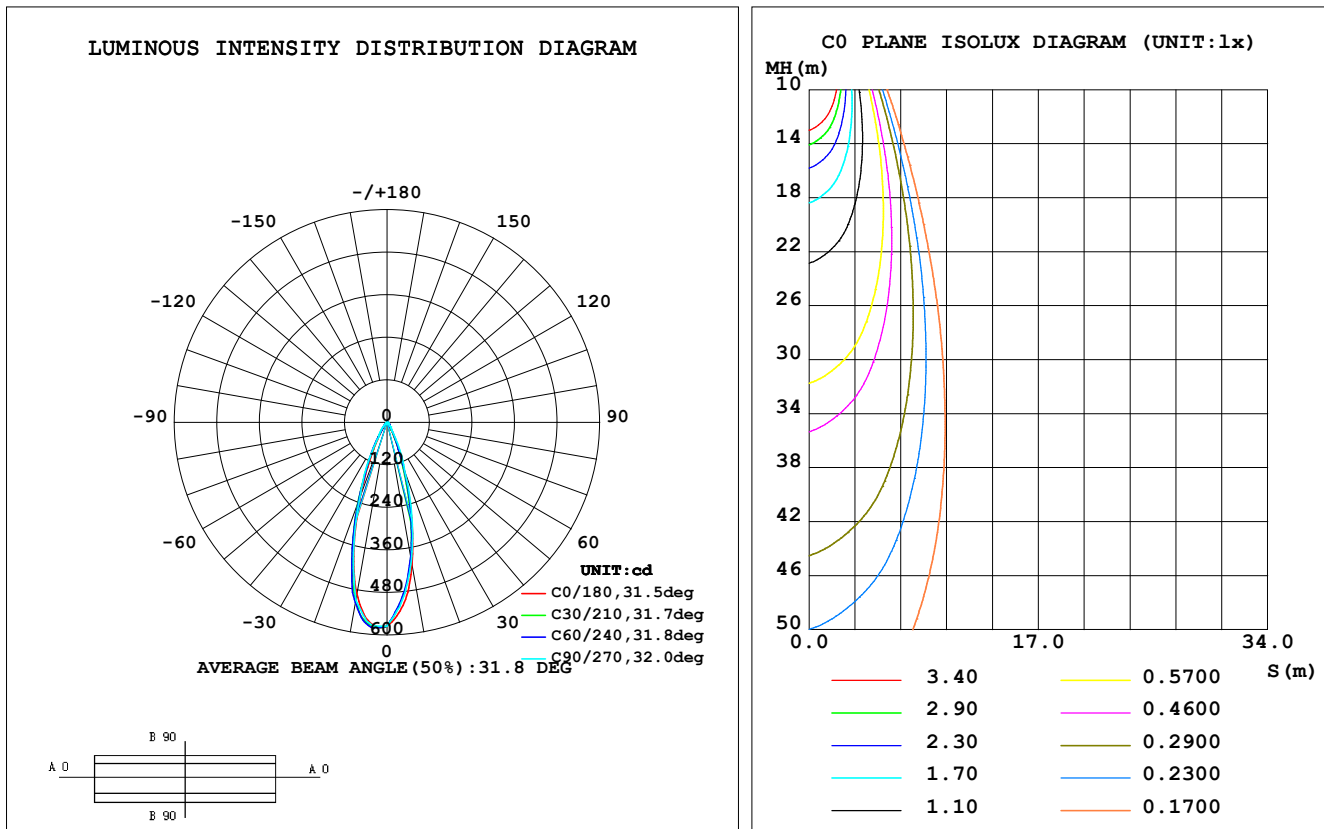


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	LB91610	Imax(cd)	580.2	S/MH(C0/180)	0.56
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	0.58
RATED VOLTAGE(V)	4.0	TOTAL FLUX(lm)	199.73	η UP,DN(C0-180)	0.0,44.3
NOMINAL FLUX(lm)	199.728	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,55.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	4.0	η down(%)	100.0	CIBSE SHR MAX	0.55



