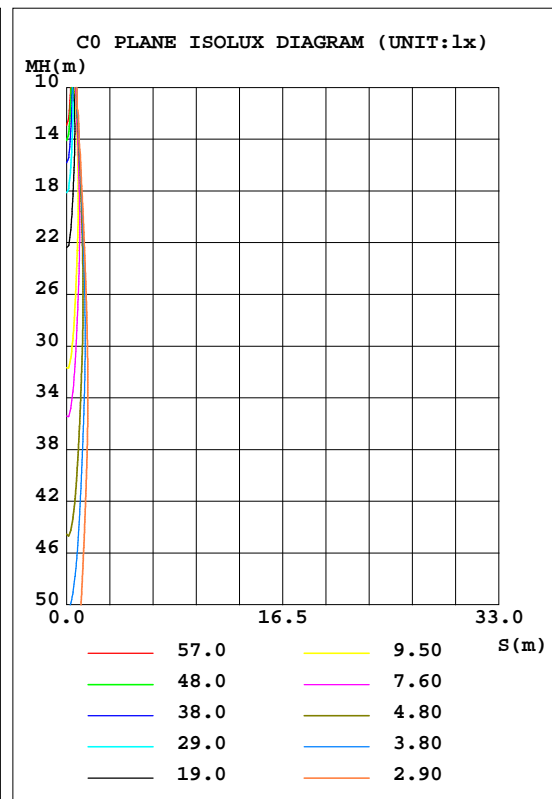
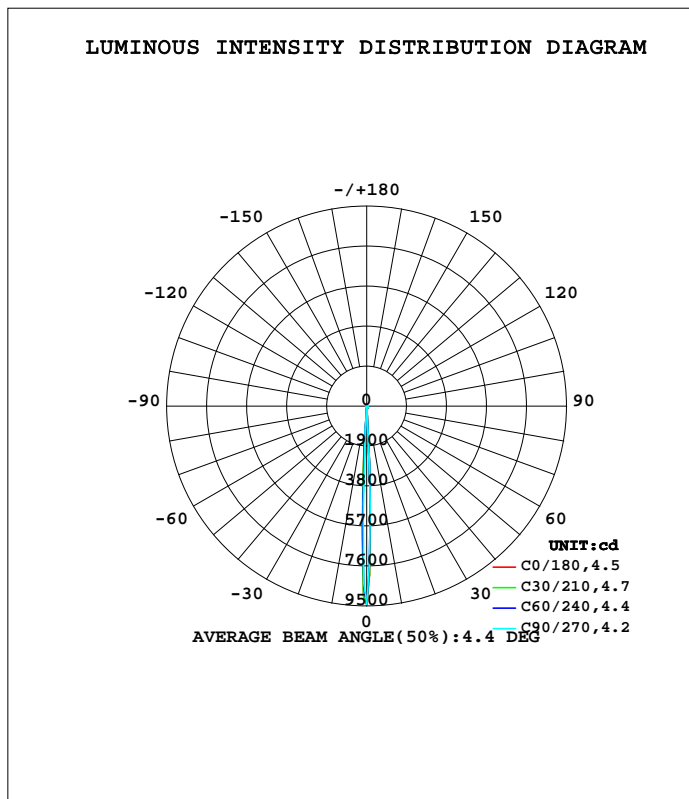


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 107.15 lm/W			
MODEL	KL6M	I <sub>max</sub> (cd)	9417	S/MH(C0/180)	0.09
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	0.07
RATED VOLTAGE(V)		TOTAL FLUX(lm)	177.88	η UP, DN(C0-180)	0.0,48.0
NOMINAL FLUX(lm)	177.875	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,52.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	76.03	74.85	74.89	72.32	72.80	74.05	76.87	74.24	0- 10	73.25	73.25	41.2,41.2
20	60.48	60.36	61.73	60.41	61.72	61.74	62.65	62.72	10- 20	19.16	92.41	52,52
30	56.13	54.83	57.16	56.47	56.23	54.87	58.65	57.30	20- 30	27.04	119.5	67.2,67.2
40	43.26	42.96	43.76	43.86	45.76	45.13	48.70	46.07	30- 40	31.51	151.0	84.9,84.9
50	2.403	2.058	2.053	1.871	2.109	2.419	2.668	2.618	40- 50	24.10	175.1	98.4,98.4
60	1.052	0.9523	1.004	0.9038	0.9799	1.080	1.012	1.067	50- 60	1.279	176.3	99.1,99.1
70	0.6387	0.5804	0.6445	0.5239	0.5664	0.6807	0.5800	0.6783	60- 70	0.7919	177.1	99.6,99.6
80	0.7008	0.5797	0.4965	0.6236	0.6383	0.5703	1.010	0.9301	70- 80	0.5577	177.7	99.9,99.9
90	0	0	0	0	0	0	0.0184	0	80- 90	0.1893	177.9	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		

