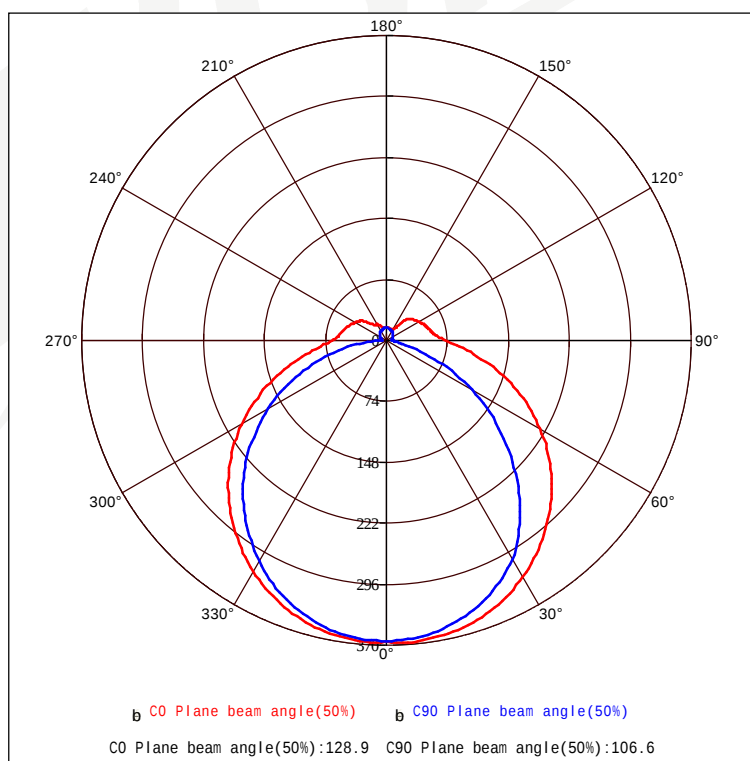


LED TUBE

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm						
Lamp Name: LPTL16D04			Lamp Type:		Weight(kg):	
Lamp ID: LPTL16D04			Lamp Spec:		Shape Size:	
Manufactory: LIPER			Sur(m^2):		Protect Angle(Deg):	
Light Source Data			Photometric Data			
Model			Peak Value(cd)	367.9	Efficiency(lm/w)	91.5
Nominal P(w)		1.0	Position	0.0,2.0	UP(C0-C180)	6.4
Rated Volt(v)		220.0	Total Flux(lm)	1335.885	Down(C0-C180)	44.6
Rated Flux(lm)		1.0	Up Flux Rate(%)	12.3	UP(C180-C360)	6.0
Illuminant QTY		1	Dw Flux Rate(%)	87.7	Down(C180-C360)	43.1

Planar Intensity Distribution Curve



Gama Angle Range:-180 - 180(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