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:WLM
Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	518.5	495.4	502.4	528.1	566.2	576.4	569.1	543.9	0- 5	13.20	13.20	6.61,6.61
10	406.6	384.1	396.8	436.7	491.6	515.0	508.6	457.1	5- 10	35.20	48.40	24.2,24.2
15	264.4	249.9	271.2	310.2	360.5	390.7	365.4	315.8	10- 15	44.97	93.38	46.8,46.8
20	141.0	135.3	145.6	182.4	219.0	240.1	222.2	176.1	15- 20	40.15	133.5	66.9,66.9
25	62.68	59.75	87.44	85.21	109.6	123.2	135.2	82.82	20- 25	27.65	161.2	80.7,80.7
30	26.30	26.18	29.32	37.59	48.90	59.70	48.30	38.23	25- 30	16.17	177.4	88.8,88.8
35	11.81	12.56	21.13	17.55	21.91	28.66	34.77	18.31	30- 35	8.239	185.6	92.9,92.9
40	6.786	6.362	12.94	7.930	10.99	13.08	21.24	8.956	35- 40	4.993	190.6	95.4,95.4
45	4.646	4.623	5.456	5.530	6.570	8.566	8.878	6.060	40- 45	3.216	193.8	97,97
50	3.010	3.198	3.598	3.859	4.457	5.426	5.832	3.939	45- 50	2.091	195.9	98.1,98.1
55	1.794	1.941	2.442	2.510	2.649	3.121	3.951	2.324	50- 55	1.477	197.4	98.8,98.8
60	1.074	1.185	1.287	1.519	1.414	1.927	2.071	1.513	55- 60	0.9601	198.3	99.3,99.3
65	0.3970	0.5926	0.7188	0.7304	0.7400	1.091	1.454	0.9355	60- 65	0.5635	198.9	99.6,99.6
70	0.1610	0.2117	0.1502	0.2726	0.1924	0.6348	0.8368	0.6058	65- 70	0.3036	199.2	99.7,99.7
75	0.1181	0.0590	0.1234	0.1396	0.0322	0.5135	0.7242	0.4904	70- 75	0.1600	199.4	99.8,99.8
80	0.0753	0.0429	0.0966	0.1030	0.0322	0.4678	0.6115	0.4324	75- 80	0.1318	199.5	99.9,99.9
85	0.0537	0.0429	0.0697	0.0732	0.0322	0.4249	0.4989	0.3968	80- 85	0.1217	199.6	99.9,99.9
90	0.0322	0.0429	0.0429	0.0429	0.0322	0.3862	0.3862	0.3755	85- 90	0.1151	199.7	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		

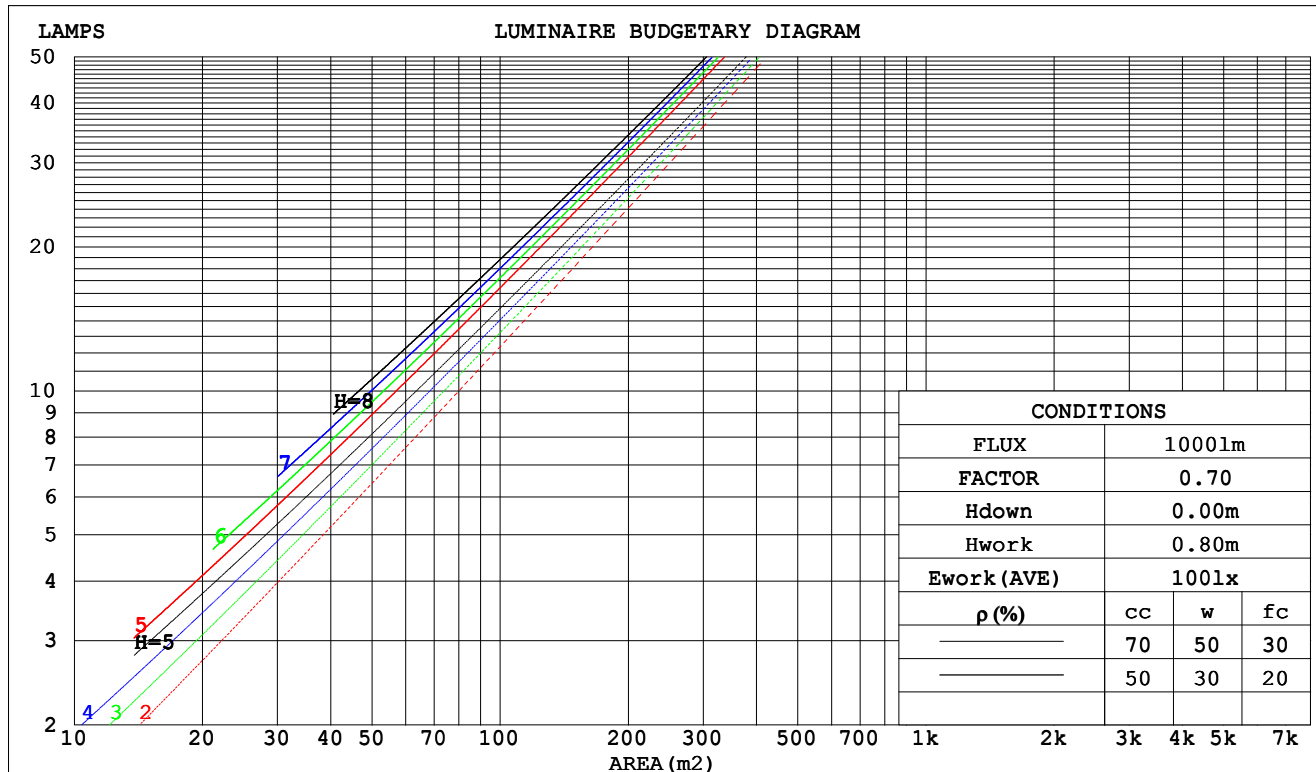
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.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	.94	.90	.87	.92	.89	.86	.91	.87	.85	.89	.86	.84	.83
5.0	.91	.86	.83	.90	.86	.83	.89	.85	.82	.87	.84	.81	.86	.83	.80	.79
6.0	.87	.82	.79	.87	.82	.79	.85	.81	.78	.84	.80	.78	.83	.80	.77	.76
7.0	.84	.79	.75	.83	.78	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.73
8.0	.80	.76	.72	.80	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.71	.70
9.0	.77	.73	.69	.77	.72	.69	.76	.72	.69	.75	.72	.69	.75	.71	.69	.68
10.0	.75	.70	.67	.74	.70	.67	.73	.69	.67	.73	.69	.66	.72	.69	.66	.65



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

WEC AND CCEC

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm								
NAME: LB91610				TYPE:			WEIGHT:	
SPEC.:				DIM.:			SERIAL No.:2019042207	
MFR.: Light Blue USA				SUR.:0.018			PROTECTION ANGLE:	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.154	.087	.028	.147	.084	.027	.135	.077	.025	.123	.071	.023	.113	.065	.021	
2.0	.144	.079	.024	.139	.076	.024	.128	.071	.022	.119	.067	.021	.110	.062	.020	
3.0	.135	.072	.022	.131	.070	.021	.122	.066	.020	.114	.062	.019	.106	.059	.018	
4.0	.128	.066	.019	.124	.065	.019	.116	.062	.018	.109	.059	.018	.103	.056	.017	
5.0	.121	.062	.018	.117	.060	.018	.111	.058	.017	.105	.055	.016	.099	.053	.016	
6.0	.115	.057	.016	.112	.056	.016	.106	.054	.016	.101	.052	.015	.096	.051	.015	
7.0	.109	.054	.015	.107	.053	.015	.102	.051	.015	.097	.050	.014	.093	.048	.014	
8.0	.104	.051	.014	.102	.050	.014	.098	.049	.014	.094	.047	.014	.090	.046	.013	
9.0	.100	.048	.013	.098	.048	.013	.094	.046	.013	.090	.045	.013	.087	.044	.013	
10.0	.096	.046	.013	.094	.045	.013	.090	.044	.012	.087	.043	.012	.084	.042	.012	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.170	.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	.139	.113	.093	.119	.098	.081	.082	.068	.057	.047	.040	.033	.015	.013	.011	
4.0	.127	.098	.076	.109	.085	.066	.075	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.117	.086	.063	.101	.075	.055	.069	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.109	.077	.053	.093	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.006	
7.0	.102	.069	.045	.087	.059	.040	.060	.042	.028	.035	.025	.017	.011	.008	.006	
8.0	.095	.062	.039	.082	.054	.034	.057	.038	.024	.033	.022	.014	.011	.007	.005	
9.0	.090	.057	.034	.077	.049	.030	.054	.034	.021	.031	.020	.013	.010	.007	.004	
10.0	.085	.052	.030	.073	.045	.026	.051	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

UGR(Unified Glare Rating) Table

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm											
NAME: LB91610					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:2019042207			
MFR.: Light Blue USA					SUR.:0.018			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		11.6	12.4	11.8	12.6	12.7	13.4	14.1	13.6	14.3	14.4
	3H	11.5	12.2	11.8	12.4	12.6	13.3	14.0	13.5	14.2	14.4
	4H	11.5	12.1	11.7	12.3	12.5	13.2	13.9	13.5	14.1	14.3
	6H	11.4	12.0	11.7	12.2	12.5	13.1	13.8	13.4	14.0	14.2
	8H	11.3	11.9	11.6	12.2	12.5	13.1	13.7	13.4	14.0	14.2
	12H	11.3	11.9	11.6	12.2	12.4	13.1	13.6	13.4	13.9	14.2
4H	2H	11.6	12.3	11.9	12.5	12.7	13.2	13.9	13.5	14.1	14.3
	3H	11.5	12.1	11.8	12.3	12.6	13.2	13.7	13.5	14.0	14.3
	4H	11.4	11.9	11.8	12.2	12.5	13.1	13.6	13.4	13.9	14.2
	6H	11.3	11.8	11.7	12.1	12.5	13.0	13.5	13.4	13.8	14.1
	8H	11.3	11.7	11.7	12.1	12.4	13.0	13.4	13.3	13.7	14.1
	12H	11.3	11.7	11.7	12.0	12.4	12.9	13.3	13.3	13.7	14.1
8H	4H	11.3	11.7	11.7	12.1	12.4	12.9	13.4	13.3	13.7	14.1
	6H	11.2	11.5	11.6	11.9	12.3	12.8	13.2	13.3	13.6	14.0
	8H	11.1	11.5	11.6	11.9	12.3	12.8	13.1	13.2	13.5	14.0
	12H	11.1	11.4	11.6	11.8	12.3	12.8	13.0	13.2	13.5	13.9
12H	4H	11.2	11.6	11.6	12.0	12.4	12.9	13.3	13.3	13.6	14.0
	6H	11.1	11.4	11.6	11.9	12.3	12.8	13.1	13.2	13.5	14.0
	8H	11.1	11.4	11.6	11.8	12.3	12.7	13.0	13.2	13.5	13.9
Variations with the observer position at spacings:											
S = 1.0H		+ 2.1 / - 3.4					+ 3.5 / - 4.1				
1.5H		+ 2.5 / - 1.8					+ 5.1 / - 2.6				
2.0H		+ 3.4 / - 5.1					+ 3.3 / - 4.1				

CIE Pub.117 Corrected 199.7 lm Total Lamp Luminous Flux. (8log(F/F0) = -5.6)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

UTILIZATION FACTORS TABLE

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:

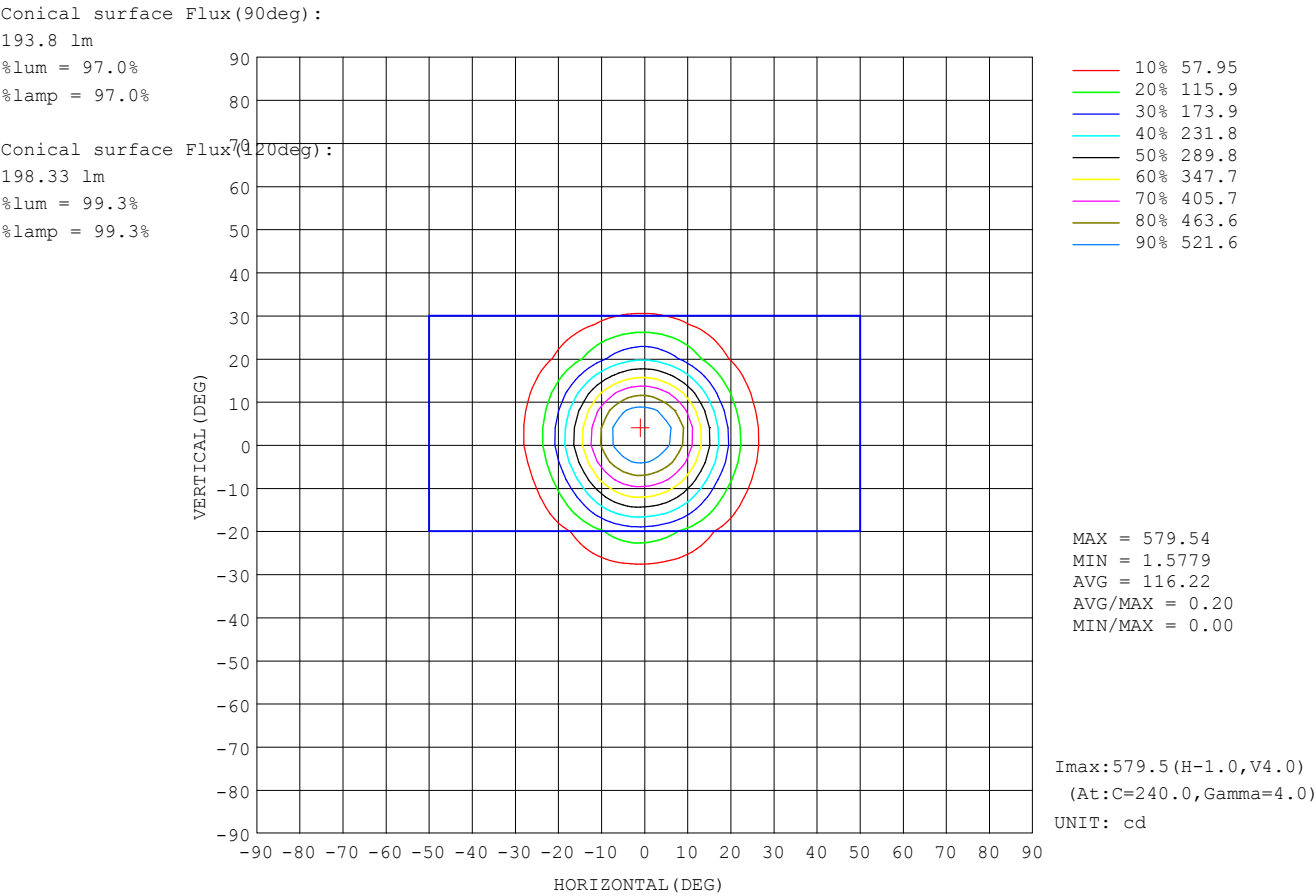
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	79	88	82	79	87	82	79	75
0.80	96	90	87	95	90	87	94	89	86	83
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	95
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: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

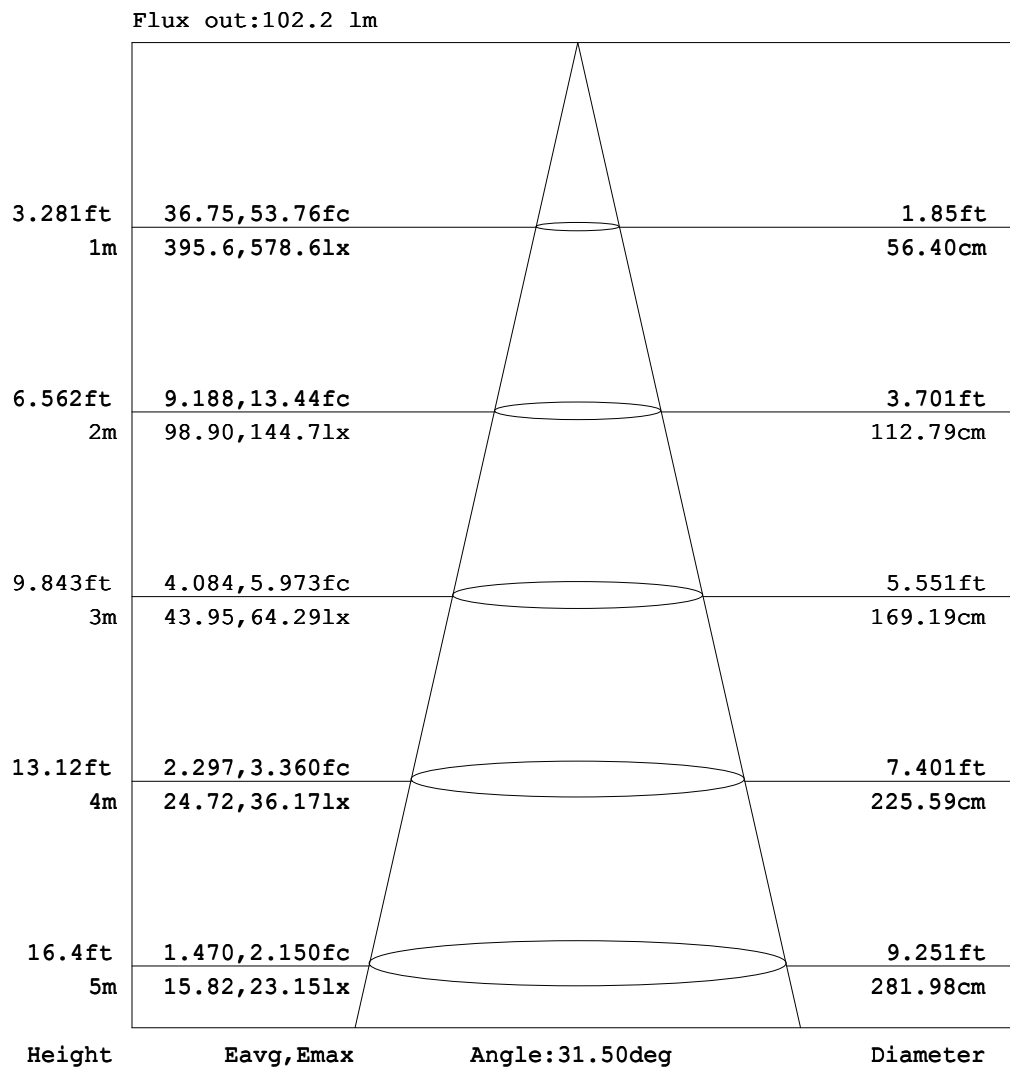
ISOCANDELA DIAGRAM

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:



AAI Figure

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:



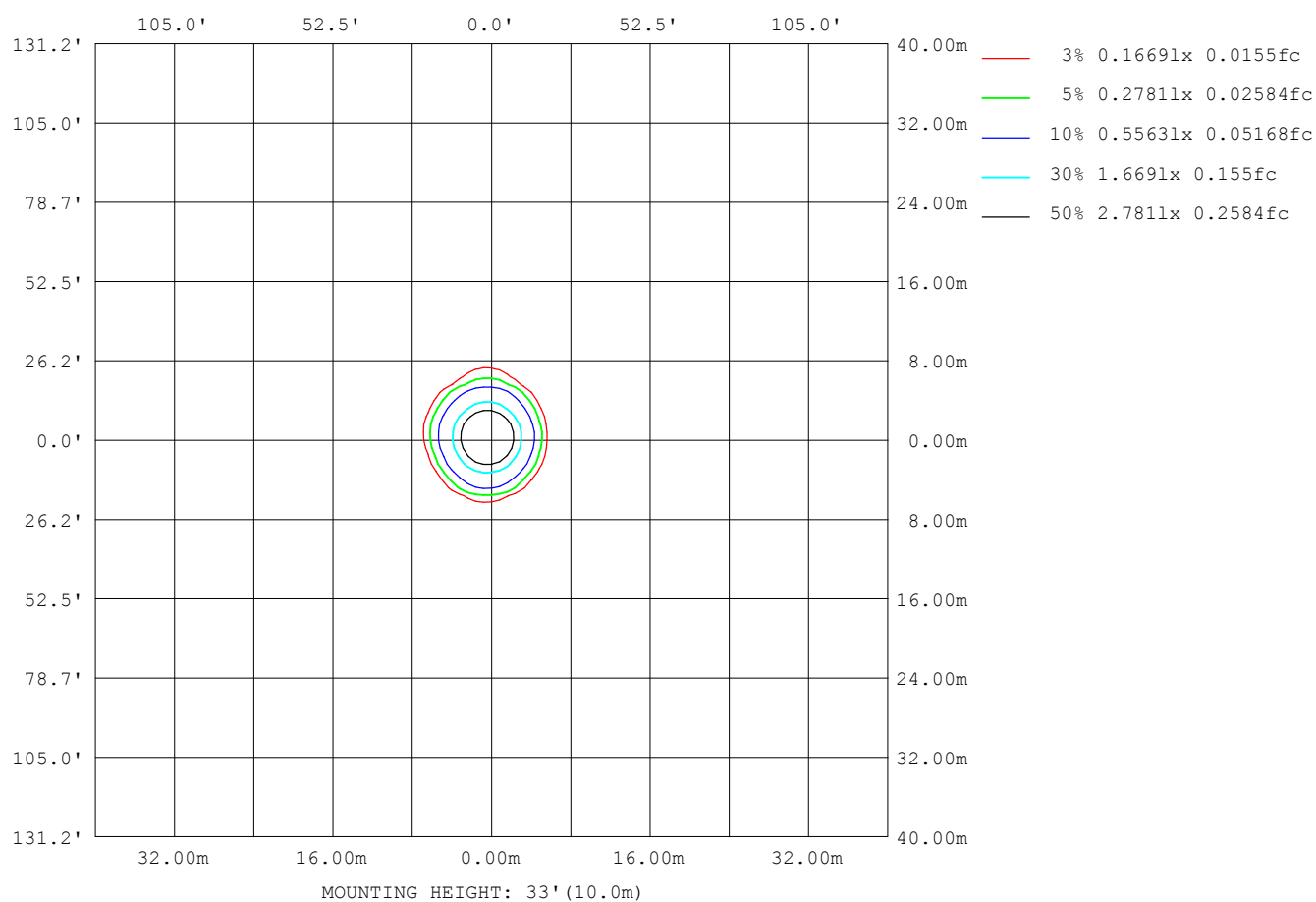
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:WLM
Test Date:2019-04-22

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

ISOLUX DIAGRAM

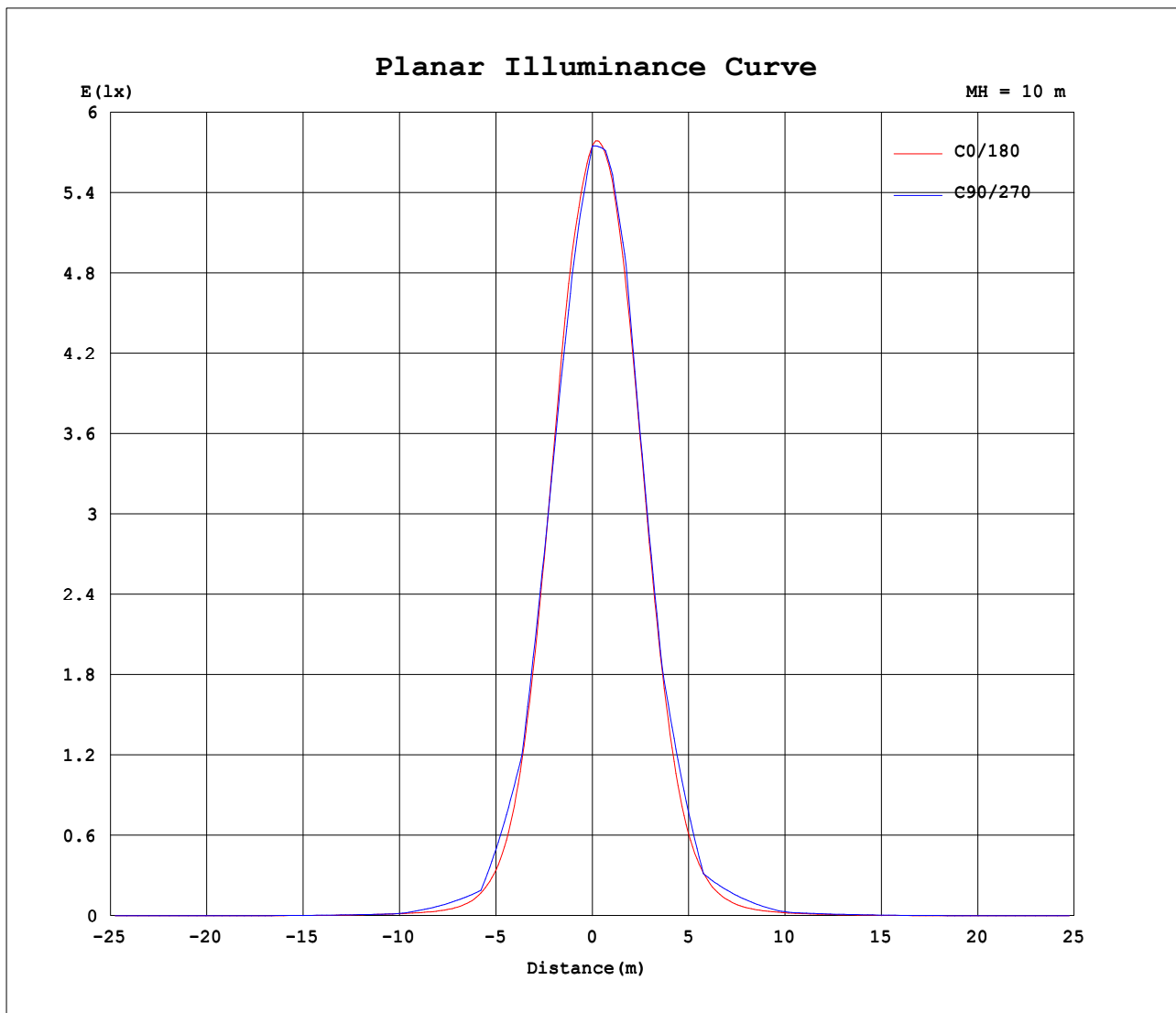
Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:WLM
 Test Date:2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
 Humidity:65.0%
 Test Distance:13.669m [K=1.0000]
 Remarks: 1# DC(4.0V 985mA)

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: WLM
Test Date: 2019-04-22

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity: 65.0%
Test Distance: 13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

```

Test:U:0V I:0A P:0W PF:0 Lamp Flux:199.728x1 lm		
NAME: LB91610	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2019042207
MFR.: Light Blue USA	SUR.:0.018	PROTECTION ANGLE:

[illegible]

```
C Range: 0 - 360DEG      γ Range: 0 - 90DEG
C Interval: 5.0DEG      γ Interval: 0.5DEG
Test Speed: HIGH        Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Temperature: 25.3DEG    Humidity: 65.0%
Operators: WLM           Test Distance: 13.669m [K=1.0000]
Test Date: 2019-04-22   Remarks: 1# DC(4.0V 985mA)
```

```
C Range: 0 - 360DEG      γ Range: 0 - 90DEG
C Interval: 5.0DEG      γ Interval: 0.5DEG
Test Speed: HIGH        Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Temperature: 25.3DEG    Humidity: 65.0%
Operators: WLM          Test Distance: 13.669m [K=1.0000]
Test Date: 2019-04-22   Remarks: 1# DC(4.0V 985mA)
```

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

```

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.669m [K=1.0000]
Remarks: 1# DC(4.0V 985mA)

```