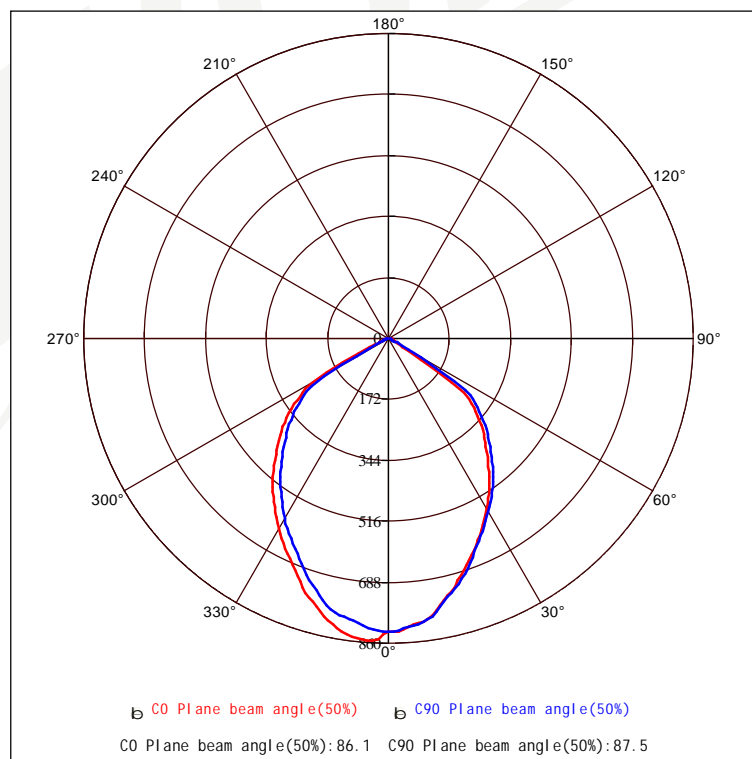


Goniophotometer Test Report

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm					
Lamp Name: LP-COB20BX		Lamp Type: Class I		Weight(kg):	
Lamp ID: LP-COB20BX		Lamp Spec:		Shape Size:	
Manufactory: LIPER		Sur(m ²):		Protect Angle(Deg):	
Light Source Data			Photometric Data		
Model		Peak Value(cd)	855.1	Efficiency(lm/w)	80.2
Nominal P(w)	1.0	Position	180.0, 3.0	UP(C0-C180)	0.0
Rated Volt(v)	220.0	Total Flux(lm)	1491.863	Down(C0-C180)	52.0
Rated Flux(lm)	1.0	Up Flux Rate(%)	0.0	UP(C180-C360)	0.0
Illuminant QTY	1	Dw Flux Rate(%)	100.0	Down(C180-C360)	48.0

Planar Intensity Distribution Curve



Gama Angle Range: -90 - 90(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval(Deg): 45