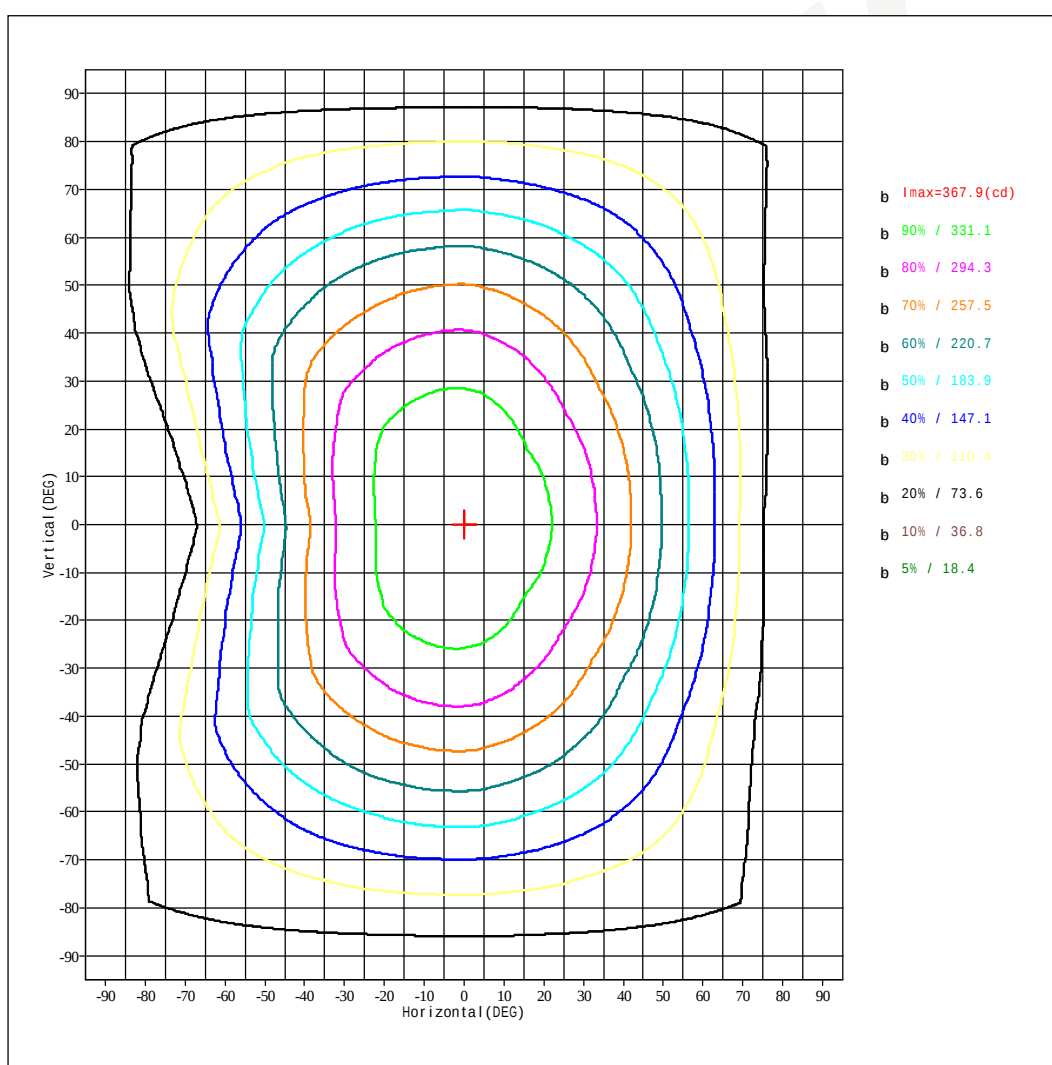
Humidity(%): 60

Date: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Planar IsoCandela Curve



Gama Angle Range:-180 - 180(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

