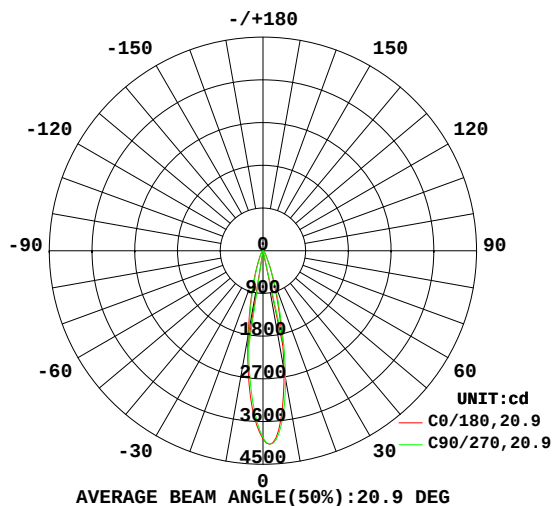


LUMINAIRE PHOTOMETRIC TEST REPORT

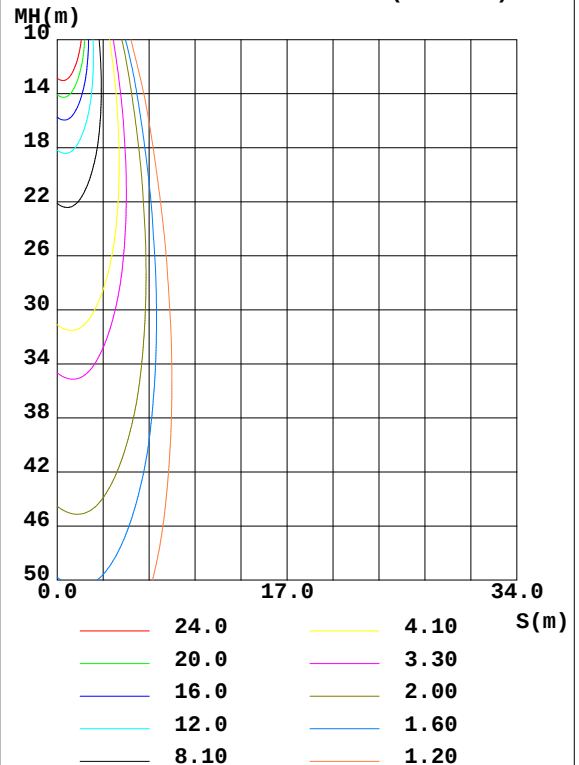
Test:U:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.37lx1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.82 lm/W			
MODEL	3000K	I _{max} (cd)	4217	S/MH(C0/180)	0.32
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	0.30
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	847.37	η UP, DN(C0-180)	0.0, 57.5
NOMINAL FLUX(lm)	847.371	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 42.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.00

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:2023-11-24

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:

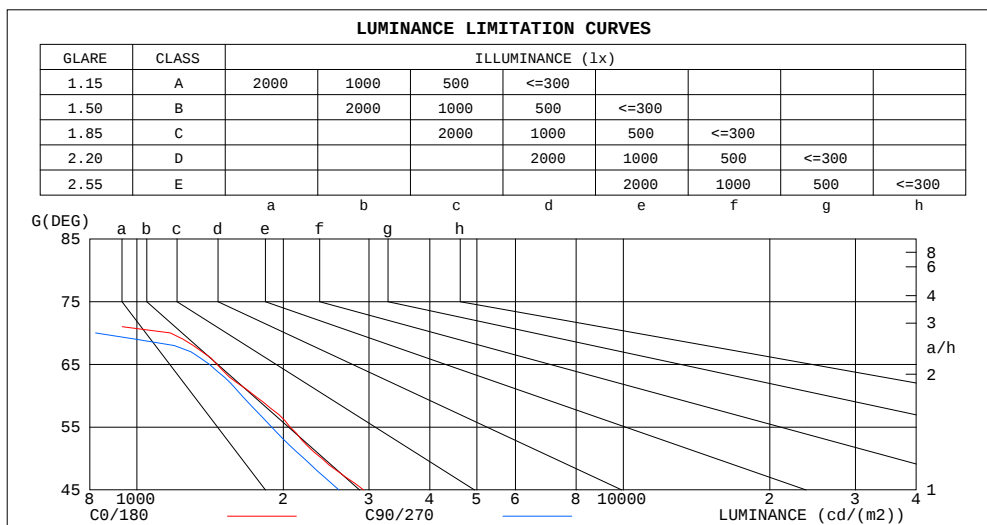
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2549	2975	2739	2140	1808	1647	1695	2004	0- 10	284.5	284.5	33.6, 33.6
20	604.6	759.8	663.2	489.8	419.8	378.9	377.3	467.1	10- 20	317.2	601.7	71, 71
30	154.3	171.5	144.7	119.7	112.0	103.6	107.8	126.9	20- 30	119.8	721.5	85.1, 85.1
40	71.28	73.85	62.27	48.73	45.77	45.93	52.29	61.07	30- 40	53.37	774.9	91.4, 91.4
50	39.28	40.91	36.09	27.01	25.01	25.88	30.14	35.15	40- 50	33.38	808.3	95.4, 95.4
60	22.22	23.44	20.92	16.87	15.96	16.04	17.34	19.30	50- 60	22.50	830.8	98, 98
70	10.20	9.238	7.158	5.670	6.126	7.264	8.095	8.928	60- 70	13.53	844.3	99.6, 99.6
80	0.3415	0.4113	0.2680	0.1552	0.0229	0.0421	0.0998	0.2188	70- 80	3.012	847.3	100, 100
90	0.0309	0.0309	0.0309	0.0306	0.0039	0.0039	0	0	80- 90	0.0497	847.4	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: 2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	21	19
80	77	61
75	450	449
70	1171	822
65	1460	1410
60	1746	1644
55	2066	1893
50	2401	2206
45	2924	2601

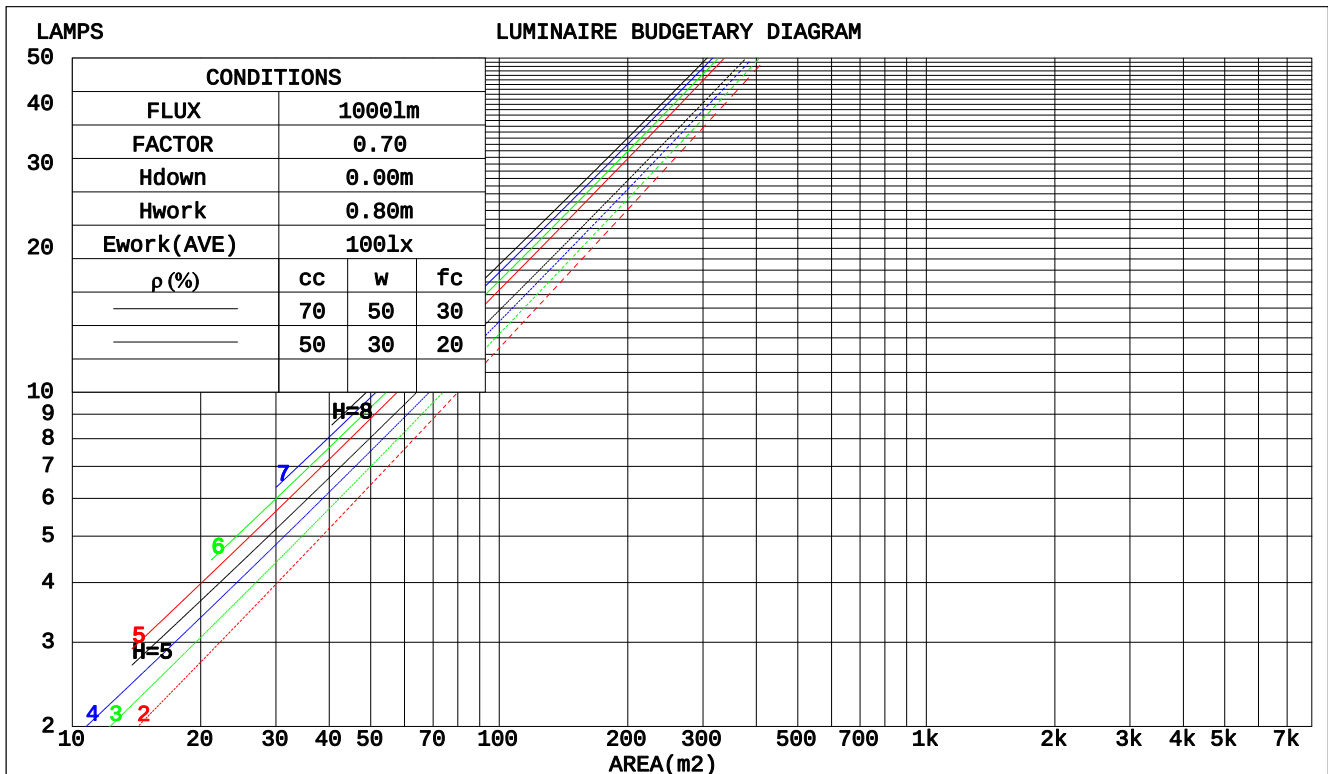
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	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)															
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	1.12	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	1.06	1.02	.00	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.94	.92	.91
3.0	1.00	.96	.93	.99	.95	.92	.97	.93	.91	.94	.92	.89	.92	.90	.88	.87
4.0	.96	.91	.88	.95	.91	.87	.93	.89	.86	.91	.88	.85	.89	.86	.84	.83
5.0	.92	.87	.83	.91	.86	.83	.89	.85	.82	.88	.84	.82	.86	.83	.81	.80
6.0	.88	.83	.80	.87	.83	.80	.86	.82	.79	.85	.81	.79	.83	.80	.78	.77
7.0	.85	.80	.77	.84	.80	.76	.83	.79	.76	.82	.78	.76	.81	.78	.75	.74
8.0	.82	.77	.74	.81	.77	.74	.80	.76	.73	.79	.76	.73	.78	.75	.73	.72
9.0	.79	.75	.71	.79	.74	.71	.78	.74	.71	.77	.73	.71	.76	.73	.71	.70
10.0	.77	.72	.69	.76	.72	.69	.76	.72	.69	.75	.71	.69	.74	.71	.69	.68



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm					
NAME: DL1541-BKTC10C02			TYPE:		WEIGHT:
SPEC.: black RA90 3000K+5000K			DIM.:		SERIAL No.:
MFR.:			SUR.: 90mm		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	.153	.087	.028	.147	.084	.027	.134	.077	.025	.123	.071	.023	.112	.065	.021	
2.0	.144	.079	.024	.139	.076	.024	.128	.071	.022	.119	.067	.021	.110	.062	.020	
3.0	.135	.072	.022	.130	.070	.021	.122	.066	.020	.114	.062	.019	.106	.059	.018	
4.0	.127	.066	.019	.123	.064	.019	.115	.061	.018	.108	.058	.018	.102	.055	.017	
5.0	.119	.061	.018	.116	.059	.017	.109	.057	.017	.103	.055	.016	.098	.052	.016	
6.0	.112	.056	.016	.109	.055	.016	.104	.053	.015	.099	.051	.015	.094	.049	.015	
7.0	.106	.053	.015	.104	.052	.015	.099	.050	.014	.094	.048	.014	.090	.047	.014	
8.0	.101	.049	.014	.099	.049	.014	.094	.047	.013	.090	.046	.013	.087	.044	.013	
9.0	.096	.046	.013	.094	.046	.013	.090	.045	.013	.087	.043	.012	.083	.042	.012	
10.0	.092	.044	.012	.090	.043	.012	.086	.042	.012	.083	.041	.012	.080	.040	.012	

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	.169	.158	.147	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.153	.133	.116	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013	
3.0	.138	.113	.093	.119	.098	.081	.082	.068	.057	.047	.040	.033	.015	.013	.011	
4.0	.127	.098	.077	.109	.085	.067	.075	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.117	.086	.064	.100	.075	.055	.069	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.108	.076	.054	.093	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.006	
7.0	.100	.068	.046	.086	.059	.040	.060	.042	.028	.035	.024	.017	.011	.008	.006	
8.0	.094	.062	.040	.081	.054	.034	.056	.038	.024	.033	.022	.015	.011	.007	.005	
9.0	.088	.056	.034	.076	.049	.030	.053	.034	.021	.031	.020	.013	.010	.007	.004	
10.0	.083	.051	.030	.072	.045	.026	.050	.031	.019	.029	.019	.011	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm										
NAME: DL1541-BKTC10C02					TYPE:			WEIGHT:		
SPEC.: black RA90 3000K+5000K					DIM.:			SERIAL No.:		
MFR.:					SUR.: 90mm			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	11.4	12.1	11.6	12.3	12.4	11.0	11.7	11.2	11.9	12.1
3H	11.9	12.6	12.2	12.8	13.0	11.5	12.2	11.8	12.4	12.6
4H	11.9	12.6	12.2	12.8	13.0	11.5	12.2	11.8	12.4	12.6
6H	11.9	12.5	12.2	12.7	13.0	11.4	12.1	11.7	12.3	12.5
8H	11.8	12.4	12.1	12.7	12.9	11.4	12.0	11.7	12.2	12.5
12H	11.8	12.4	12.1	12.6	12.9	11.3	11.9	11.6	12.2	12.5
4H 2H	11.7	12.3	11.9	12.5	12.8	11.4	12.0	11.6	12.2	12.4
3H	12.3	12.9	12.6	13.2	13.4	11.9	12.5	12.2	12.8	13.0
4H	12.3	12.8	12.7	13.1	13.4	11.9	12.5	12.3	12.8	13.1
6H	12.2	12.7	12.6	13.0	13.4	11.8	12.3	12.2	12.6	13.0
8H	12.2	12.6	12.6	13.0	13.3	11.8	12.2	12.2	12.6	12.9
12H	12.1	12.5	12.5	12.9	13.3	11.7	12.1	12.1	12.5	12.9
8H 4H	12.2	12.7	12.6	13.0	13.4	11.9	12.3	12.2	12.6	13.0
6H	12.1	12.5	12.6	12.9	13.3	11.8	12.1	12.2	12.5	12.9
8H	12.1	12.4	12.5	12.8	13.3	11.7	12.0	12.1	12.4	12.9
12H	12.0	12.3	12.5	12.7	13.2	11.6	11.9	12.1	12.4	12.8
12H 4H	12.2	12.6	12.6	12.9	13.3	11.8	12.2	12.2	12.6	13.0
6H	12.1	12.4	12.5	12.8	13.3	11.7	12.0	12.1	12.4	12.9
8H	12.0	12.3	12.5	12.7	13.2	11.6	11.9	12.1	12.4	12.8
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.8 / - 1.0					+ 0.8 / - 1.1				
1.5H	+ 0.9 / - 0.8					+ 0.8 / - 1.0				
2.0H	+ 1.3 / - 1.0					+ 1.0 / - 1.0				

CIE Pub.117, 847.4 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.6)
Area: 0.02545 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:

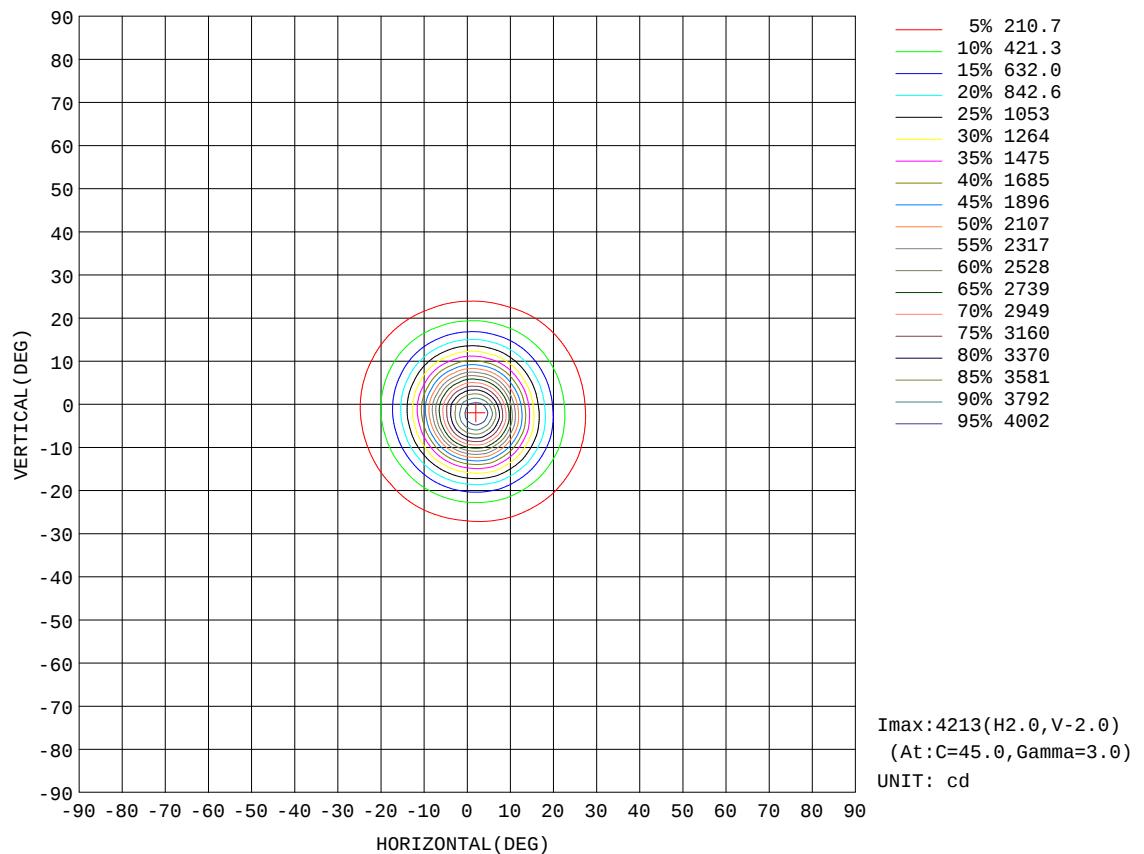
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	80	76	86	79	76	85	79	76	72
0.80	94	88	84	93	87	84	92	87	83	79
1.00	98	92	89	97	92	88	96	92	88	84
1.25	102	97	93	101	96	93	99	95	92	88
1.50	105	100	97	104	100	96	102	98	95	91
2.00	108	104	100	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	107	104	106	104	102	95
4.00	114	111	108	112	109	107	108	106	104	97
5.00	115	113	111	113	111	109	109	107	106	98
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:2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:

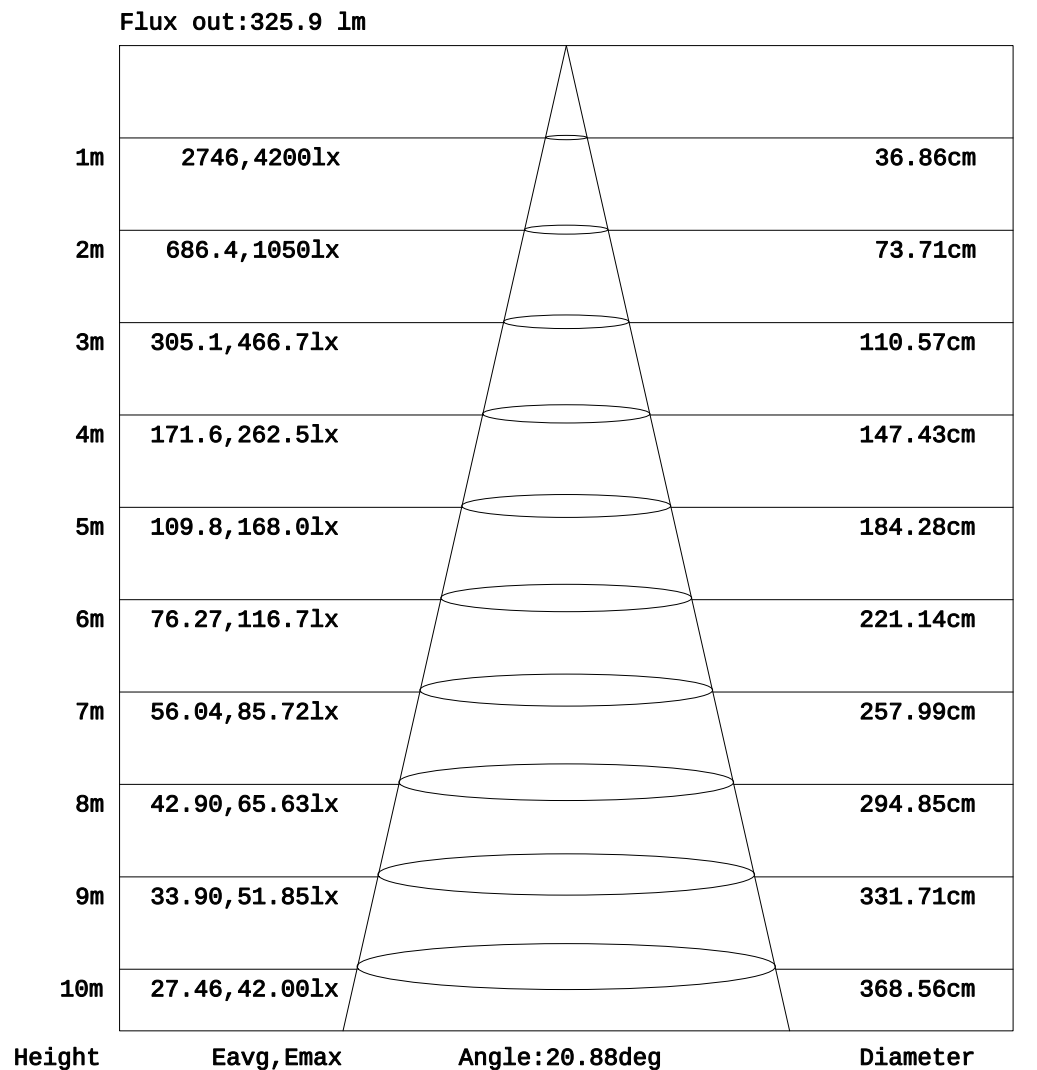


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:



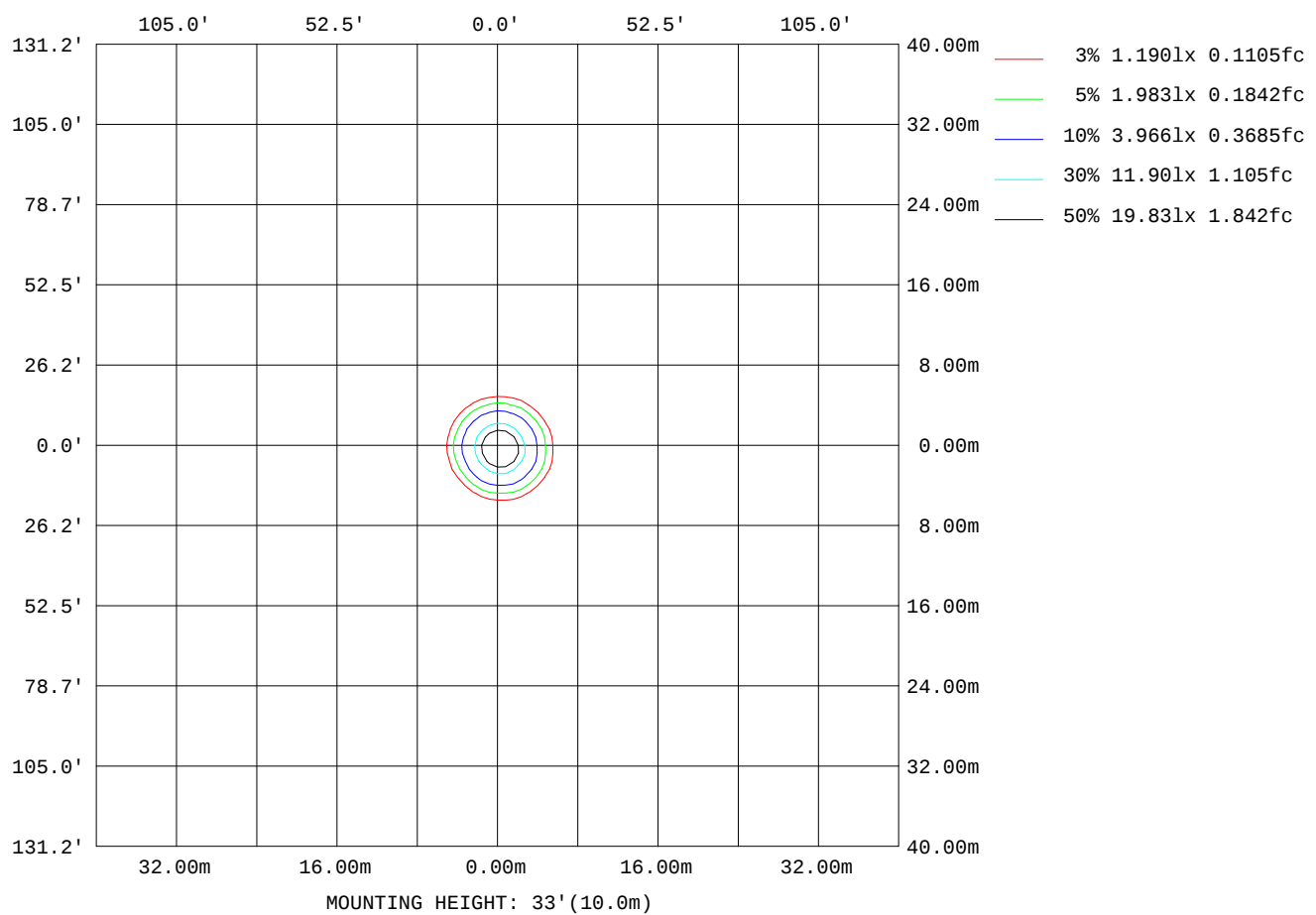
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-24

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:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:



```

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:

```

LED Avg.L Report

Test:U:220.53V I:0.0507A P:10.616W PF:0.9502 Freq:50.01Hz Lamp Flux:847.371x1 lm		
NAME: DL1541-BKTC10C02	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 90mm	Shielding Angle:

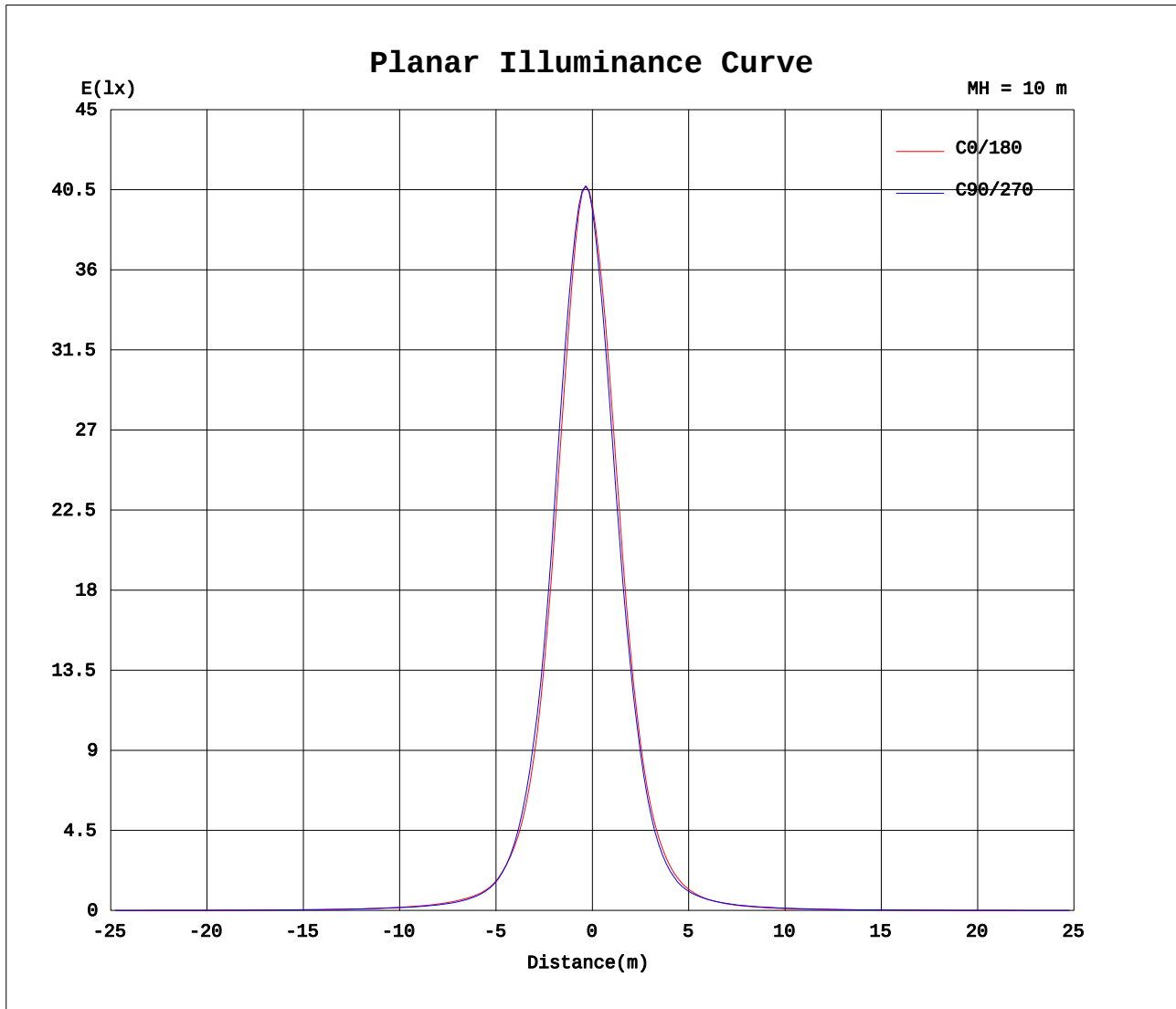
AvgL	cd/m2
L_0~180(65)av	1289
L_0~180(75)av	373
L_0~180(85)av	11
L_90~270(65)av	1297
L_90~270(75)av	399
L_90~270(85)av	10
L_45(65)av	1272
L_45(75)av	380
L_45(85)av	10

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-11-24

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: 2023-11-24

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:

```