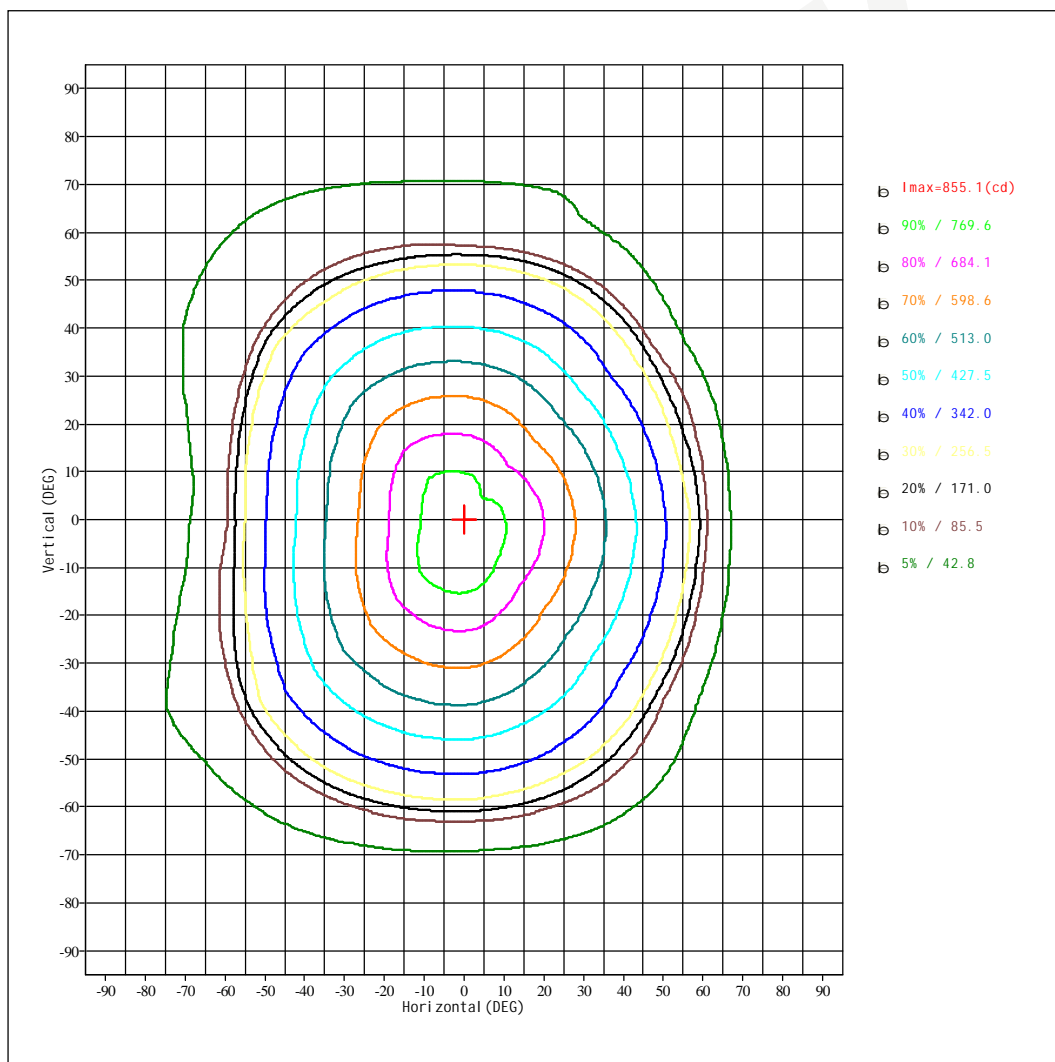
Humidity(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Planar IsoCandela Curve



Gama Angle Range: -90 - 90(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval(Deg): 45