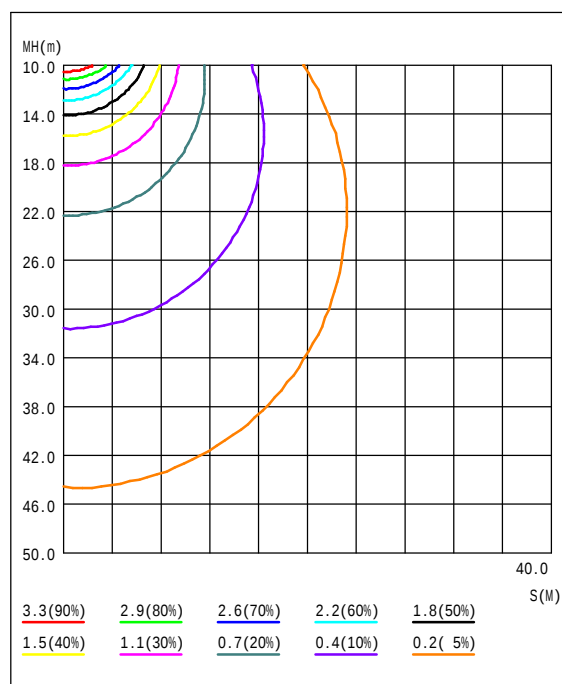
Humidity(%): 60

Date: 2018-8-13

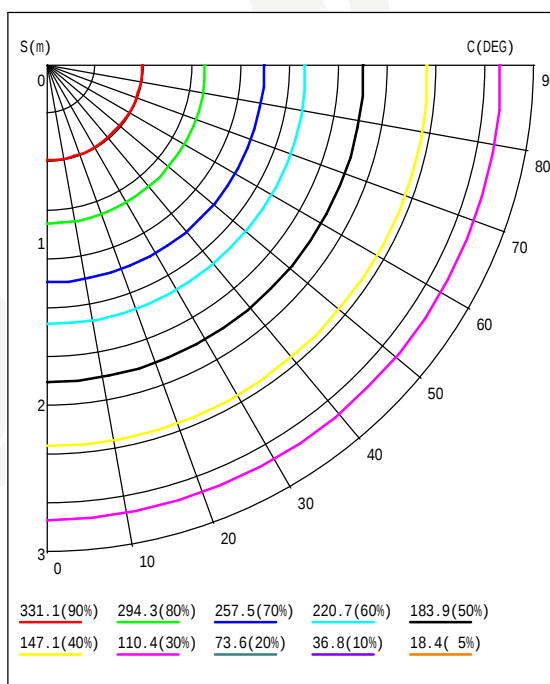
Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Spacial ISOLUX Curve



Planar ISOLUX Curve



Gama Angle Range:-180 - 180(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: 2018-8-13

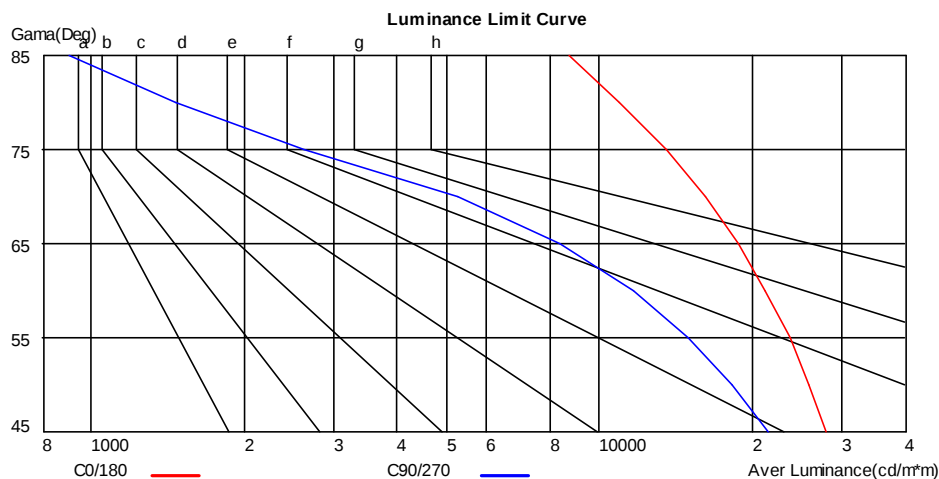
Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
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	27975.0	25939.7	23729.8	21298.6	18798.8	16217.1	13575.9	10994.2	8722.4
C90	21580.5	18309.0	14987.0	11658.5	8357.5	5281.4	2623.7	1459.6	903.7

Glare									
Glare	Class	Illuminance(lx)							
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
		a	b	c	d	e	f	g	h



Gama Angle Range:-180 - 180(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