Conical surface Flux(90deg): 167.43 lm

%lum = 94.1%  
%lamp = 94.1%

Conical surface Flux(120deg): 176.34 lm

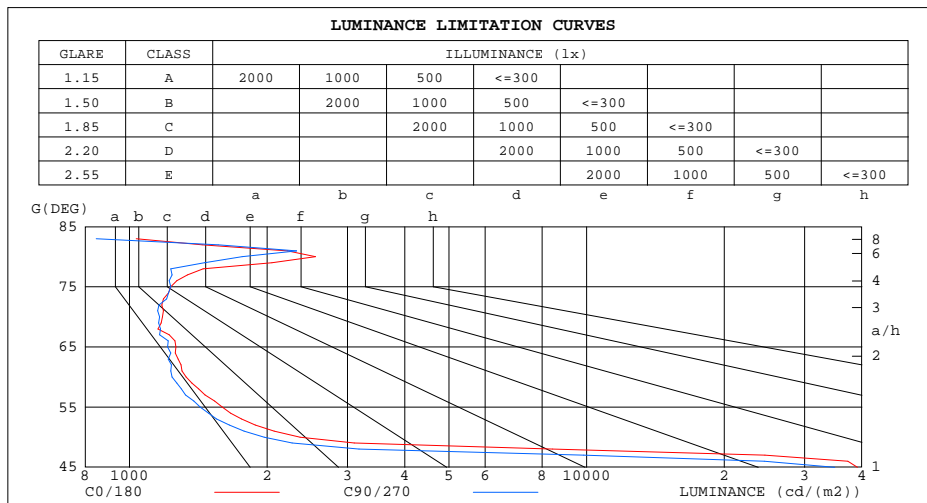
%lum = 99.1%  
%lamp = 99.1%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:18DEG  
Operators:HUA  
Test Date:2018-12-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
Humidity:40%  
Test Distance:12.280m [K=1.0000]  
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	392	262
80	2552	1765
75	1231	1231
70	1181	1163
65	1264	1211
60	1331	1240
55	1596	1427
50	2364	1973
45	39129	34900

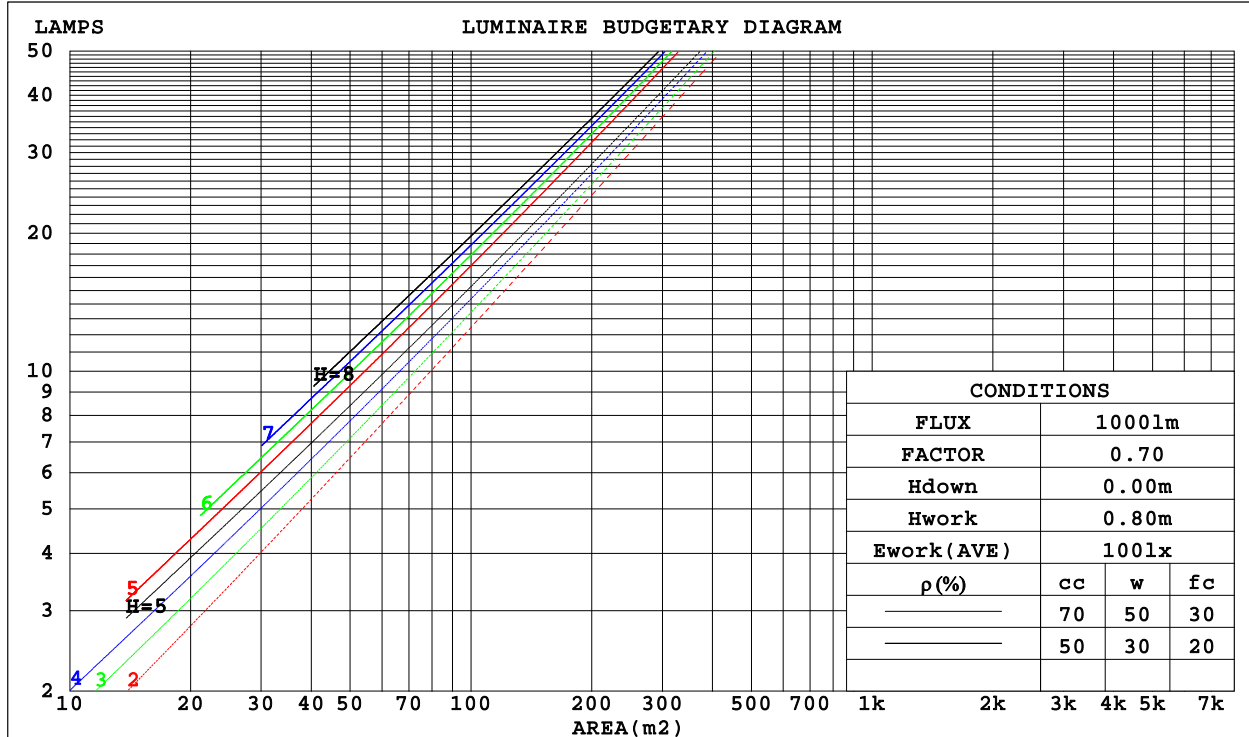
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.00
1.0	1.12	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.97	.95	.97	.95	.93	.94	.92	.91	.89
3.0	.99	.94	.91	.97	.93	.90	.95	.91	.88	.92	.89	.87	.90	.88	.86	.84
4.0	.93	.88	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.89	.83	.80	.88	.83	.79	.86	.82	.79	.84	.81	.78	.83	.80	.77	.76
6.0	.84	.79	.75	.84	.79	.75	.82	.78	.75	.81	.77	.74	.80	.76	.74	.72
7.0	.81	.75	.72	.80	.75	.72	.79	.74	.71	.78	.74	.71	.77	.73	.71	.69
8.0	.77	.72	.69	.77	.72	.69	.76	.71	.68	.75	.71	.68	.74	.70	.68	.67
9.0	.74	.69	.66	.74	.69	.66	.73	.69	.66	.72	.68	.66	.72	.68	.65	.64
10.0	.72	.67	.64	.71	.67	.64	.71	.66	.63	.70	.66	.63	.69	.66	.63	.62



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding 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	.163	.093	.029	.156	.089	.028	.144	.082	.026	.132	.076	.024	.122	.070	.023	
2.0	.155	.085	.026	.149	.082	.025	.139	.077	.024	.129	.073	.023	.120	.068	.021	
3.0	.147	.078	.023	.142	.076	.023	.133	.072	.022	.125	.068	.021	.117	.065	.020	
4.0	.138	.072	.021	.134	.070	.021	.127	.067	.020	.120	.064	.019	.113	.062	.019	
5.0	.131	.067	.019	.127	.065	.019	.121	.063	.019	.115	.061	.018	.109	.058	.018	
6.0	.124	.062	.018	.121	.061	.018	.115	.059	.017	.110	.057	.017	.105	.055	.016	
7.0	.117	.058	.016	.115	.057	.016	.110	.055	.016	.105	.054	.016	.101	.052	.015	
8.0	.111	.054	.015	.109	.054	.015	.105	.052	.015	.100	.051	.015	.097	.050	.014	
9.0	.106	.051	.014	.104	.051	.014	.100	.049	.014	.096	.048	.014	.093	.047	.014	
10.0	.101	.048	.013	.099	.048	.013	.095	.047	.013	.092	.046	.013	.089	.045	.013	

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	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.040	.017	.015	.013	
3.0	.141	.113	.092	.121	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.130	.099	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.096	.067	.045	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.105	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.098	.063	.038	.085	.054	.033	.059	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.026	.052	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:

## UGR(Unified Glare Rating) Table

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm										
NAME:					TYPE:LED			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:BLD20181218P03		
MFR.: BRANDO TECHNOLOGY CO.,LTD					SUR.:3.14*0.023*0.023			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	18.1	19.0	18.4	19.1	19.3	18.3	19.1	18.5	19.3	19.4
3H	18.0	18.8	18.2	19.0	19.2	18.1	18.9	18.4	19.1	19.3
4H	17.9	18.7	18.2	18.9	19.1	18.1	18.8	18.3	19.0	19.2
6H	17.9	18.6	18.2	18.8	19.1	18.0	18.7	18.3	18.9	19.2
8H	17.9	18.5	18.2	18.8	19.0	18.0	18.6	18.3	18.9	19.1
12H	17.8	18.4	18.1	18.7	19.0	17.9	18.6	18.2	18.8	19.1
4H 2H	17.9	18.6	18.2	18.8	19.1	18.0	18.8	18.3	19.0	19.2
3H	17.8	18.4	18.1	18.7	18.9	17.9	18.5	18.2	18.8	19.1
4H	17.7	18.3	18.0	18.6	18.9	17.8	18.4	18.2	18.7	19.0
6H	17.7	18.2	18.0	18.5	18.9	17.8	18.3	18.2	18.6	19.0
8H	17.7	18.1	18.0	18.5	18.8	17.8	18.2	18.2	18.6	18.9
12H	17.6	18.0	18.0	18.4	18.8	17.7	18.1	18.1	18.5	18.9
8H 4H	17.5	18.0	17.9	18.4	18.7	17.7	18.1	18.1	18.5	18.9
6H	17.6	18.0	18.0	18.4	18.8	17.7	18.1	18.1	18.5	18.9
8H	17.6	17.9	18.0	18.3	18.8	17.7	18.0	18.1	18.4	18.9
12H	17.5	17.8	18.0	18.2	18.7	17.6	17.9	18.1	18.3	18.8
12H 4H	17.5	17.9	17.9	18.3	18.7	17.6	18.1	18.0	18.4	18.8
6H	17.5	17.9	18.0	18.3	18.7	17.6	18.0	18.1	18.4	18.8
8H	17.5	17.8	18.0	18.3	18.7	17.6	17.9	18.1	18.4	18.8
Variations with the observer position at spacings:										
S = 1.0H	+ 3.4 / - 8.8					+ 3.5 / - 9.2				
1.5H	+ 3.8 / -10.7					+ 3.7 / -10.3				
2.0H	+ 8.0 / - 8.7					+ 8.4 / - 7.7				

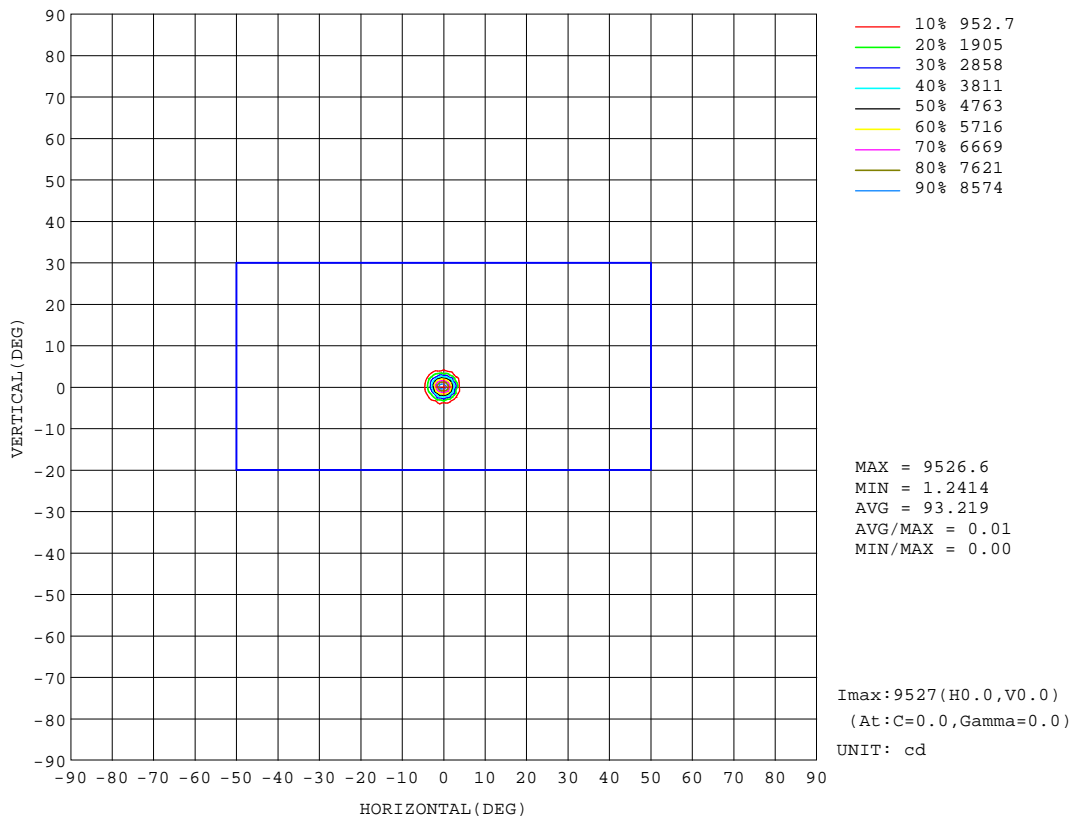
CIE Pub.117 Corrected 177.9 lm Total Lamp Luminous Flux.(8log(F/F0) = -6.0)

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:18DEG  
Operators:HUA  
Test Date:2018-12-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
Humidity:40%  
Test Distance:12.280m [K=1.0000]  
Remarks:

ISOCANDELA DIAGRAM

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:



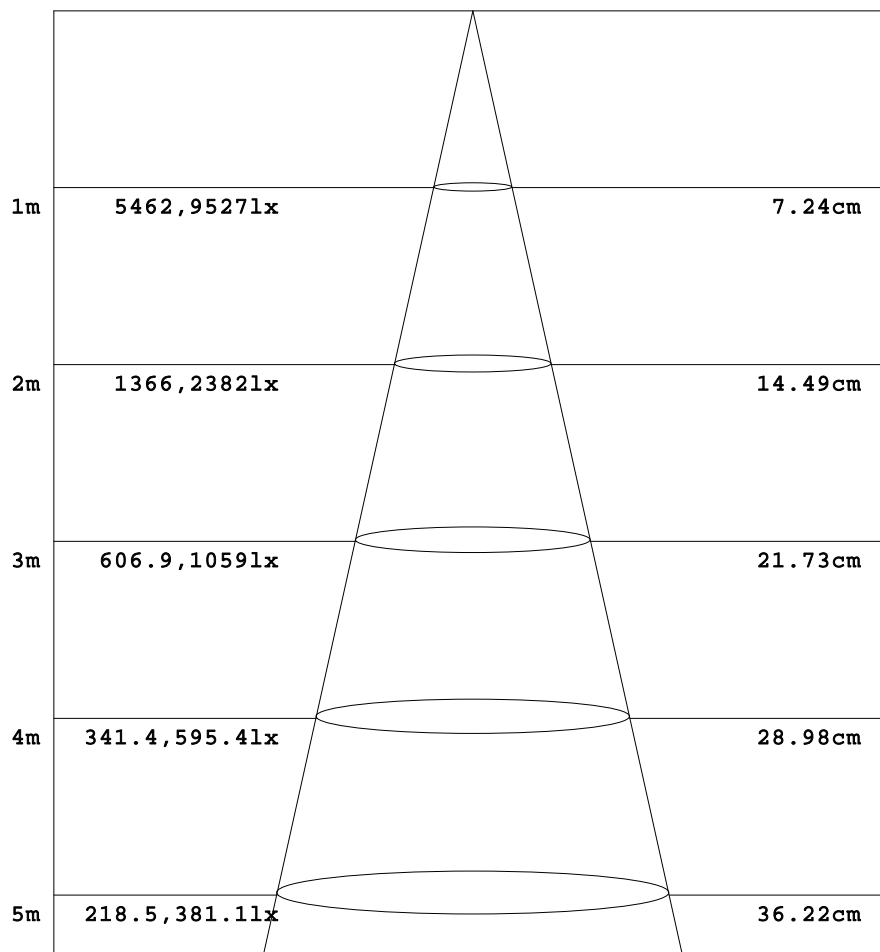
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 18DEG  
 Operators: HUA  
 Test Date: 2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity: 40%  
 Test Distance: 12.280m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:

Flux out:47.13 lm



Height                      Eavg, Emax                      Angle:4.15deg                      Diameter

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

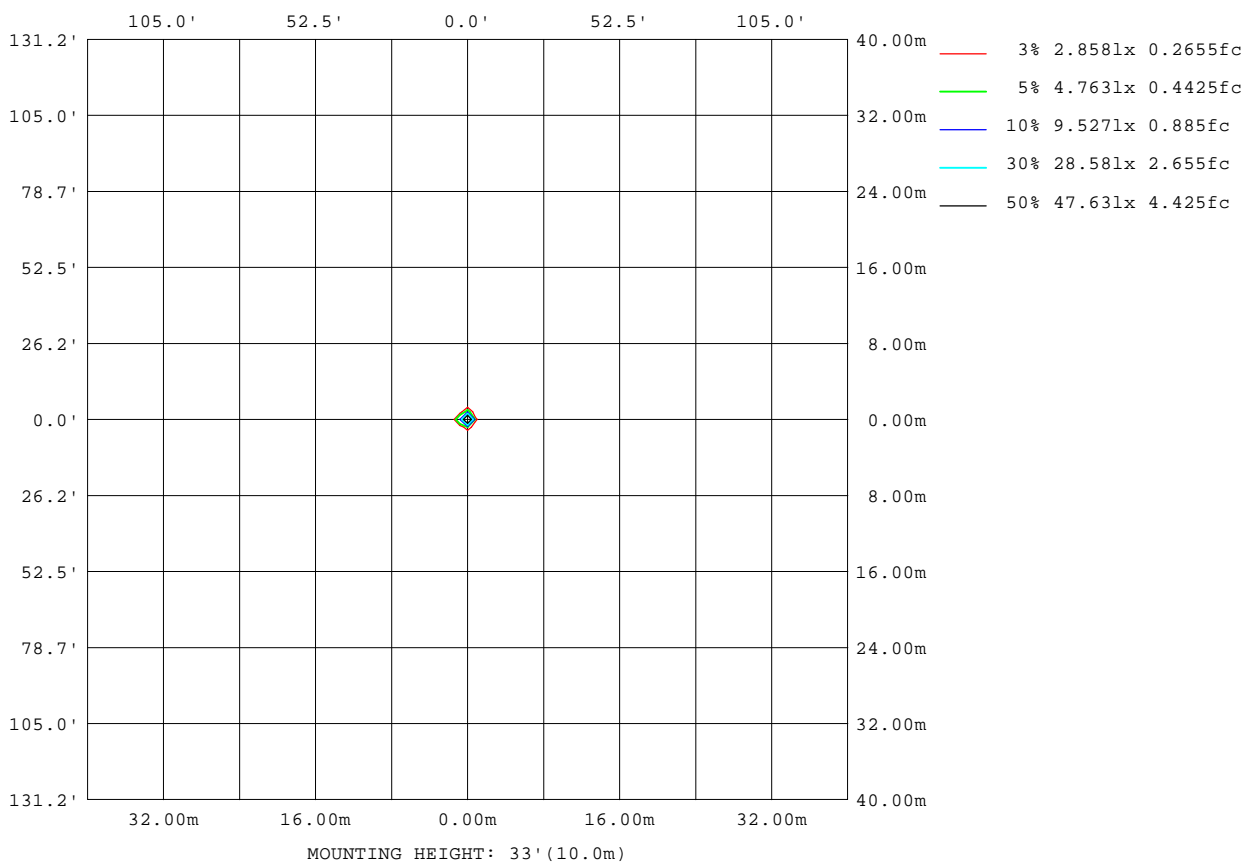
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:



ISOLUX DIAGRAM

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:18DEG  
 Operators:HUA  
 Test Date:2018-12-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity:40%  
 Test Distance:12.280m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:3.296V I:0.5035A P:1.660W PF:1.000 Lamp Flux:177.875x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:BLD20181218P03
MFR.: BRANDO TECHNOLOGY CO.,LTD	SUR.:3.14*0.023*0.023	Shielding Angle:

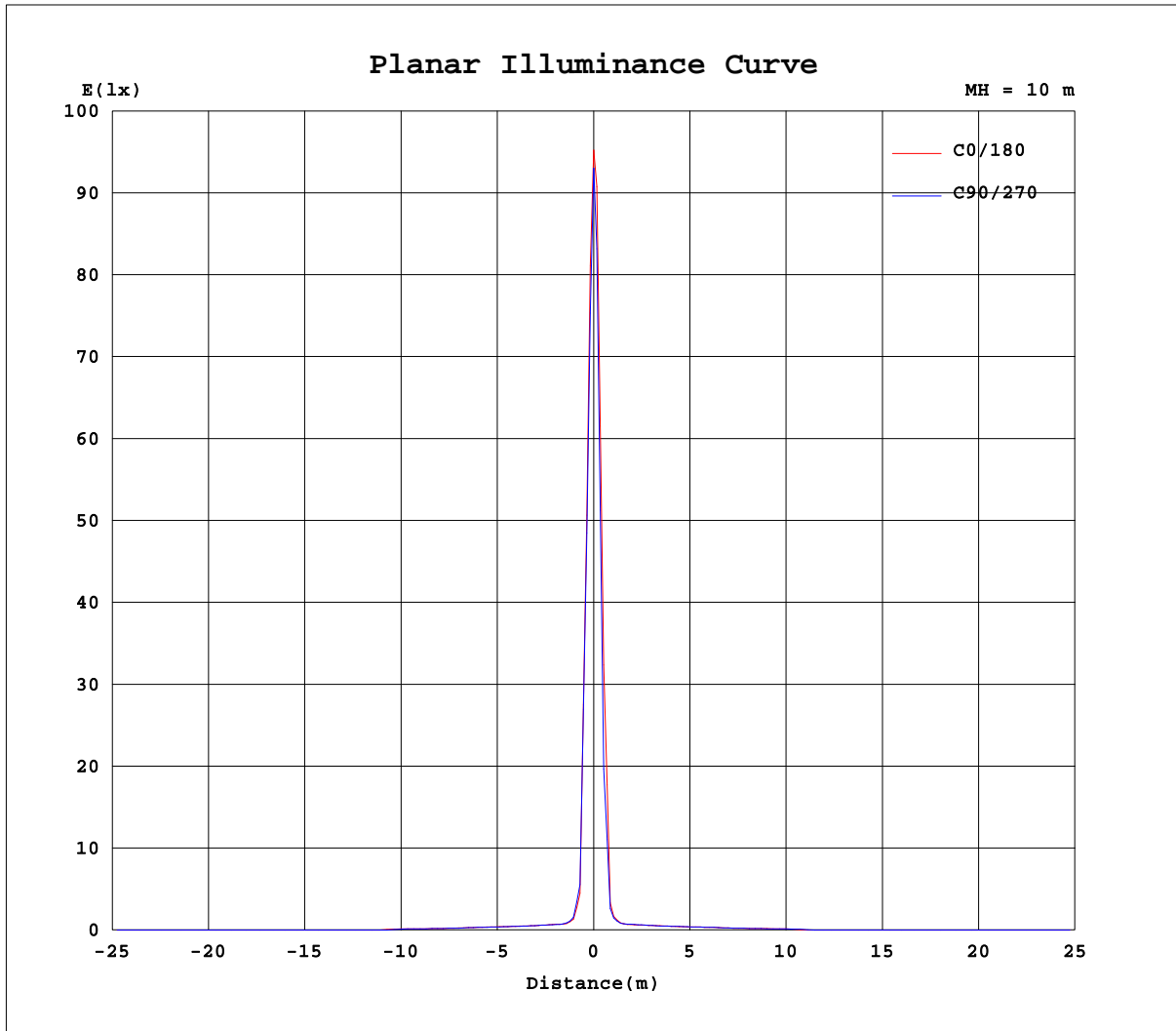
AvgL	cd/m2
L_0~180(65)av	1163
L_0~180(75)av	1140
L_0~180(85)av	194
L_90~270(65)av	1185
L_90~270(75)av	1234
L_90~270(85)av	199
L_45(65)av	1152
L_45(75)av	1192
L_45(85)av	294

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:18DEG  
Operators:HUA  
Test Date:2018-12-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
Humidity:40%  
Test Distance:12.280m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 18DEG  
 Operators: HUA  
 Test Date: 2018-12-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.350  
 Humidity: 40%  
 Test Distance: 12.280m [K=1.0000]  
 Remarks:



