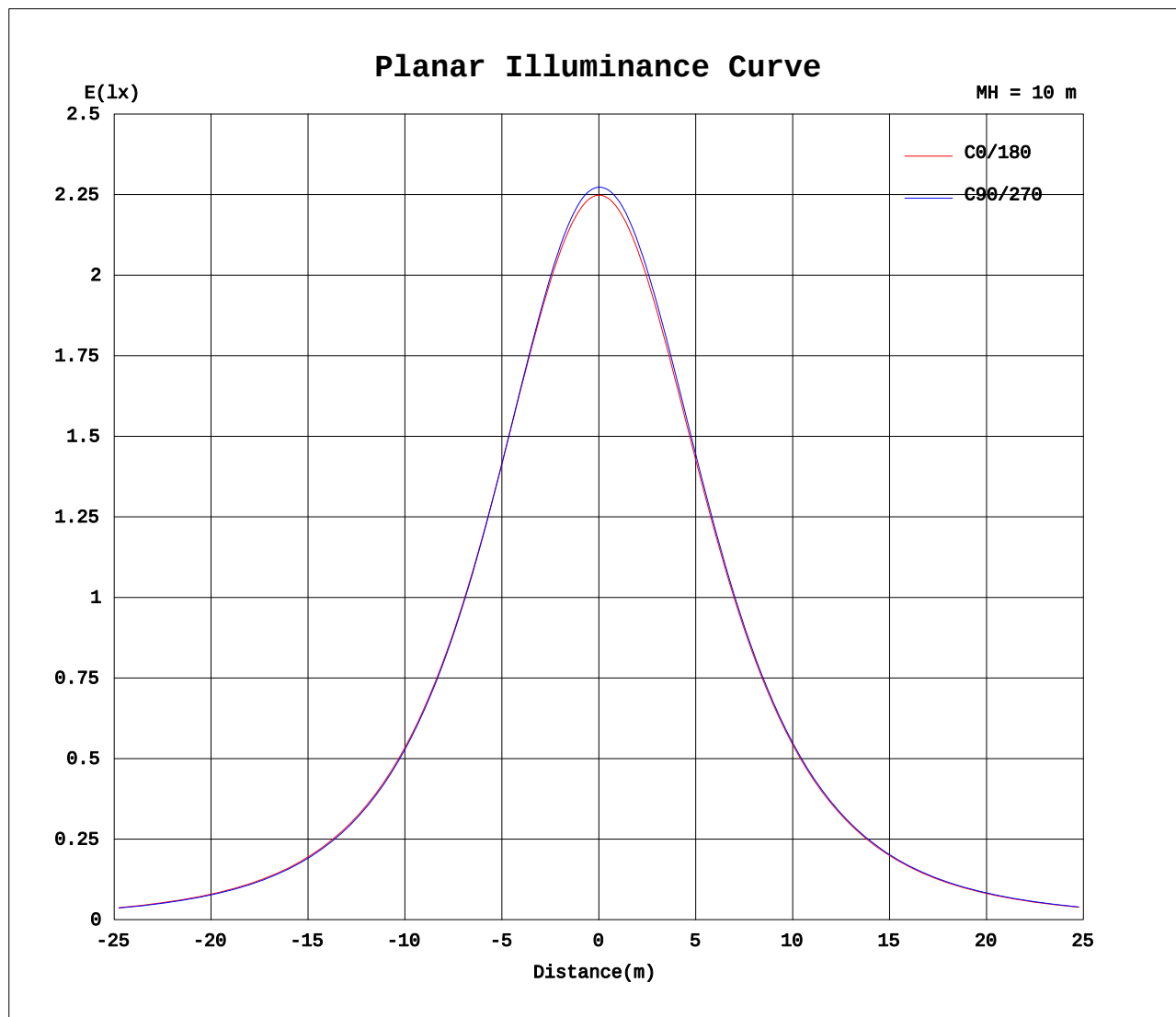
AvgL	cd/m2
L_0~180(65)av	30667
L_0~180(75)av	28252
L_0~180(85)av	23710
L_90~270(65)av	30578
L_90~270(75)av	28260
L_90~270(85)av	23863
L_45(65)av	30431
L_45(75)av	28061
L_45(85)av	23614

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-04-27

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: 2024-04-27

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:

```