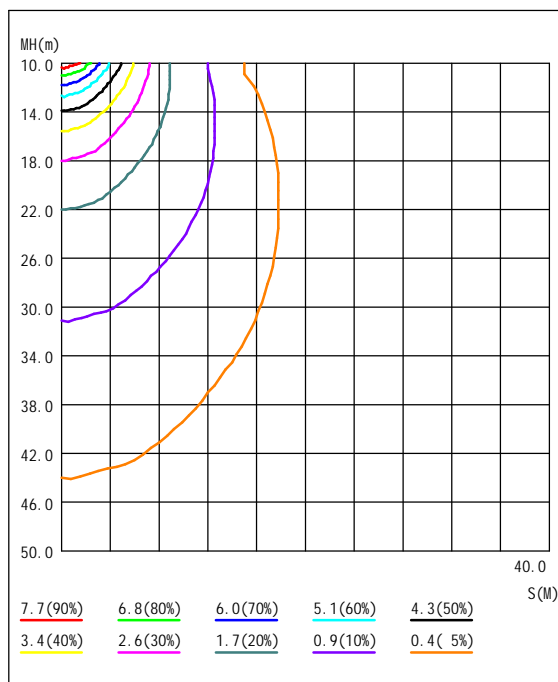
Humi di ty(%): 60

Date: 2018-8-3

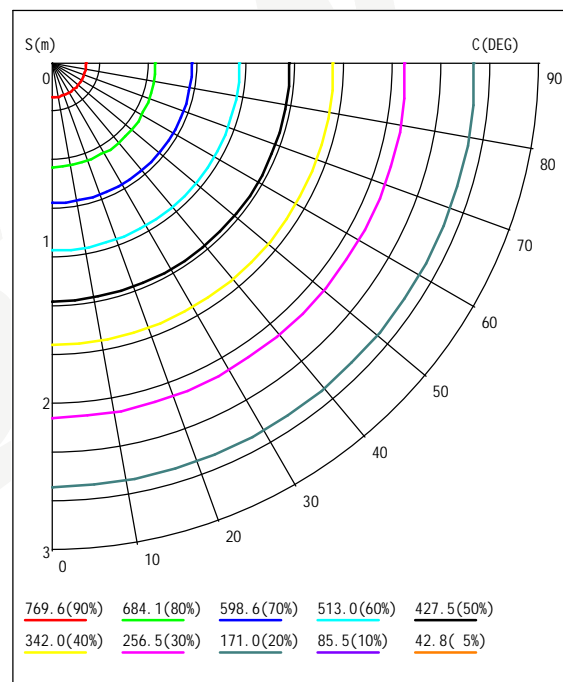
Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m ²):	Protect Angle(Deg):

Spacial ISOLUX Curve



Planar ISOLUX Curve



Gama Angle Range: -90 - 90(Deg)

Gama interval (Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval (Deg): 45

Humi di ty(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Luminance Limit Curve

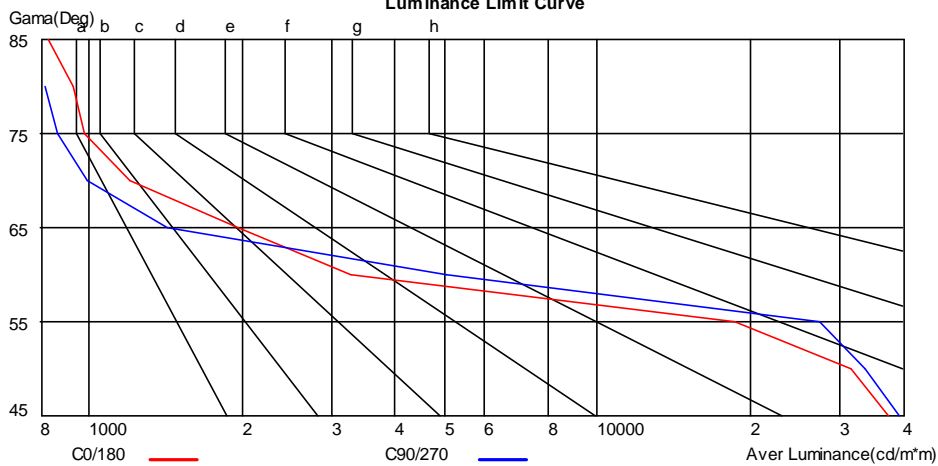
Aver Luminance(cd/m²)

Gm(Deg)	45	50	55	60	65	70	75	80	85
C0	37450.7	31561.0	18750.8	3263.5	1957.9	1198.1	975.7	927.2	827.3
C90	39355.6	33604.8	27419.2	5052.5	1423.6	991.2	867.7	815.8	784.8

Glare

Glare	Class	Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300

Luminance Limit Curve



Gama Angle Range: -90 - 90(Deg)

Gama interval (Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval (Deg): 45

