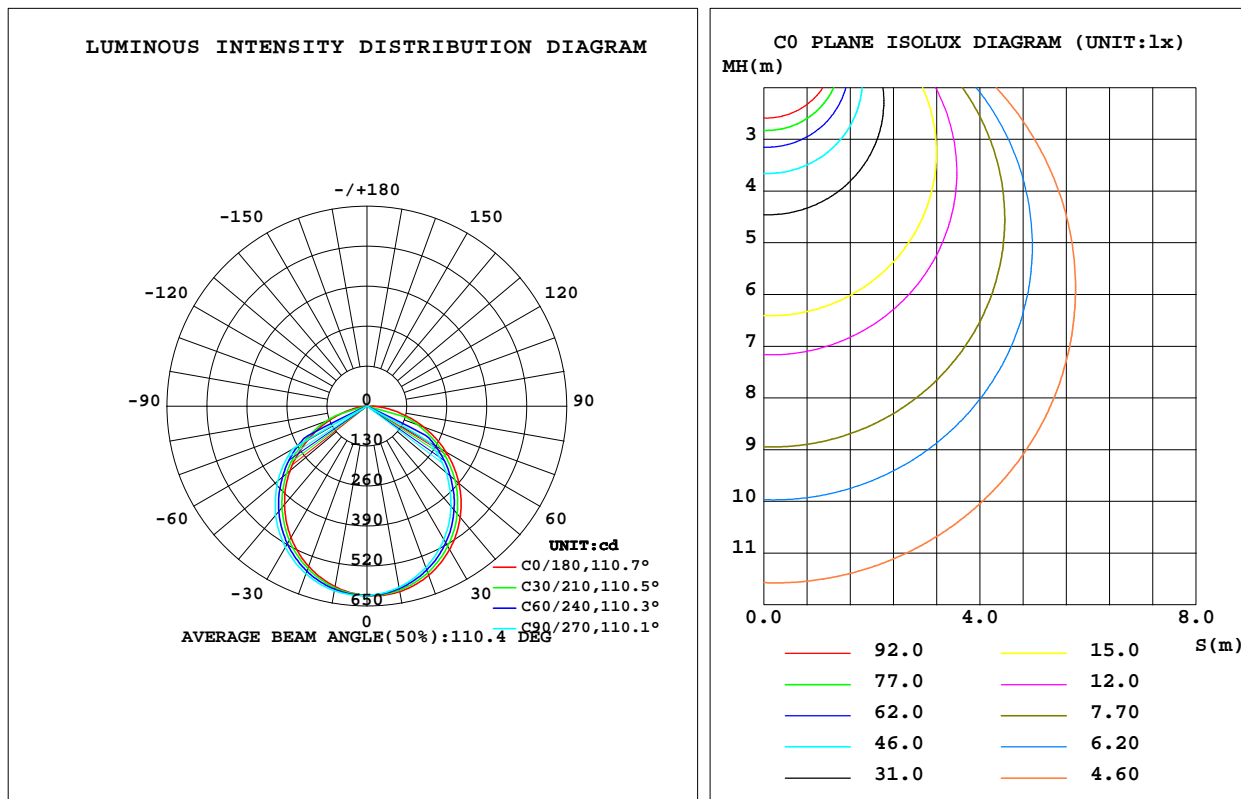


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 54.10 lm/W			
MODEL		I _{max} (cd)	617.4	S/MH(C0/180)	1.30
NOMINAL POWER(W)	28	LOR(%)	100.0	S/MH(C90/270)	1.22
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1550.7	h UP,DN(C0-180)	0.0,48.7
NOMINAL FLUX(lm)	1550.69	CIE CLASS	DIRECT	h UP,DN(C180-360)	0.0,51.3
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	219.1	h down(%)	100.0	CIBSE SHR MAX	1.30



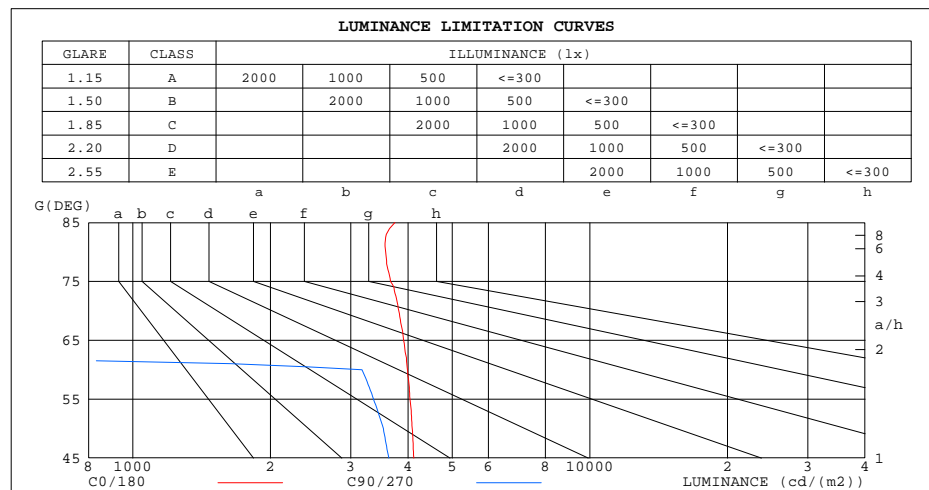
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
5	617.0	613.1	609.6	607.6	608.8	611.7	615.4	617.4	0- 5	14.68	14.68	0.95,0.95
10	612.2	604.8	598.3	594.0	596.1	602.0	609.8	613.2	5- 10	43.51	58.18	3.75,3.75
15	601.5	591.3	580.8	575.6	577.8	587.1	597.7	603.8	10- 15	70.77	129.0	8.32,8.32
20	585.5	572.0	559.0	551.9	554.6	566.9	580.7	588.1	15- 20	95.51	224.5	14.5,14.5
25	564.1	547.9	531.9	522.8	526.5	540.8	557.8	567.4	20- 25	116.9	341.4	22,22
30	537.9	518.9	500.8	490.3	494.1	510.6	530.7	541.8	25- 30	134.2	475.6	30.7,30.7
35	506.9	486.0	464.9	453.7	457.9	476.6	498.5	511.5	30- 35	146.9	622.4	40.1,40.1
40	471.9	449.5	425.7	412.7	417.5	437.5	462.7	477.7	35- 40	154.5	776.9	50.1,50.1
45	433.0	408.2	381.6	369.4	373.9	396.3	420.8	438.7	40- 45	156.8	933.7	60.2,60.2
50	390.4	364.8	337.5	321.7	327.1	350.2	378.8	397.4	45- 50	153.7	1087	70.1,70.1
55	344.5	314.5	286.7	271.9	274.3	301.1	329.8	350.1	50- 55	145.3	1233	79.5,79.5
60	296.5	264.1	235.9	222.5	224.2	252.0	280.7	301.9	55- 60	131.6	1364	88,88
65	245.9	214.3	0	169.0	173.8	198.5	0	250.3	60- 65	92.38	1457	93.9,93.9
70	194.1	0	0	0	123.5	0	0	0	65- 70	50.53	1507	97.2,97.2
75	140.9	0	0	0	76.80	0	0	0	70- 75	27.12	1534	98.9,98.9
80	92.27	0	0	0	35.06	0	0	0	75- 80	12.21	1546	99.7,99.7
85	48.50	0	0	0	2.145	0	0	0	80- 85	3.799	1550	100,100
90	12.23	0	0	0	0.1186	0	0	0	85- 90	0.4730	1551	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	3744	0
80	3575	0
75	3664	0
70	3819	0
65	3916	0
60	3990	3175
55	4041	3364
50	4087	3533
45	4120	3632

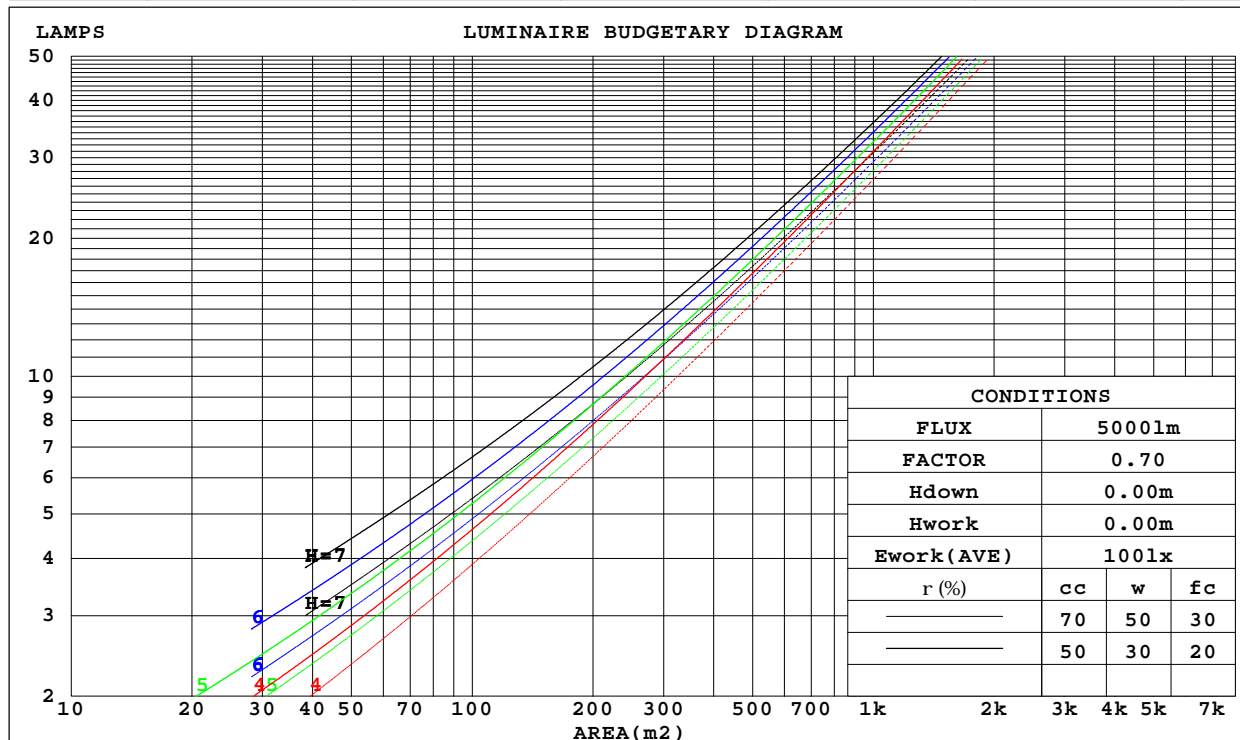
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Wall Exitance Coefficients(WEC)												
0.0																
1.0	.264	.150	.048	.257	.147	.047	.244	.140	.045	.232	.134	.043	.221	.128	.041	
2.0	.258	.142	.043	.252	.139	.043	.241	.134	.042	.230	.129	.040	.221	.125	.039	
3.0	.245	.131	.039	.240	.129	.039	.230	.125	.038	.221	.121	.037	.212	.117	.036	
4.0	.231	.120	.035	.226	.118	.035	.217	.115	.034	.209	.112	.034	.201	.109	.033	
5.0	.216	.110	.032	.212	.109	.032	.204	.106	.031	.197	.104	.031	.190	.101	.030	
6.0	.203	.102	.029	.199	.100	.029	.192	.098	.029	.185	.096	.028	.179	.094	.028	
7.0	.190	.094	.027	.187	.093	.027	.180	.091	.026	.175	.089	.026	.169	.088	.026	
8.0	.179	.087	.025	.176	.086	.024	.170	.085	.024	.165	.083	.024	.160	.082	.024	
9.0	.168	.081	.023	.166	.081	.023	.160	.079	.022	.156	.078	.022	.151	.077	.022	
10.0	.159	.076	.021	.156	.076	.021	.152	.074	.021	.147	.073	.021	.143	.072	.021	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	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	.177	.157	.138	.152	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.168	.132	.102	.144	.114	.088	.098	.079	.062	.057	.046	.036	.018	.015	.012	
3.0	.160	.114	.078	.137	.098	.067	.094	.068	.047	.054	.040	.028	.017	.013	.009	
4.0	.152	.101	.061	.131	.087	.053	.090	.061	.037	.052	.035	.022	.017	.012	.007	
5.0	.145	.090	.049	.125	.078	.043	.086	.054	.030	.050	.032	.018	.016	.010	.006	
6.0	.139	.082	.041	.119	.071	.035	.082	.049	.025	.048	.029	.015	.015	.010	.005	
7.0	.132	.075	.034	.114	.065	.030	.079	.045	.021	.046	.027	.013	.015	.009	.004	
8.0	.126	.069	.030	.108	.060	.026	.075	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.120	.064	.026	.104	.055	.023	.072	.039	.016	.042	.023	.010	.014	.008	.003	
10.0	.115	.060	.023	.099	.052	.020	.069	.036	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