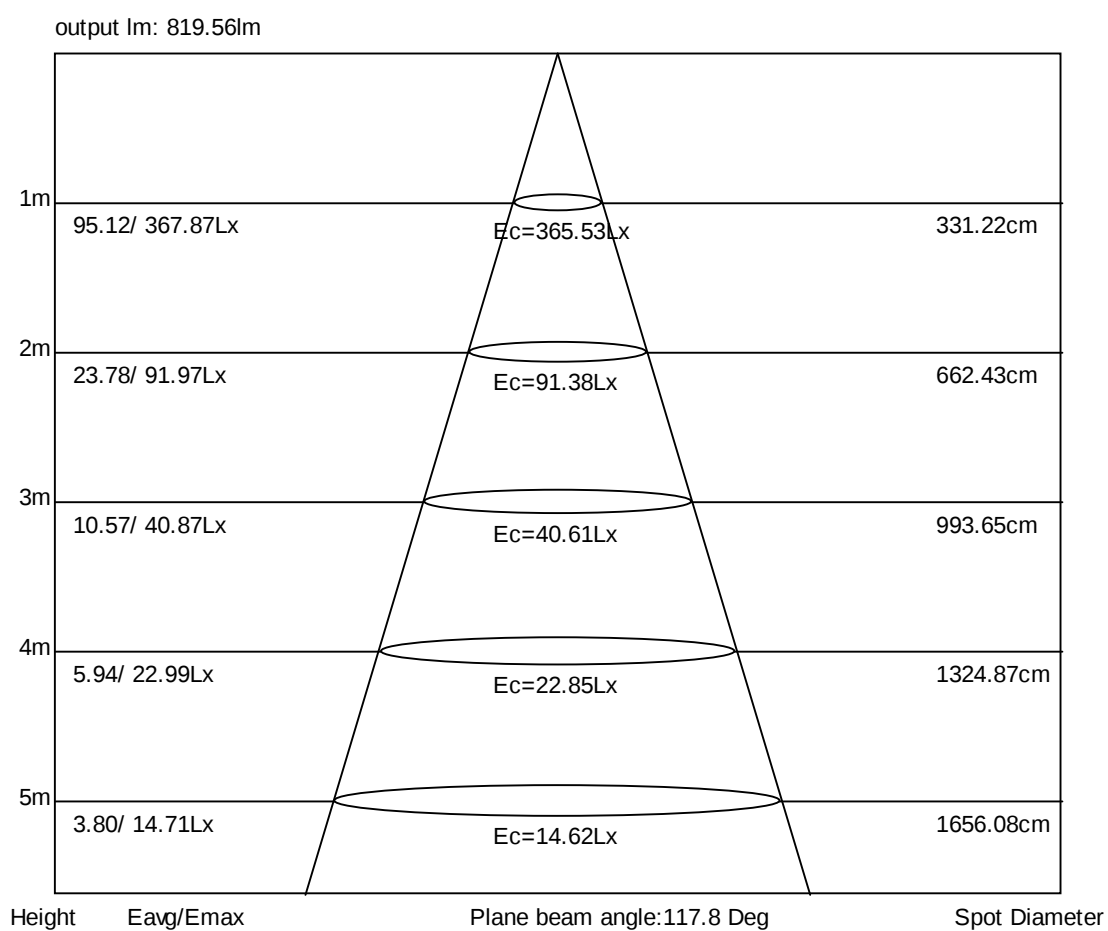
Humidity(%): 60

Date: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m ²):	Protect Angle(Deg):

Average Illumination



Gama Angle Range: -180 - 180(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

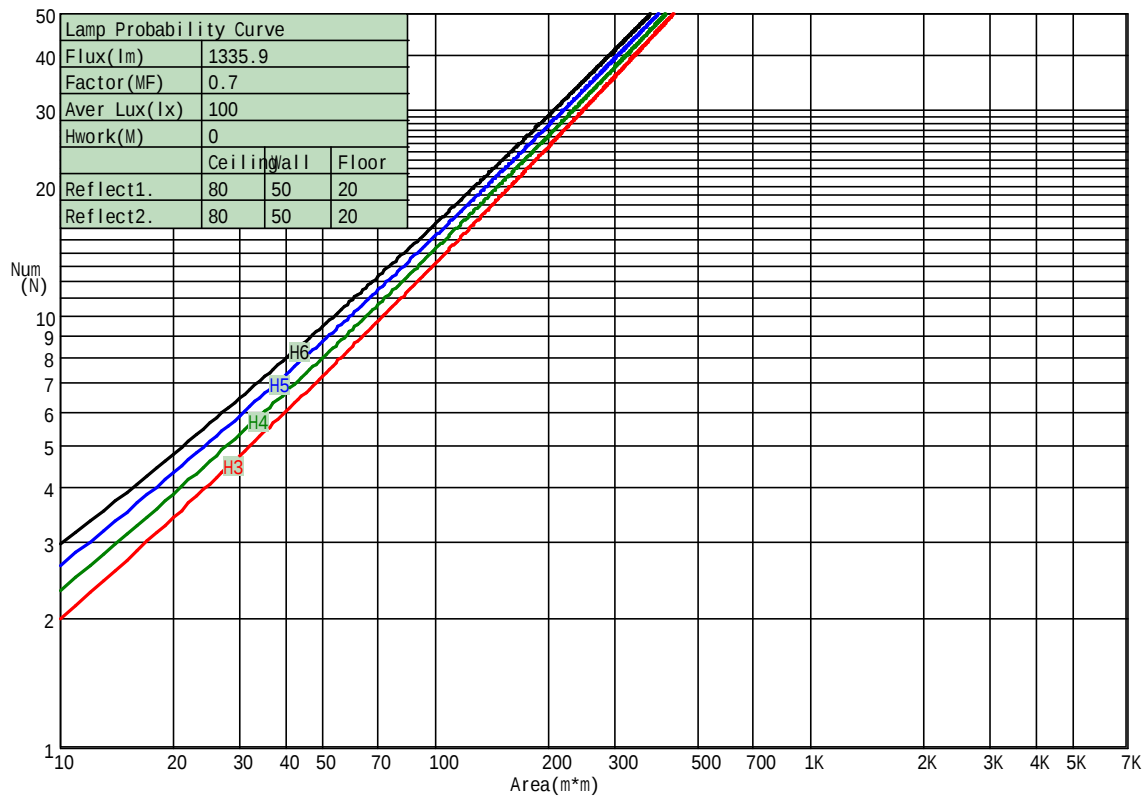
Humidity(%): 60

Date: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Lamp Probability Curve



Gama Angle Range:-180 - 180(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: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
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	37	20	9	35	19	8	30	16	7
0.80	46	28	16	43	26	15	37	23	13
1.00	52	33	20	48	31	19	42	27	17
1.25	57	39	25	53	36	23	46	32	21
1.50	61	42	28	57	40	26	49	34	23
2.00	66	47	32	61	44	30	52	38	26
2.50	68	50	34	63	46	32	54	40	28
3.00	70	51	36	65	48	33	55	41	28
4.00	72	54	37	67	50	35	56	42	29
5.00	73	55	38	68	51	35	57	43	30

CoEfficients Utilization

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	1.16	1.16	1.16	1.12	1.12	1.12	1.04	1.04	1.04	0.97	0.97	0.97	0.91	0.91	0.91
1	0.99	0.94	0.9	0.96	0.91	0.87	0.89	0.86	0.82	0.83	0.8	0.78	0.78	0.75	0.73
2	0.86	0.78	0.72	0.83	0.76	0.7	0.77	0.72	0.67	0.72	0.67	0.64	0.67	0.64	0.6
3	0.75	0.66	0.59	0.72	0.64	0.58	0.67	0.61	0.55	0.63	0.58	0.53	0.59	0.54	0.51
4	0.66	0.57	0.5	0.64	0.55	0.49	0.6	0.53	0.47	0.56	0.5	0.45	0.52	0.47	0.43
5	0.59	0.5	0.43	0.57	0.48	0.42	0.53	0.46	0.4	0.5	0.44	0.39	0.47	0.42	0.37
6	0.53	0.44	0.37	0.51	0.43	0.36	0.48	0.41	0.35	0.45	0.39	0.34	0.42	0.37	0.33
7	0.48	0.39	0.33	0.46	0.38	0.32	0.44	0.36	0.31	0.41	0.35	0.3	0.39	0.33	0.29
8	0.43	0.35	0.29	0.42	0.34	0.28	0.4	0.33	0.28	0.38	0.31	0.27	0.36	0.3	0.26
9	0.4	0.31	0.26	0.39	0.31	0.25	0.37	0.3	0.25	0.35	0.28	0.24	0.33	0.27	0.23
10	0.37	0.29	0.23	0.36	0.28	0.23	0.34	0.27	0.22	0.32	0.26	0.22	0.3	0.25	0.21

Gama Angle Range:-180 - 180(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: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Wall Exitance 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	0.34	0.2	0.06	0.33	0.19	0.06	0.31	0.18	0.06	0.29	0.17	0.05	0.28	0.16	0.05
2	0.31	0.17	0.05	0.3	0.16	0.05	0.28	0.16	0.05	0.26	0.15	0.05	0.25	0.14	0.04
3	0.28	0.15	0.04	0.27	0.15	0.04	0.25	0.14	0.04	0.24	0.13	0.04	0.23	0.12	0.04
4	0.26	0.13	0.04	0.25	0.13	0.04	0.23	0.12	0.04	0.22	0.12	0.04	0.21	0.11	0.03
5	0.23	0.12	0.03	0.23	0.12	0.03	0.21	0.11	0.03	0.2	0.11	0.03	0.19	0.1	0.03
6	0.22	0.11	0.03	0.21	0.11	0.03	0.2	0.1	0.03	0.19	0.1	0.03	0.18	0.09	0.03
7	0.2	0.1	0.03	0.19	0.1	0.03	0.18	0.09	0.03	0.17	0.09	0.03	0.16	0.08	0.02
8	0.19	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.02	0.16	0.08	0.02	0.15	0.08	0.02
9	0.17	0.08	0.02	0.17	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	0.14	0.07	0.02
10	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.07	0.02	0.14	0.07	0.02	0.13	0.07	0.02

Ceiling Cavity Exitance 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	0.28	0.28	0.28	0.24	0.24	0.24	0.17	0.17	0.17	0.1	0.1	0.1	0.03	0.03	0.03
1	0.28	0.25	0.23	0.24	0.22	0.19	0.16	0.15	0.13	0.09	0.09	0.08	0.03	0.03	0.03
2	0.27	0.23	0.19	0.23	0.2	0.17	0.16	0.14	0.12	0.09	0.08	0.07	0.03	0.03	0.02
3	0.26	0.21	0.17	0.22	0.18	0.15	0.15	0.13	0.1	0.09	0.07	0.06	0.03	0.02	0.02
4	0.25	0.2	0.15	0.22	0.17	0.13	0.15	0.12	0.09	0.09	0.07	0.06	0.03	0.02	0.02
5	0.25	0.19	0.14	0.21	0.16	0.12	0.15	0.11	0.09	0.08	0.07	0.05	0.03	0.02	0.02
6	0.24	0.18	0.14	0.21	0.16	0.12	0.14	0.11	0.08	0.08	0.06	0.05	0.03	0.02	0.02
7	0.23	0.17	0.13	0.2	0.15	0.11	0.14	0.1	0.08	0.08	0.06	0.05	0.03	0.02	0.02
8	0.23	0.17	0.13	0.2	0.14	0.11	0.14	0.1	0.08	0.08	0.06	0.05	0.03	0.02	0.02
9	0.22	0.16	0.12	0.19	0.14	0.11	0.13	0.1	0.08	0.08	0.06	0.05	0.02	0.02	0.02
10	0.21	0.16	0.12	0.19	0.14	0.1	0.13	0.1	0.07	0.07	0.06	0.04	0.02	0.02	0.01

Gama Angle Range:-180 - 180(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: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	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	367	366	363	364	366	362	363	361	0-5	8.72	8.72
10	365	364	358	361	363	356	359	356	5-10	25.9	34.6
15	360	359	349	356	356	347	350	348	10-15	42.3	76.9
20	353	351	337	347	347	335	339	338	15-20	57.4	134
25	343	341	322	336	336	321	324	324	20-25	70.7	205
30	330	328	305	323	322	304	307	309	25-30	81.8	287
35	315	312	278	306	306	285	288	291	30-35	90.3	377
40	298	295	248	289	288	265	267	271	35-40	96	473
45	280	275	216	269	268	242	243	250	40-45	98.7	572
50	259	254	183	247	248	217	218	228	45-50	98.5	670
55	237	232	150	225	225	192	191	201	50-55	95.3	766
60	213	208	117	200	201	165	163	175	55-60	89.4	855
65	188	182	83.6	174	174	138	134	149	60-65	80.8	936
70	162	155	52.8	147	148	110	104	121	65-70	70.3	1006
75	136	128	26.2	120	122	83.3	74.1	94.3	70-75	58.2	1064
80	110	101	14.6	93.3	97.1	60.3	45.5	70	75-80	45.8	1110
85	87.2	75.7	9.04	69.9	77.9	45.4	21.4	51.3	80-85	34.7	1145
90	70.7	55	6.52	52.7	65.1	38.9	6.01	41.5	85-90	26.1	1171
95	60.6	42.6	6.47	43.8	58.5	36.6	5.24	38	90-95	21.3	1192
100	55.8	37.7	6.81	40.2	55.1	34.8	5.69	36.3	95-100	19.1	1211
105	53	35.8	7.24	35.8	52.2	33.1	6.33	34.9	100-105	17.7	1229
110	50.4	34.2	7.74	33.9	49.2	31.5	7.06	33.4	105-110	16.6	1246
115	47.8	32.7	8.2	33.3	46.3	29.7	7.84	32	110-115	15.4	1261
120	45.1	31.2	8.81	31.5	43.4	26.2	8.66	29.9	115-120	14.1	1275
125	42.4	29.7	9.5	27.6	40.5	24.2	9.48	19.5	120-125	12.4	1288
130	39.7	25.6	10.2	24.7	37.2	17.9	10.3	14.1	125-130	10.3	1298
135	36	18.8	10.9	22.6	27.3	16	11	13.2	130-135	8.46	1306
140	27.4	14.3	11.6	20.8	24.8	15.2	11.7	12.4	135-140	6.78	1313
145	18.2	12.5	12.2	19.9	22.7	14.9	12.4	12.9	140-145	5.45	1319
150	14.9	12.8	12.8	18.3	22.3	14.6	13	13.5	145-150	4.55	1323
155	14.2	13.3	13.4	16.2	20.2	14.6	13.6	14	150-155	3.78	1327
160	14.6	13.7	13.9	15.5	18.2	14.6	14.1	14.4	155-160	3.13	1330
165	15	14.1	14.3	15.1	15.8	14.8	14.5	14.8	160-165	2.44	1332
170	15.3	14.4	14.7	14.9	15.4	15	14.8	15	165-170	1.76	1334
175	15.5	14.7	14.9	15	15.5	15.1	15	15.2	170-175	1.07	1335
180	15.6	15	15.1	15.2	15.5	15	15	15.2	175-180	0.36	1336

Gama Angle Range:-180 - 180(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: 2018-8-13

Remark:

Measured Para U: 216.2V I: 134.0mA P: 14.60W PF: 0.503 Test LM: 1335.89lm		
Lamp Name: LPTL16D04	Lamp Type:	Weight(kg):
Lamp ID: LPTL16D04	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	367	367	366	365	364	363	364	364	365	366	364	363	362	363	363	362	362	365
10.0	365	364	364	362	359	358	360	361	362	363	360	357	357	358	358	357	357	361
15.0	360	360	359	356	351	350	353	356	356	356	352	348	348	349	350	349	350	355
20.0	353	352	351	347	340	339	344	347	347	347	342	336	336	338	338	338	339	346
25.0	343	342	341	335	326	325	332	336	336	336	329	322	322	324	324	324	326	335
30.0	330	329	328	320	310	309	317	322	322	322	314	306	305	306	308	308	311	321
35.0	315	314	312	301	285	284	297	306	306	306	297	287	286	287	289	290	293	305
40.0	298	297	295	279	258	257	275	288	288	288	278	267	265	266	268	270	274	286
45.0	280	278	276	256	229	227	251	269	269	268	257	245	243	243	245	248	253	267
50.0	259	257	255	231	199	197	226	247	248	248	234	221	218	218	220	225	231	246
55.0	237	235	232	205	168	166	200	225	225	225	211	195	192	191	193	198	205	222
60.0	213	211	209	178	137	135	173	200	201	201	185	169	164	163	166	171	180	197
65.0	188	185	182	149	105	103	144	174	174	174	158	142	136	135	137	144	153	171
70.0	162	159	156	122	75.2	73.4	116	147	147	148	131	114	108	105	108	116	126	144
75.0	136	132	129	94.8	48.6	46.7	89.2	120	121	122	105	87.5	80.3	76.1	78.5	87.7	98.9	118
80.0	110	106	102	72.8	33.5	31.8	67.5	93.7	95.4	97.1	81	64.3	55.4	48.7	50.9	61.9	74.3	92.5
85.0	87.2	82.2	77	53.8	23.6	22.4	50	70.8	74.4	77.9	63.7	48.9	37.5	26.6	27.9	41.5	55.3	71.5
90.0	70.7	63.8	56.8	39.1	17.1	16.6	37.6	54.1	59.7	65.1	53.7	41.8	28.1	13.2	13.8	29.9	44.7	57.9
95.0	60.6	52.8	44.6	30.8	14.4	14.6	31.5	45.4	52.1	58.5	48.9	39	26.3	12.1	12.4	27.2	40.5	50.7
100.0	55.8	47.9	39.7	27.6	13.6	14.1	29.3	41.8	48.6	55.1	46.2	37	25.2	12.1	12.4	26.3	38.4	47.3
105.0	53	45.4	37.6	26.4	13.5	13.5	26.5	37.6	45	52.2	43.8	35.2	24.3	12.2	12.6	25.5	36.9	45
110.0	50.4	43.3	35.9	25.5	13.5	13.5	25.3	35.5	42.5	49.2	41.4	33.4	23.5	12.4	12.8	24.8	35.3	43
115.0	47.8	41.2	34.3	24.6	13.6	13.7	25.1	34.7	40.6	46.3	39	31.5	22.5	12.6	13.1	24	33.7	40.9
120.0	45.1	39.1	32.7	23.9	13.7	13.8	24.1	32.8	38.2	43.4	35.9	28.1	20.5	12.5	13.3	22.9	31.5	38.5
125.0	42.4	36.9	31.1	23.1	13.9	13.5	21.7	29	34.9	40.5	33.4	26	19.4	12.7	11.7	16.2	22	32.4
130.0	39.7	33.5	27.1	20.5	13.6	13.4	20	26.1	31.8	37.2	28.8	20.1	15.4	12	11.1	12.8	16.9	28.5
135.0	36	28.5	20.7	16.2	12.6	13.5	18.7	23.1	25.2	27.3	22.3	17.2	14.3	12.1	11.5	12.5	15.7	26
140.0	27.4	21.7	15.7	13.4	12.2	13.6	17.8	21.3	23.1	24.8	20.6	16.2	14	12.5	11.9	12.2	14.1	20.8
145.0	18.2	15.7	13.2	12.4	12.3	13.9	17.4	20.2	21.5	22.7	19.3	15.7	14	12.9	12.5	12.7	13.5	15.9
150.0	14.9	14	13	12.8	12.8	14	16.5	18.7	20.5	22.3	18.9	15.4	14.1	13.4	13.1	13.3	13.6	14.3
155.0	14.2	13.8	13.4	13.3	13.4	14	15.3	16.6	18.5	20.2	17.8	15.2	14.3	13.8	13.7	13.8	14	14.1
160.0	14.6	14.2	13.8	13.8	13.8	14.2	15	15.8	17	18.2	16.6	15	14.5	14.2	14.1	14.3	14.4	14.5
165.0	15	14.6	14.2	14.2	14.3	14.5	14.9	15.2	15.5	15.8	15.4	14.9	14.7	14.6	14.5	14.7	14.8	14.9
170.0	15.3	14.9	14.5	14.5	14.6	14.7	14.8	15	15.2	15.4	15.3	15.1	14.9	14.8	14.8	14.9	15	15.2
175.0	15.5	15.2	14.8	14.8	14.9	15	15	15.1	15.3	15.5	15.3	15.1	15	15	15	15.1	15.2	15.3
180.0	15.6	15.3	15	15	15	15.1	15.1	15.2	15.4	15.5	15.3	15.1	15	15	15.1	15.1	15.2	15.4

Gama Angle Range:-180 - 180(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: 2018-8-13

Remark: