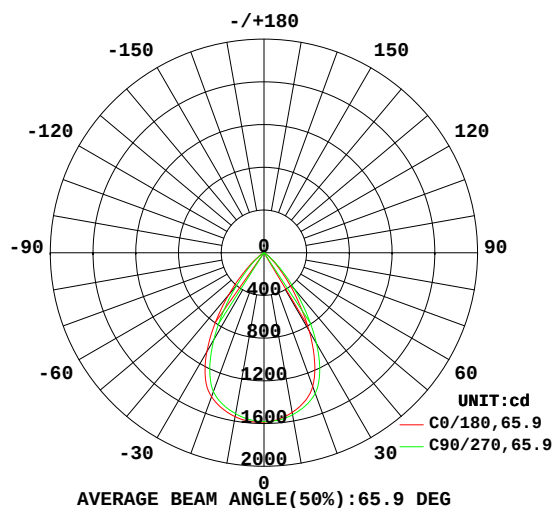


LUMINAIRE PHOTOMETRIC TEST REPORT

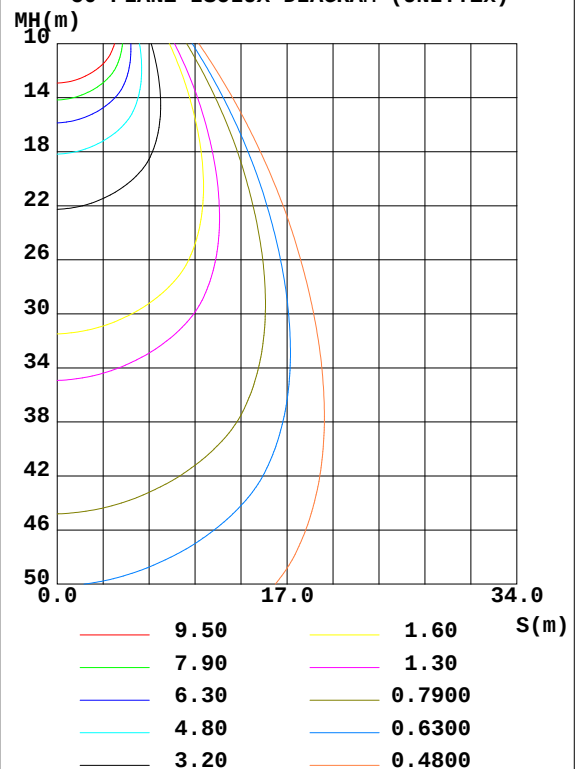
Test:U:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 99.32 lm/W			
MODEL	TB25171211 4000K	I _{max} (cd)	1588	S/MH(C0/180)	1.02
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	0.96
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	1777.0	η UP, DN(C0-180)	0.0, 50.1
NOMINAL FLUX(lm)	1777.03	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
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: 2023-11-04

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:

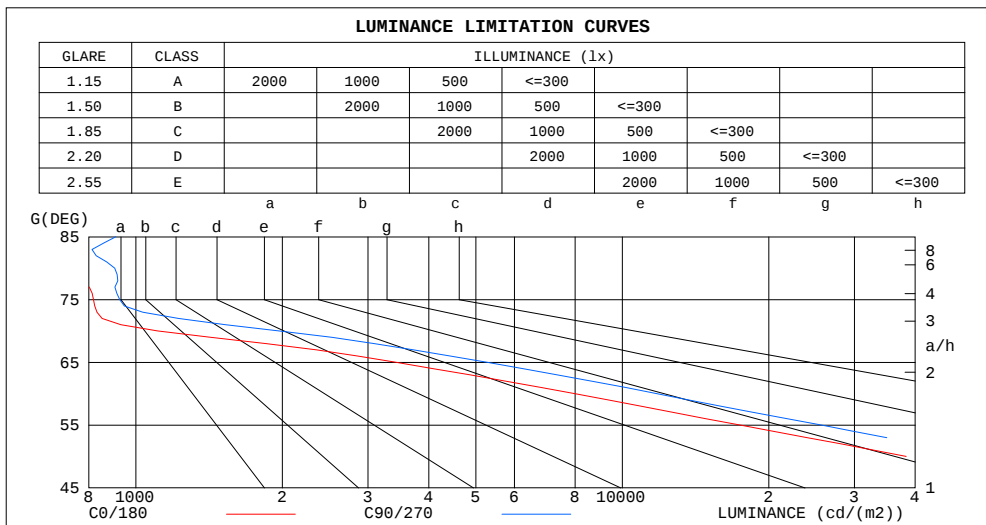
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1518	1527	1541	1551	1559	1549	1531	1517	0- 10	148.9	148.9	8.38, 8.38
20	1334	1366	1402	1424	1435	1427	1385	1346	10- 20	415.8	564.6	31.8, 31.8
30	848.6	899.1	985.3	1053	1072	1036	940.7	864.1	20- 30	550.4	1115	62.7, 62.7
40	338.2	373.1	439.9	500.9	517.3	472.1	399.5	348.2	30- 40	422.2	1537	86.5, 86.5
50	81.77	94.16	116.2	136.9	143.2	122.7	99.75	84.18	40- 50	184.5	1722	96.9, 96.9
60	13.27	15.80	19.56	23.50	24.69	20.68	16.69	13.90	50- 60	46.16	1768	99.5, 99.5
70	1.259	1.488	2.235	3.136	3.211	2.706	1.766	1.236	60- 70	7.981	1776	99.9, 99.9
80	0.4176	0.4060	0.5218	0.5796	0.4433	0.4664	0.3466	0.2541	70- 80	0.9377	1777	100, 100
90	0.2316	0.2200	0.1930	0.1969	0.0502	0.0386	0.0347	0.0347	80- 90	0.2337	1777	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:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	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	801	909
80	724	905
75	818	926
70	1109	1969
65	3429	5277
60	7991	11782
55	17466	25673
50	38315	54457
45	75349	101934

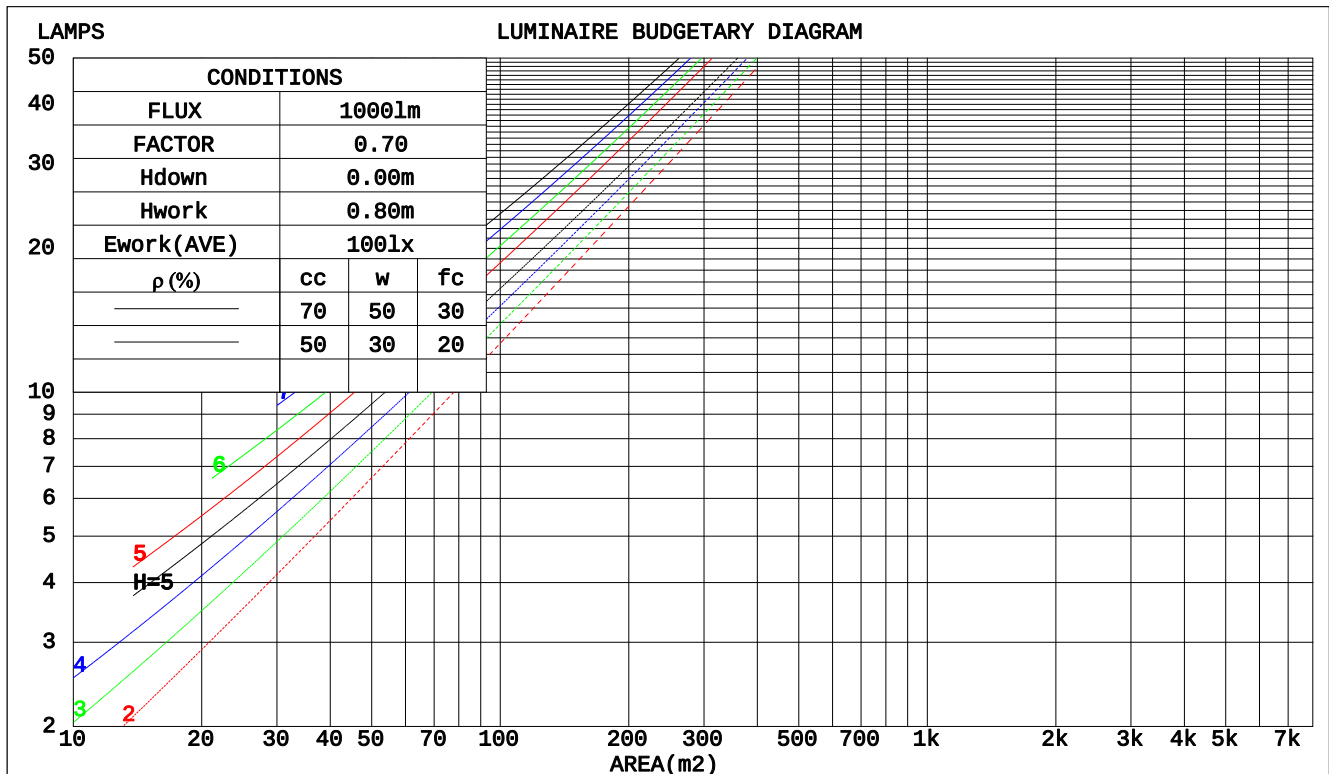
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	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						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	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.95	.93
2.0	1.02	.98	.94	1.00	.96	.93	.97	.94	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.94	.89	.85	.93	.88	.84	.90	.86	.83	.88	.84	.81	.86	.83	.80	.79
4.0	.87	.82	.77	.86	.81	.77	.84	.79	.76	.82	.78	.75	.80	.77	.74	.72
5.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.77	.72	.69	.75	.71	.68	.67
6.0	.76	.69	.65	.75	.69	.65	.73	.68	.64	.72	.67	.64	.71	.66	.63	.62
7.0	.71	.64	.60	.70	.64	.60	.69	.63	.59	.67	.63	.59	.66	.62	.59	.57
8.0	.66	.60	.55	.66	.60	.55	.64	.59	.55	.63	.58	.55	.62	.58	.55	.53
9.0	.62	.56	.52	.62	.56	.51	.61	.55	.51	.60	.55	.51	.59	.54	.51	.49
10.0	.58	.52	.48	.58	.52	.48	.57	.52	.48	.56	.51	.48	.55	.51	.48	.46



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm					
NAME: BJ21-BKTC20C023P			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	.188	.107	.034	.181	.103	.033	.168	.097	.031	.157	.090	.029	.146	.085	.027	
2.0	.182	.100	.031	.176	.097	.030	.165	.092	.029	.155	.087	.027	.146	.083	.026	
3.0	.174	.093	.028	.169	.091	.027	.160	.087	.026	.151	.083	.025	.144	.080	.025	
4.0	.166	.086	.025	.162	.085	.025	.154	.082	.024	.147	.079	.024	.140	.076	.023	
5.0	.159	.081	.023	.155	.080	.023	.148	.077	.023	.142	.075	.022	.135	.072	.022	
6.0	.152	.076	.022	.148	.075	.022	.142	.073	.021	.136	.071	.021	.131	.069	.020	
7.0	.145	.072	.020	.142	.071	.020	.136	.069	.020	.131	.067	.020	.126	.066	.019	
8.0	.139	.068	.019	.136	.067	.019	.131	.065	.019	.126	.064	.018	.122	.063	.018	
9.0	.133	.064	.018	.130	.063	.018	.126	.062	.018	.122	.061	.017	.118	.060	.017	
10.0	.127	.061	.017	.125	.060	.017	.121	.059	.017	.117	.058	.017	.114	.057	.016	

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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.158	.132	.111	.135	.114	.096	.092	.079	.067	.053	.046	.039	.017	.015	.013		
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.136	.099	.071	.117	.086	.061	.081	.060	.043	.047	.035	.026	.015	.011	.008		
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.036	.044	.031	.021	.014	.010	.007		
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.026	.015	.013	.008	.005		
8.0	.110	.065	.035	.094	.057	.030	.065	.040	.021	.038	.023	.013	.012	.008	.004		
9.0	.105	.060	.030	.090	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004		
10.0	.100	.056	.026	.086	.048	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm											
NAME: BJ21-BKTC20C023P					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	21.2	22.2	21.4	22.4	22.5	22.1	23.2	22.4	23.3	23.5	
	3H	21.0	21.9	21.3	22.1	22.3	22.0	22.9	22.2	23.1	
	4H	20.9	21.8	21.2	22.0	22.2	21.9	22.8	22.1	23.0	
	6H	20.8	21.6	21.1	21.9	22.1	21.8	22.6	22.1	22.8	
	8H	20.8	21.6	21.1	21.8	22.1	21.7	22.5	22.0	22.8	
	12H	20.7	21.5	21.0	21.8	22.0	21.7	22.4	22.0	22.7	
4H	2H	20.9	21.8	21.2	22.0	22.3	21.9	22.8	22.2	23.0	
	3H	20.7	21.5	21.1	21.8	22.1	21.7	22.5	22.0	22.7	
	4H	20.7	21.3	21.0	21.6	22.0	21.6	22.3	22.0	22.6	
	6H	20.6	21.2	20.9	21.5	21.8	21.5	22.1	21.9	22.4	
	8H	20.5	21.1	20.9	21.4	21.8	21.5	22.0	21.9	22.4	
	12H	20.5	21.0	20.9	21.3	21.7	21.4	21.9	21.8	22.3	
8H	4H	20.5	21.1	20.9	21.4	21.8	21.5	22.0	21.9	22.4	
	6H	20.4	20.9	20.8	21.3	21.7	21.4	21.8	21.8	22.2	
	8H	20.4	20.8	20.8	21.2	21.6	21.3	21.7	21.8	22.1	
	12H	20.3	20.7	20.8	21.1	21.6	21.3	21.6	21.7	22.0	
12H	4H	20.5	21.0	20.9	21.3	21.7	21.4	21.9	21.8	22.3	
	6H	20.4	20.8	20.8	21.2	21.6	21.3	21.7	21.8	22.1	
	8H	20.3	20.7	20.8	21.1	21.6	21.3	21.6	21.7	22.0	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 2.6 / -10.9					+ 3.0 / - 9.8					
1.5H	+ 4.1 / - 7.5					+ 4.5 / - 7.8					
2.0H	+ 5.8 / -10.5					+ 6.4 / -11.0					

CIE Pub.117, 1777 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.0)
Area: 0.00332 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

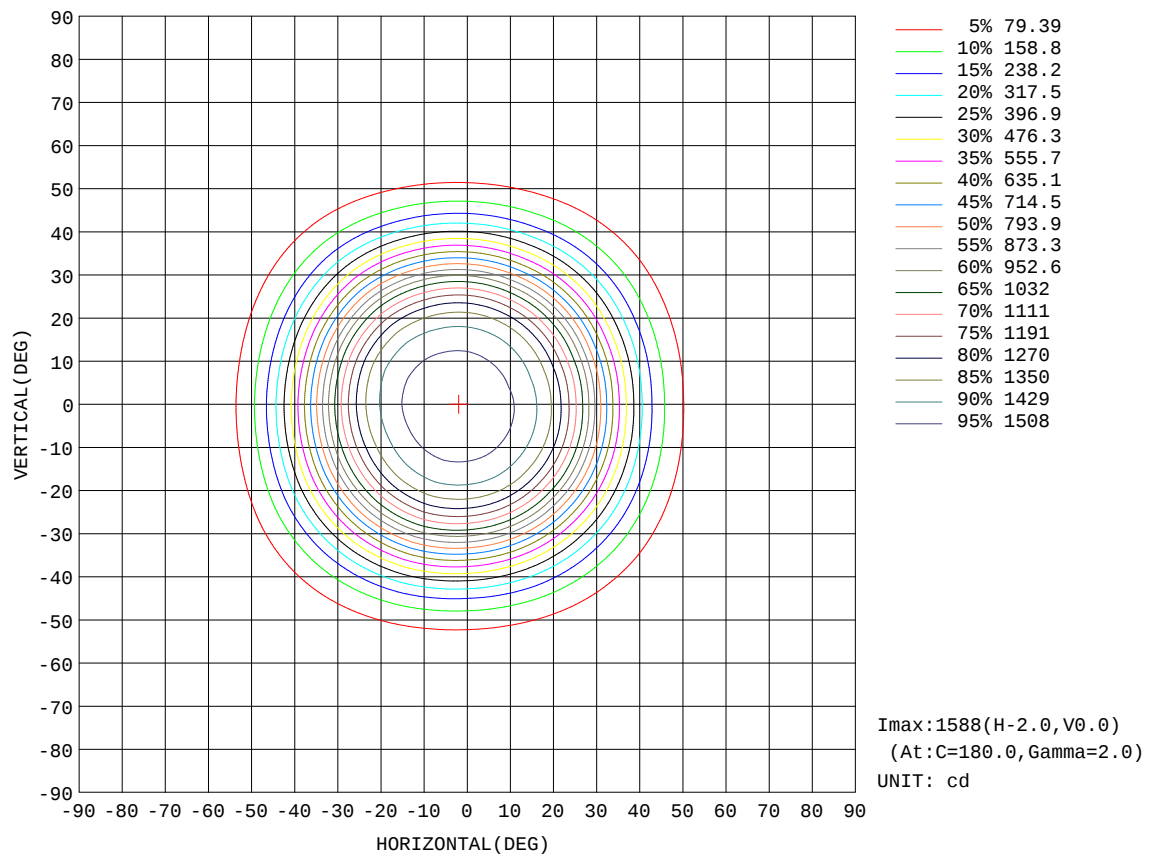
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	83	76	71	82	76	71	82	75	71	67
0.80	91	85	80	90	84	80	89	84	80	76
1.00	97	90	86	96	90	86	94	90	86	81
1.25	101	95	92	100	95	91	98	94	90	86
1.50	104	99	95	103	98	95	101	97	94	89
2.00	107	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	104	109	106	103	106	103	101	95
4.00	113	110	108	111	108	106	107	105	104	96
5.00	114	112	110	112	110	108	108	107	105	97
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:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

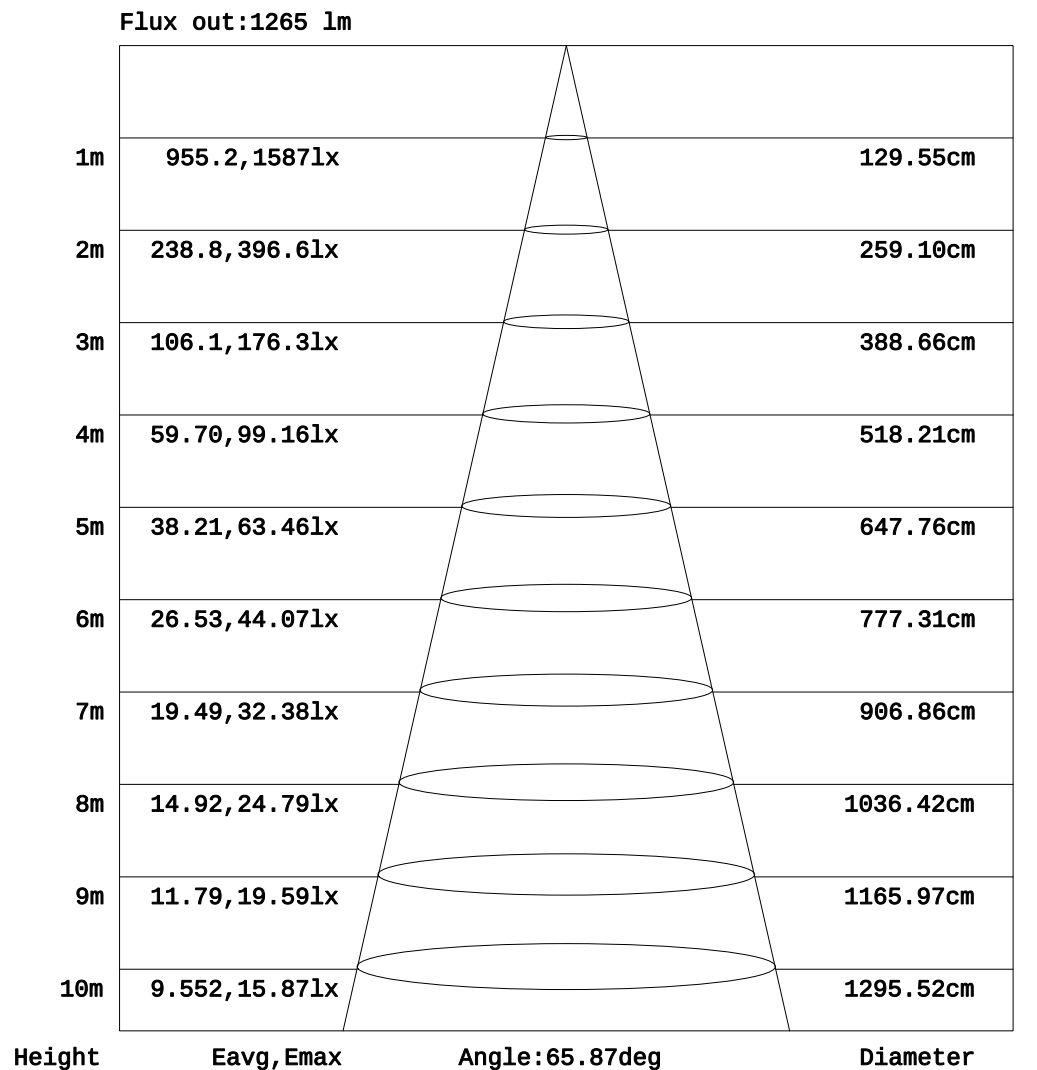


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:



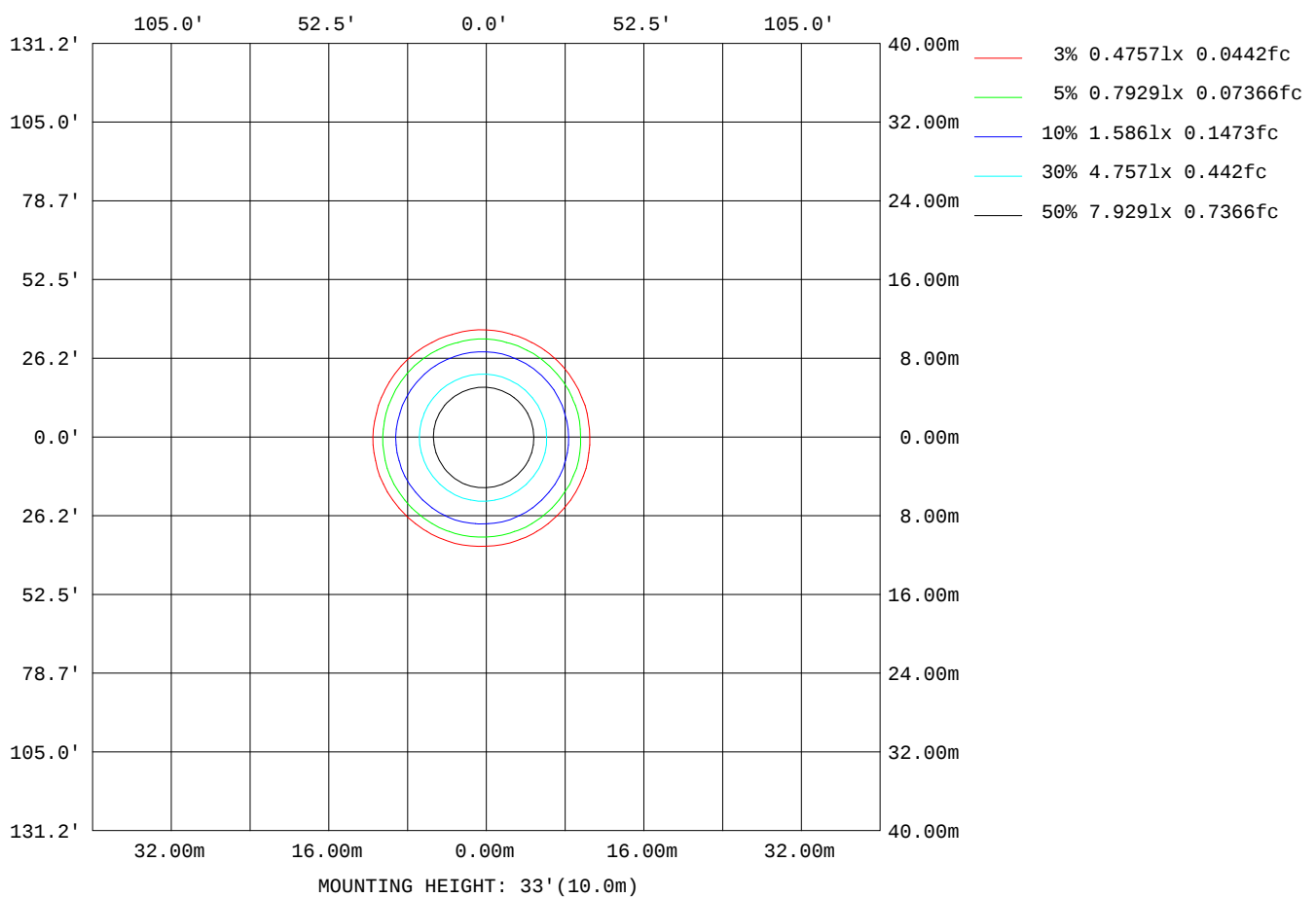
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	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:2023-11-04

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:220.37V I:0.0885A P:17.893W PF:0.9177 Freq:50.01Hz Lamp Flux:1777.03x1 lm		
NAME: BJ21-BKTC20C023P	TYPE:	WEIGHT:
SPEC.: black RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 65mm	Shielding Angle:

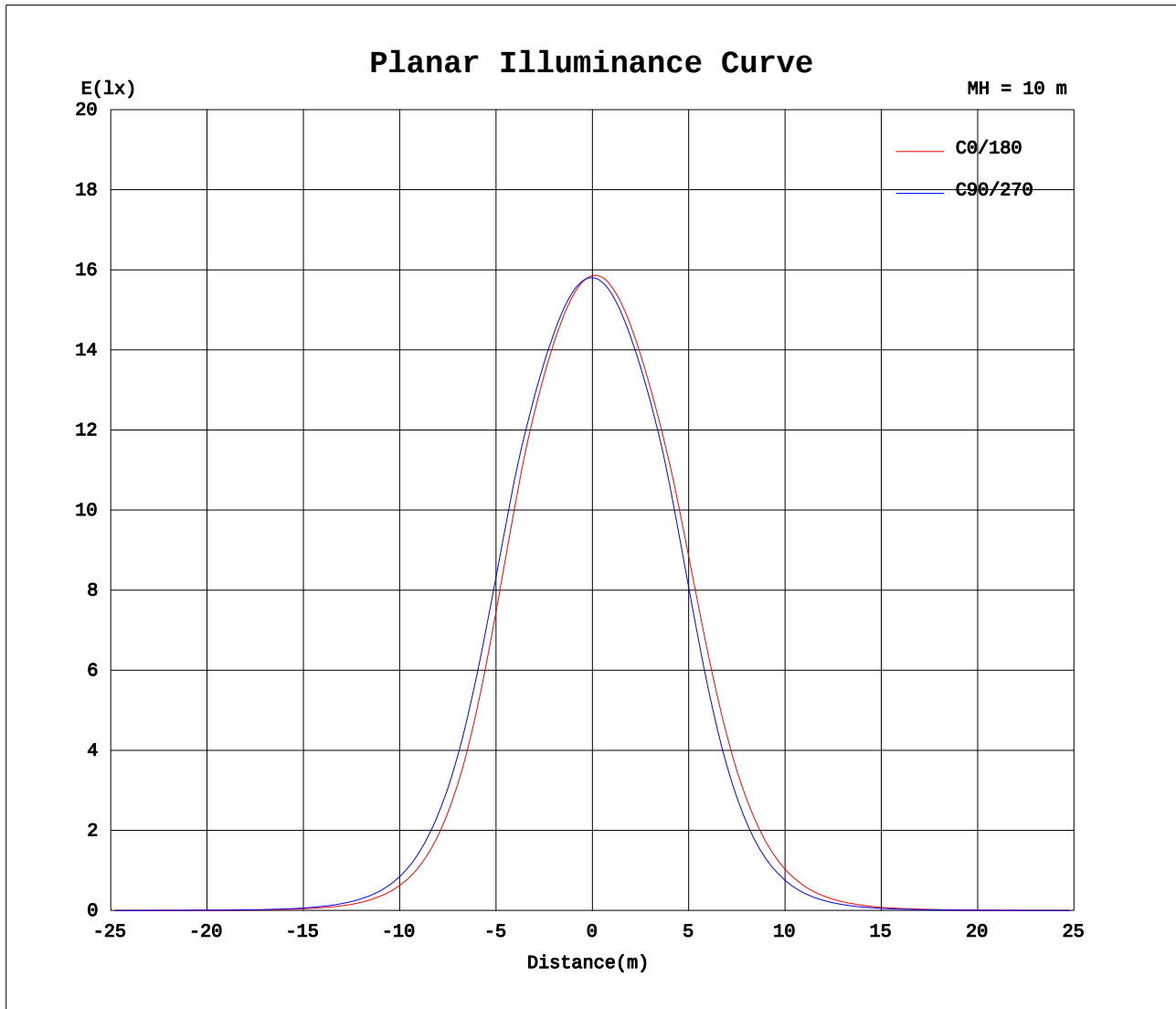
AvgL	cd/m2
L_0~180(65)av	5144
L_0~180(75)av	851
L_0~180(85)av	627
L_90~270(65)av	4871
L_90~270(75)av	843
L_90~270(85)av	640
L_45(65)av	5022
L_45(75)av	844
L_45(85)av	607

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-11-04

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: 2023-11-04

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:

```