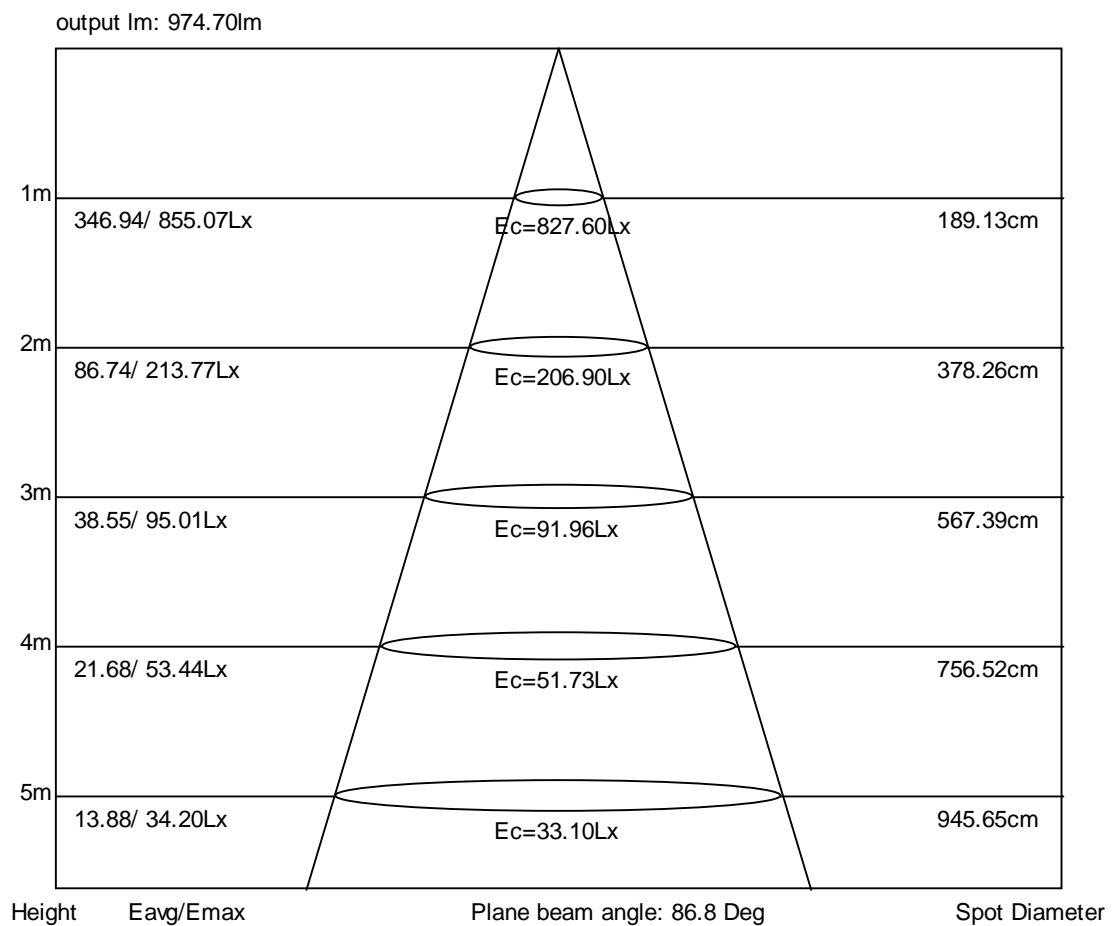
Humi di ty(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Average Illumination



Gama Angle Range: -90 - 90(Deg)

Gama interval (Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval (Deg): 45

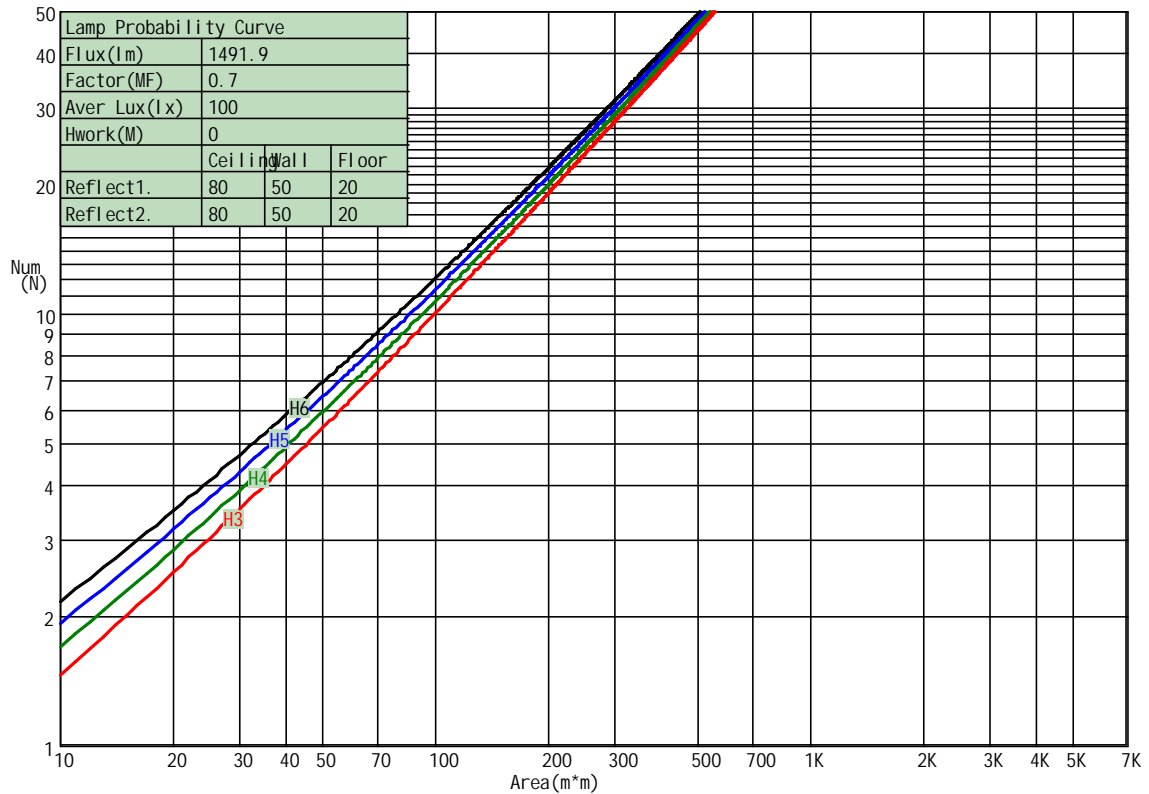
Humi di ty(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m ²):	Protect Angle(Deg):

Lamp Probability Curve



Gama Angle Range: -90 - 90(Deg)

Gama interval (Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval (Deg): 45

Humi di ty(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

UF Table

Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5
Wall	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3
Floor	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.60	57	43	34	55	42	34	52	41	33
0.80	58	42	32	56	41	31	52	39	30
1.00	60	43	31	58	42	30	53	39	29
1.25	62	43	30	59	42	29	53	39	27
1.50	63	44	29	60	42	28	53	38	27
2.00	65	46	30	62	43	29	55	39	26
2.50	67	46	30	63	44	28	55	39	26
3.00	68	48	30	64	45	29	56	40	26
4.00	70	49	31	65	46	29	57	41	26
5.00	71	51	32	66	47	30	57	41	27

CoEfficients Utilization

Ceiling(%)		0			0			0			0			0	
Wall (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Floor (%)		0			0			0			0			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	1.08	1.05	1.02	1.06	1.03	1	1.01	0.99	0.97	0.98	0.96	0.94	0.94	0.93	0.91
2	0.97	0.92	0.87	0.95	0.9	0.86	0.92	0.88	0.84	0.89	0.85	0.82	0.86	0.83	0.81
3	0.87	0.81	0.75	0.86	0.8	0.75	0.83	0.78	0.74	0.8	0.76	0.72	0.78	0.74	0.71
4	0.79	0.72	0.66	0.78	0.71	0.65	0.75	0.69	0.65	0.73	0.68	0.64	0.71	0.67	0.63
5	0.72	0.64	0.58	0.7	0.63	0.58	0.68	0.62	0.57	0.67	0.61	0.57	0.65	0.6	0.56
6	0.65	0.57	0.52	0.64	0.57	0.51	0.63	0.56	0.51	0.61	0.55	0.51	0.59	0.54	0.5
7	0.6	0.52	0.46	0.59	0.51	0.46	0.57	0.51	0.46	0.56	0.5	0.46	0.55	0.49	0.45
8	0.55	0.47	0.42	0.54	0.47	0.42	0.53	0.46	0.41	0.52	0.46	0.41	0.51	0.45	0.41
9	0.51	0.43	0.38	0.5	0.43	0.38	0.49	0.42	0.38	0.48	0.42	0.38	0.47	0.41	0.37
10	0.47	0.4	0.35	0.46	0.39	0.35	0.45	0.39	0.35	0.45	0.39	0.34	0.44	0.38	0.34

Gama Angle Range: -90 - 90(Deg)

Gama interval (Deg): 1

Temperature(Deg): 30

Tester: WH

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval (Deg): 45

Humidity(%): 60

Date: 2018-8-3

Remark:

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight(kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Si ze:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Wall Exi tance CoEfficients

Ceiling(%)		0			0			0			0			0	
Wall (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floor (%)		0			0			0			0			0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.23	0.13	0.04	0.23	0.13	0.04	0.21	0.12	0.04	0.2	0.12	0.04	0.19	0.11	0.04
2	0.23	0.13	0.04	0.22	0.12	0.04	0.21	0.12	0.04	0.2	0.11	0.04	0.19	0.11	0.03
3	0.22	0.12	0.03	0.21	0.11	0.03	0.2	0.11	0.03	0.19	0.11	0.03	0.19	0.1	0.03
4	0.21	0.11	0.03	0.2	0.11	0.03	0.19	0.1	0.03	0.19	0.1	0.03	0.18	0.1	0.03
5	0.2	0.1	0.03	0.19	0.1	0.03	0.18	0.1	0.03	0.18	0.09	0.03	0.17	0.09	0.03
6	0.19	0.09	0.03	0.18	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.03	0.16	0.09	0.03
7	0.18	0.09	0.02	0.17	0.09	0.02	0.17	0.08	0.02	0.16	0.08	0.02	0.16	0.08	0.02
8	0.17	0.08	0.02	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	0.15	0.08	0.02
9	0.16	0.08	0.02	0.15	0.08	0.02	0.15	0.07	0.02	0.15	0.07	0.02	0.14	0.07	0.02
10	0.15	0.07	0.02	0.15	0.07	0.02	0.14	0.07	0.02	0.14	0.07	0.02	0.13	0.07	0.02

Ceiling Cavi ty Exi tance CoEfficients

Ceiling(%)		0			0			0			0			0	
Wall (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floor (%)		0			0			0			0			0	
0	0.19	0.19	0.19	0.16	0.16	0.16	0.11	0.11	0.11	0.06	0.06	0.06	0.02	0.02	0.02
1	0.18	0.16	0.14	0.15	0.13	0.12	0.1	0.09	0.08	0.06	0.05	0.05	0.02	0.02	0.02
2	0.16	0.13	0.11	0.14	0.11	0.09	0.1	0.08	0.06	0.06	0.05	0.04	0.02	0.01	0.01
3	0.15	0.11	0.08	0.13	0.1	0.07	0.09	0.07	0.05	0.05	0.04	0.03	0.02	0.01	0.01
4	0.15	0.1	0.06	0.13	0.09	0.06	0.09	0.06	0.04	0.05	0.04	0.02	0.02	0.01	0.01
5	0.14	0.09	0.05	0.12	0.08	0.05	0.08	0.05	0.03	0.05	0.03	0.02	0.02	0.01	0.01
6	0.13	0.08	0.04	0.11	0.07	0.04	0.08	0.05	0.03	0.05	0.03	0.02	0.01	0.01	0.01
7	0.13	0.07	0.04	0.11	0.06	0.03	0.08	0.04	0.02	0.04	0.03	0.01	0.01	0.01	0
8	0.12	0.07	0.03	0.1	0.06	0.03	0.07	0.04	0.02	0.04	0.02	0.01	0.01	0.01	0
9	0.12	0.06	0.03	0.1	0.05	0.02	0.07	0.04	0.02	0.04	0.02	0.01	0.01	0.01	0
10	0.11	0.06	0.02	0.1	0.05	0.02	0.07	0.04	0.01	0.04	0.02	0.01	0.01	0.01	0

Gama Angle Range: -90 - 90(Deg)

C Angle Range: 0 - 180(Deg)

Gama interval (Deg): 1

C interval (Deg): 45

Temperature(Deg): 30

Humi di ty(%): 60

Tester: WH

Date: 2018-8-3

Distance(m): 7.070

Remark:

Test System: ZWL Goni ophotometer System V3.0

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight (kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m ²):	Protect Angle(Deg):

Ring-shaped Flux Data Table

Gm\C(Deg)	0	45	90	135	180	225	270	315	Range	Ring	T(lm)
5	810	820	811	828	853	816	811	786	0-5	19.6	19.6
10	775	799	778	815	828	789	791	743	5-10	57.5	77.2
15	717	747	725	774	779	735	747	682	10-15	90.6	168
20	659	692	668	723	725	673	687	639	15-20	117	285
25	607	636	612	665	667	623	633	588	20-25	137	422
30	549	584	559	614	614	566	581	531	25-30	152	574
35	491	528	508	563	558	509	524	473	30-35	161	735
40	429	469	449	512	502	446	466	411	35-40	163	898
45	375	409	394	453	439	391	407	355	40-45	159	1058
50	316	355	336	398	384	335	354	294	45-50	151	1209
55	188	295	274	338	317	274	294	168	50-55	136	1345
60	32.6	114	50.5	277	230	50.7	126	26.5	55-60	88.7	1434
65	19.6	27.8	14.2	65.1	36.4	18.9	23.7	13.7	60-65	30	1464
70	12	19.3	9.91	26.4	19.8	10	13.7	6.93	65-70	9.91	1474
75	9.76	11.2	8.68	15.4	8.84	6.4	7.38	5.28	70-75	6.03	1480
80	9.27	9.61	8.16	11	6.01	5.6	5.79	4.92	75-80	4.37	1484
85	8.27	9	7.85	9.81	5.48	5.04	5.33	3.94	80-85	3.92	1488
90	7.39	7.68	7.6	9	4.26	4.06	3.73	3.12	85-90	3.47	1492
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		

Gama Angle Range: -90 - 90(Deg)

C Angle Range: 0 - 180(Deg)

Gama interval (Deg): 1

C interval (Deg): 45

Temperature(Deg): 30

Humi dity(%): 60

Tester: WH

Date: 2018-8-3

Distance(m): 7.070

Remark:

Test System: ZWL Goniophotometer System V3.0

Measured Para U: 216.6V I: 153.0mA P: 18.60W PF: 0.562 Test LM: 1491.86lm		
Lamp Name: LP-COB20BX	Lamp Type: Class I	Weight (kg):
Lamp ID: LP-COB20BX	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m ²):	Protect Angle(Deg):

CD Table

Gm\C(Deg)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340
5.0	810	814	819	817	813	815	822	831	842	853	837	820	814	812	805	794	789	799
10.0	775	785	796	792	783	786	803	816	822	828	811	794	790	791	781	759	747	761
15.0	717	730	743	740	730	736	758	774	777	779	760	740	739	744	732	703	686	702
20.0	659	673	688	684	673	680	705	723	724	725	702	679	678	684	676	655	641	650
25.0	607	620	633	628	617	624	648	666	666	667	648	628	626	631	623	603	590	599
30.0	549	564	580	576	564	571	596	614	614	614	593	571	570	577	570	547	533	541
35.0	491	507	524	521	513	520	545	562	560	558	536	514	514	521	513	490	475	483
40.0	429	446	464	462	454	463	491	511	506	502	477	452	452	462	454	429	413	421
45.0	375	390	405	404	397	406	433	451	445	439	418	396	396	404	396	372	357	366
50.0	316	333	351	349	340	350	378	396	390	384	362	341	341	350	341	314	297	306
55.0	188	235	283	288	279	288	317	336	326	317	298	278	280	289	266	209	170	179
60.0	32.6	68.2	105	93.1	64.4	100	203	272	251	230	152	70.3	75.5	110	104	59.2	27.2	29.9
65.0	19.6	23.2	26.9	23.4	17.2	25.4	48.4	62	49	36.4	28.8	20.8	20.5	22.6	21.5	17	14.3	17
70.0	12	15.2	18.5	16.2	12	13.5	21	25.7	22.7	19.8	15.5	11.1	11.2	12.9	12.2	9.14	7.49	9.77
75.0	9.76	10.4	11	10.4	9.23	10.1	13.2	14.7	11.7	8.84	7.77	6.67	6.72	7.17	6.92	5.97	5.77	7.8
80.0	9.27	9.42	9.57	9.13	8.47	8.77	10	10.4	8.18	6.01	5.83	5.64	5.66	5.75	5.6	5.21	5.39	7.37
85.0	8.27	8.59	8.92	8.62	8.1	8.28	9.17	9.34	7.38	5.48	5.29	5.09	5.13	5.26	5.02	4.39	4.41	6.38
90.0	7.39	7.52	7.65	7.65	7.62	7.9	8.54	8.48	6.33	4.26	4.18	4.09	3.96	3.81	3.6	3.32	3.59	5.52
95.0																		
100.0																		
105.0																		
110.0																		
115.0																		
120.0																		
125.0																		
130.0																		
135.0																		
140.0																		
145.0																		
150.0																		
155.0																		
160.0																		
165.0																		
170.0																		
175.0																		
180.0																		

Gama Angle Range: -90 - 90(Deg)

C Angle Range: 0 - 180(Deg)

Gama interval (Deg): 1

C interval (Deg): 45

Temperature(Deg): 30

Humi di ty(%): 60

Tester: WH

Date: 2018-8-3

Distance(m): 7.070

Remark:

Test System: ZWL Goniophotometer System V3.0