Uncorrected UGR Table

NAME: PP020059-BBK/MH					TYPE:LED			WEIGHT:3.648(Kg)			
DIM.: D455*330					SPEC.:			SERIAL No.:			
MFR.:					SUR.:f435			PROTECTION 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	18.2	19.7	18.5	19.9	20.1	16.7	18.1	16.9	18.3	18.5	
	3H	19.9	21.2	20.2	21.4	21.7	16.5	17.8	16.8	18.0	18.2
	4H	20.6	21.8	20.9	22.1	22.3	16.4	17.6	16.7	17.9	18.1
	6H	21.1	22.3	21.5	22.6	22.8	16.3	17.4	16.6	17.7	18.0
	8H	21.4	22.5	21.7	22.8	23.0	16.2	17.3	16.5	17.6	17.9
	12H	21.5	22.6	21.9	22.9	23.2	16.2	17.2	16.5	17.5	17.8
4H	2H	18.7	19.9	19.0	20.1	20.4	17.3	18.6	17.7	18.8	19.1
	3H	20.5	21.6	20.8	21.8	22.1	17.1	18.2	17.5	18.5	18.8
	4H	21.3	22.3	21.6	22.6	22.9	17.0	18.0	17.4	18.3	18.7
	6H	21.9	22.8	22.3	23.1	23.5	16.9	17.8	17.3	18.2	18.5
	8H	22.2	23.0	22.6	23.3	23.7	16.9	17.7	17.3	18.1	18.4
	12H	22.4	23.1	22.8	23.5	23.9	16.9	17.6	17.3	18.0	18.4
8H	4H	21.1	21.9	21.5	22.3	22.7	17.1	17.9	17.5	18.3	18.7
	6H	21.8	22.5	22.2	22.9	23.3	17.0	17.7	17.5	18.1	18.5
	8H	22.1	22.6	22.5	23.1	23.5	17.0	17.6	17.5	18.0	18.5
	12H	22.3	22.7	22.7	23.2	23.7	17.0	17.5	17.4	17.9	18.4
12H	4H	21.1	21.8	21.5	22.2	22.6	17.1	17.8	17.5	18.2	18.6
	6H	21.8	22.3	22.2	22.8	23.2	17.0	17.6	17.5	18.0	18.5
	8H	22.0	22.5	22.5	23.0	23.4	17.0	17.5	17.5	17.9	18.4
Variations with the observer position at spacings:											
S = 1.0H	+ 0.3 / - 0.4					+ 0.4 / - 0.5					
1.5H	+ 0.3 / - 0.2					+ 1.2 / - 1.9					
2.0H	+ 0.3 / - 0.9					+ 0.7 / - 0.9					

CIE Pub.117 Corrected 1551 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.5)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:

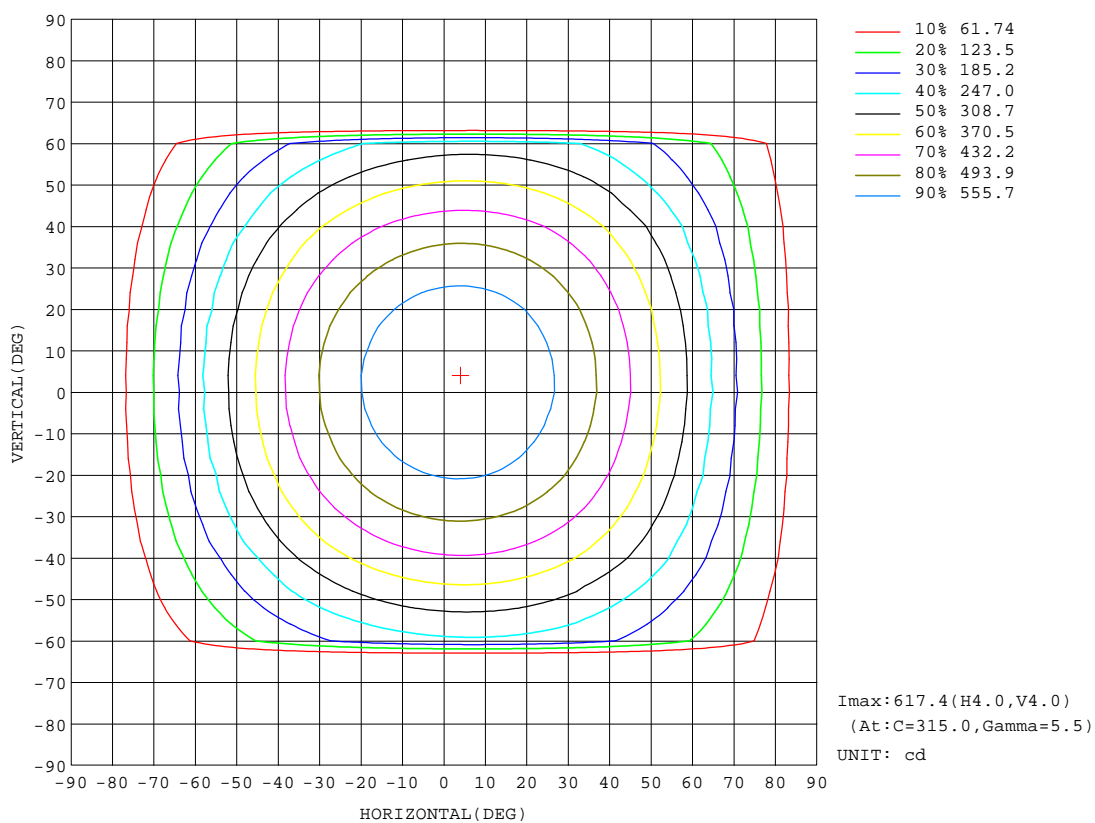
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	60	49	42	59	48	42	58	48	42	35
0.80	71	60	53	70	59	53	68	58	52	46
1.00	80	69	63	78	69	62	76	70	62	55
1.25	87	77	71	85	77	70	83	75	70	63
1.50	92	83	77	90	82	76	87	80	75	68
2.00	98	91	85	97	90	84	93	87	83	76
2.50	102	95	90	100	94	89	96	91	87	79
3.00	105	99	94	103	97	93	99	94	91	83
4.00	108	103	99	106	102	98	102	98	95	87
5.00	110	106	103	108	104	101	104	101	98	89
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:

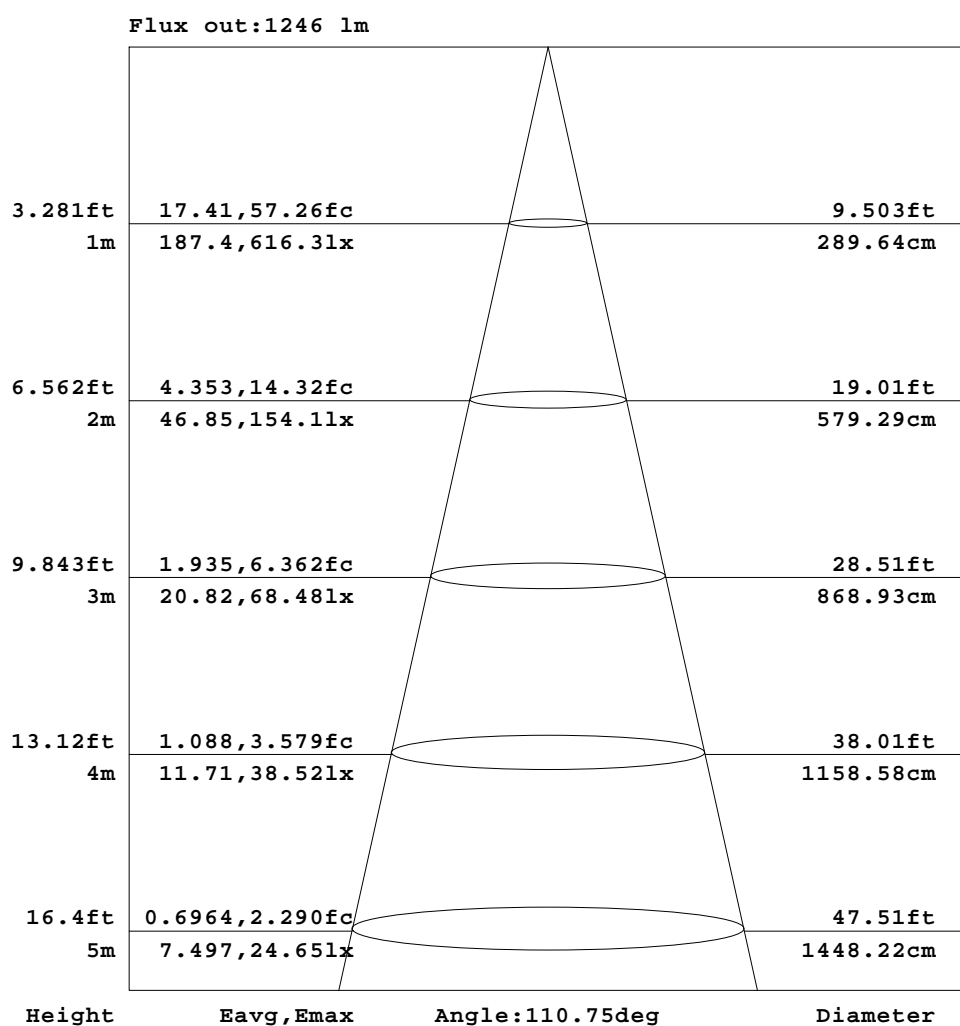


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

AAI Figure

NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:



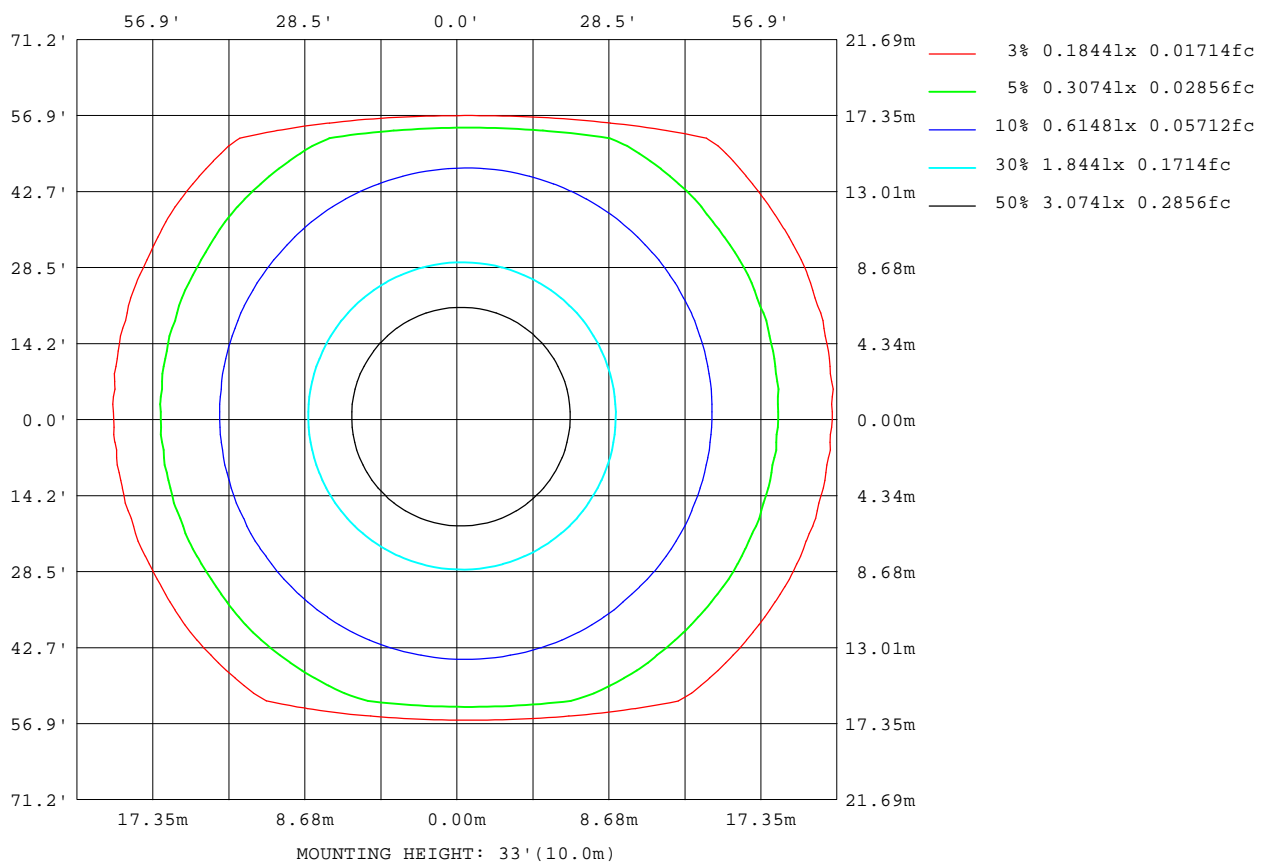
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZENGQG
Test Date:2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

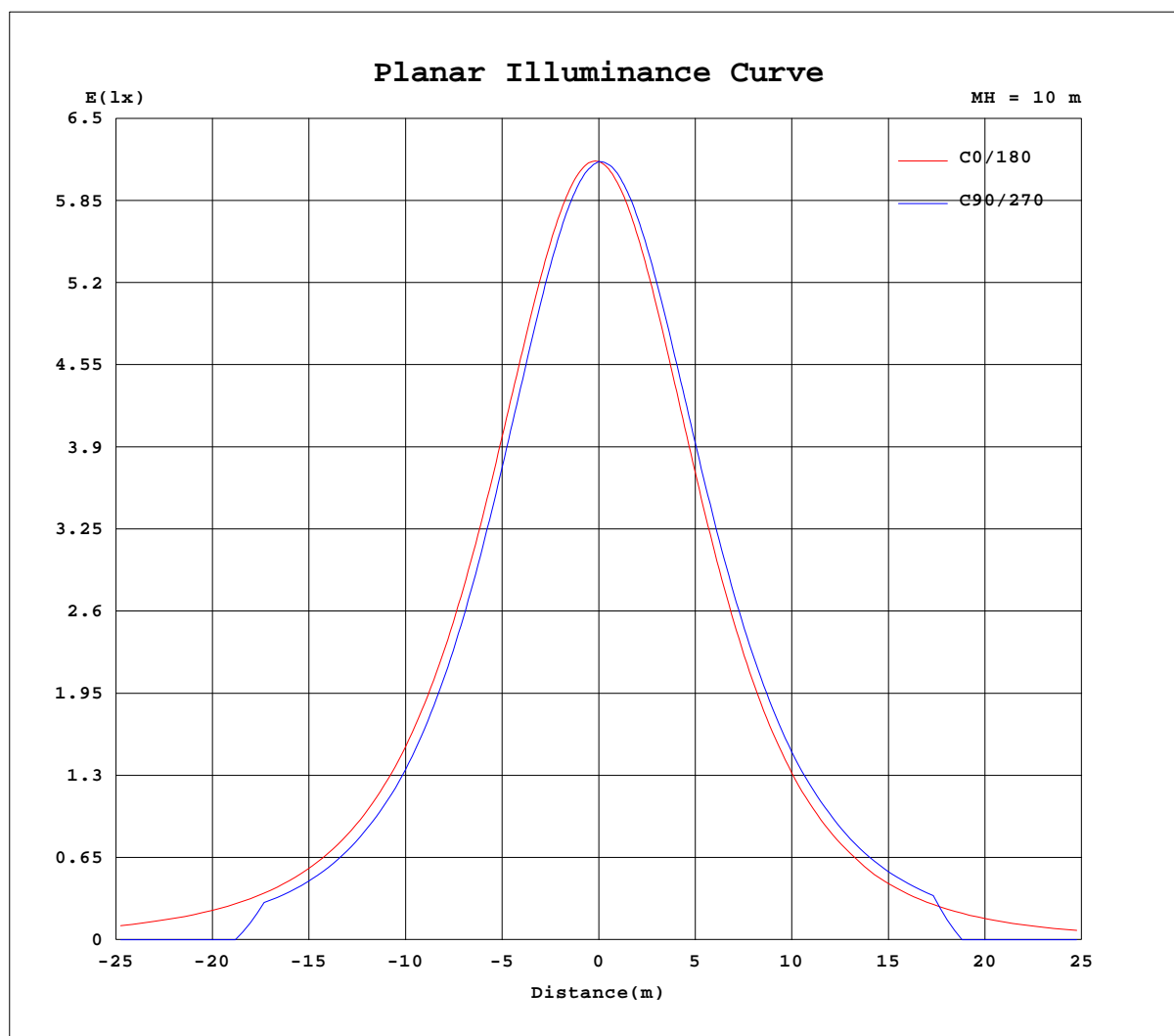
NAME: PP020059-BBK/MH	TYPE:LED	WEIGHT:3.648(Kg)
DIM.: D455*330	SPEC.:	SERIAL No.:
MFR.:	SUR.:f435	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
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g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: ZENGQG
Test Date: 2019-11-11

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity: 65.0%
Test Distance: 9.650m [K=1.0000]
Remarks: