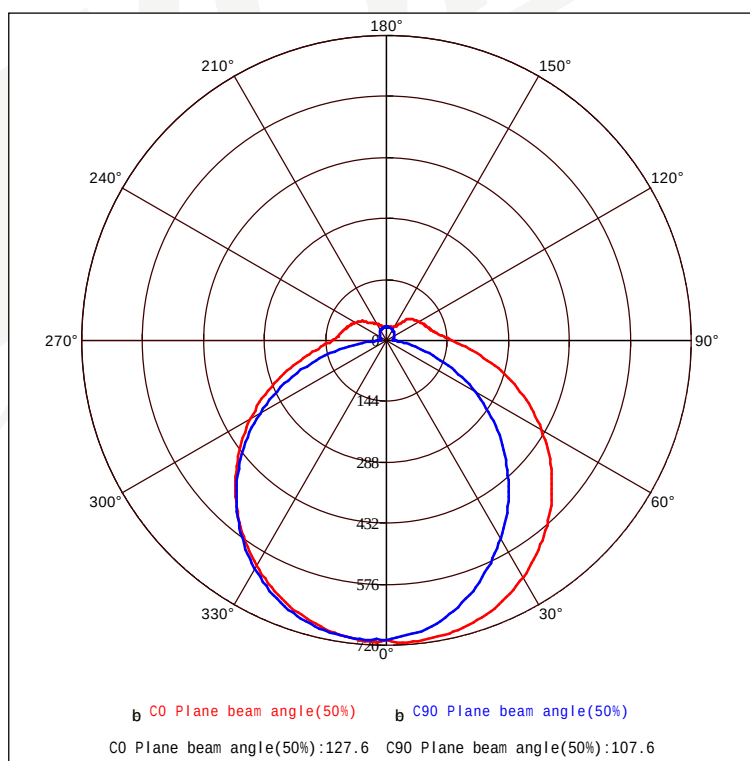


Goniophotometer Test Report

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm						
Lamp Name: LED TUBE			Lamp Type:		Weight(kg):	
Lamp ID: LPTL20DS04-2			Lamp Spec:		Shape Size:	
Manufactory: LIPER			Sur(m^2):		Protect Angle(Deg):	
Light Source Data			Photometric Data			
Model	LPTL20DS04-2		Peak Value(cd)	715.6	Efficiency(lm/w)	83.1
Nominal P(w)		1.0	Position	0.0,3.0	UP(C0-C180)	6.4
Rated Volt(v)		220.0	Total Flux(lm)	2947.56	Down(C0-C180)	43.2
Rated Flux(lm)		1.0	Up Flux Rate(%)	12.7	UP(C180-C360)	6.3
Illuminant QTY		1	Dw Flux Rate(%)	87.3	Down(C180-C360)	44.1

Planar Intensity Distribution Curve



Gama Angle Range:-180 - 180(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

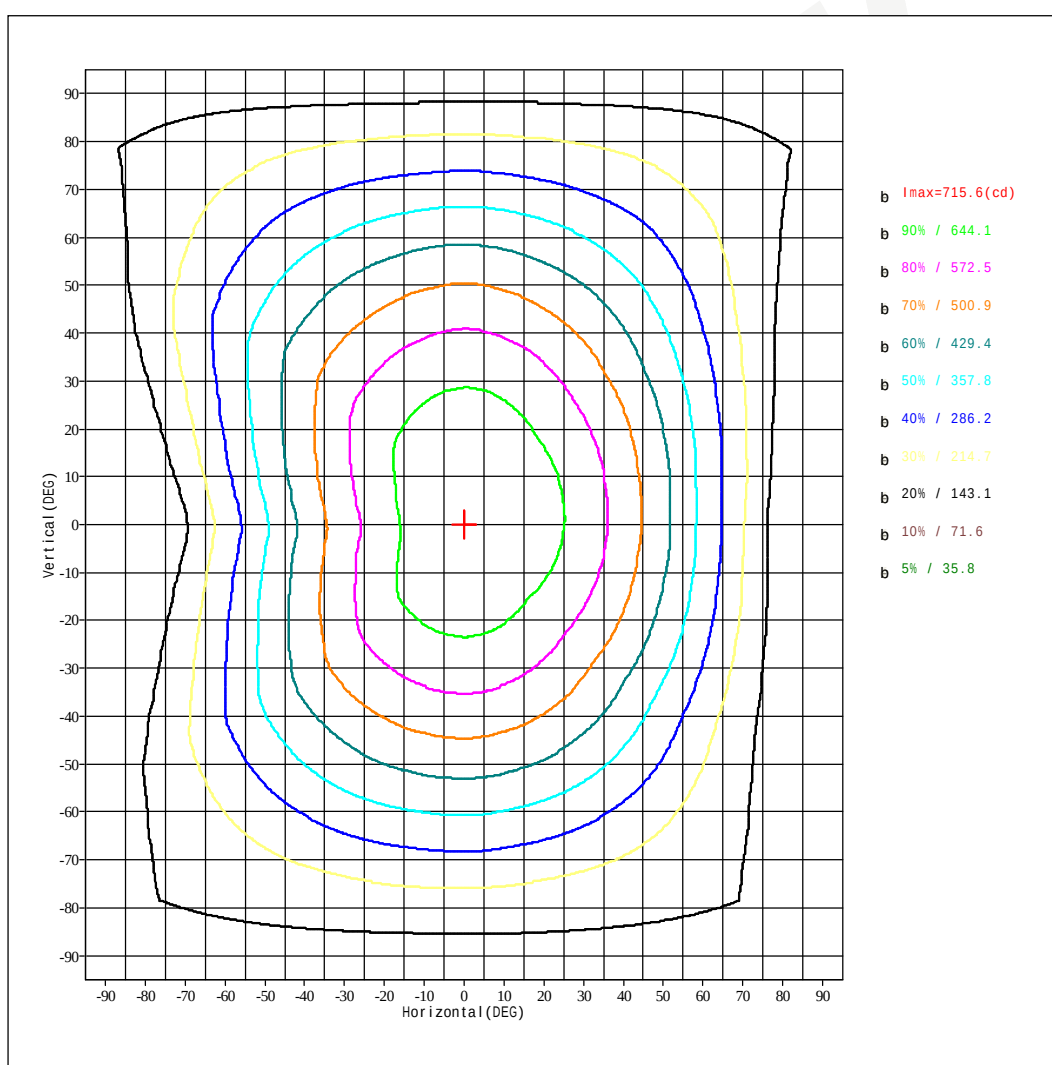
Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

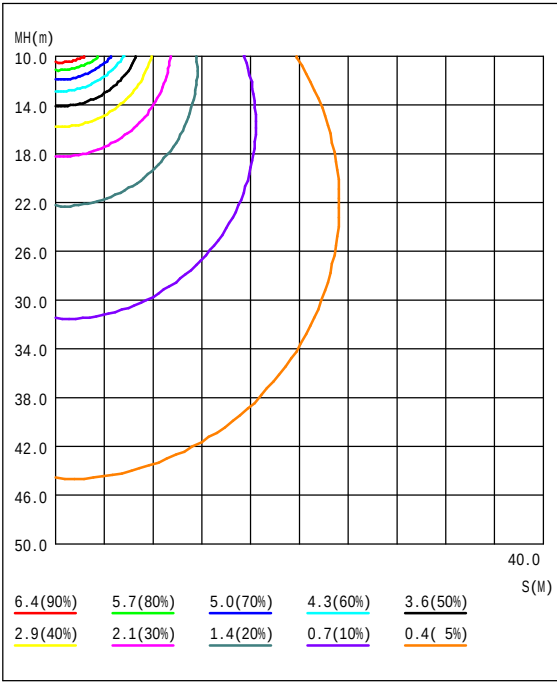
Humidity(%): 60

Date: 2023-10-30

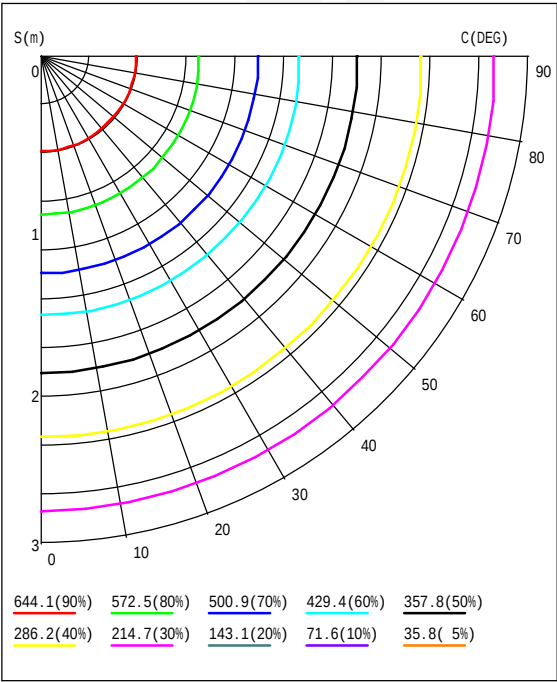
Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

Humidity(%): 60

Date: 2023-10-30

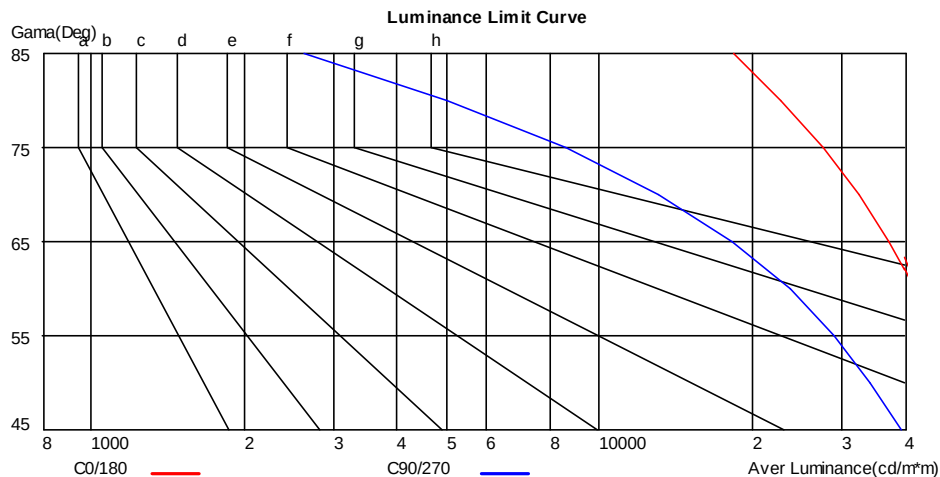
Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	Lamp Spec:	Shape Size:
Manufactory: LIPER	Sur(m^2):	Protect Angle(Deg):

Luminance Limit Curve

Aver Luminance(cd/m²m)									
Gm(Deg)	45	50	55	60	65	70	75	80	85
C0	54627.5	50570.7	46321.5	41847.9	37249.2	32457.2	27602.7	22842.6	18382.4
C90	39351.1	34286.1	29046.2	23743.3	18237.0	13091.0	8615.9	5008.5	2629.7

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: zxg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

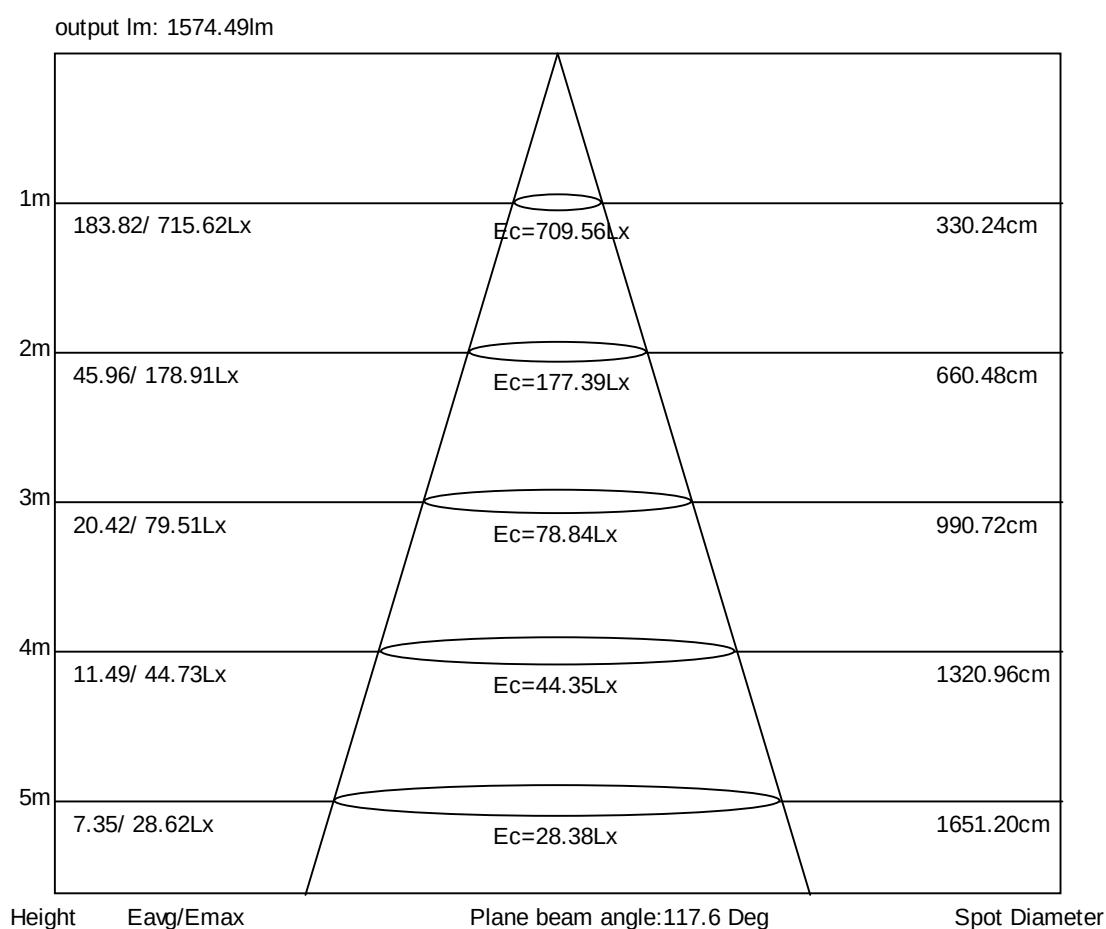
Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range: 0 - 180(Deg)

C interval(Deg): 45

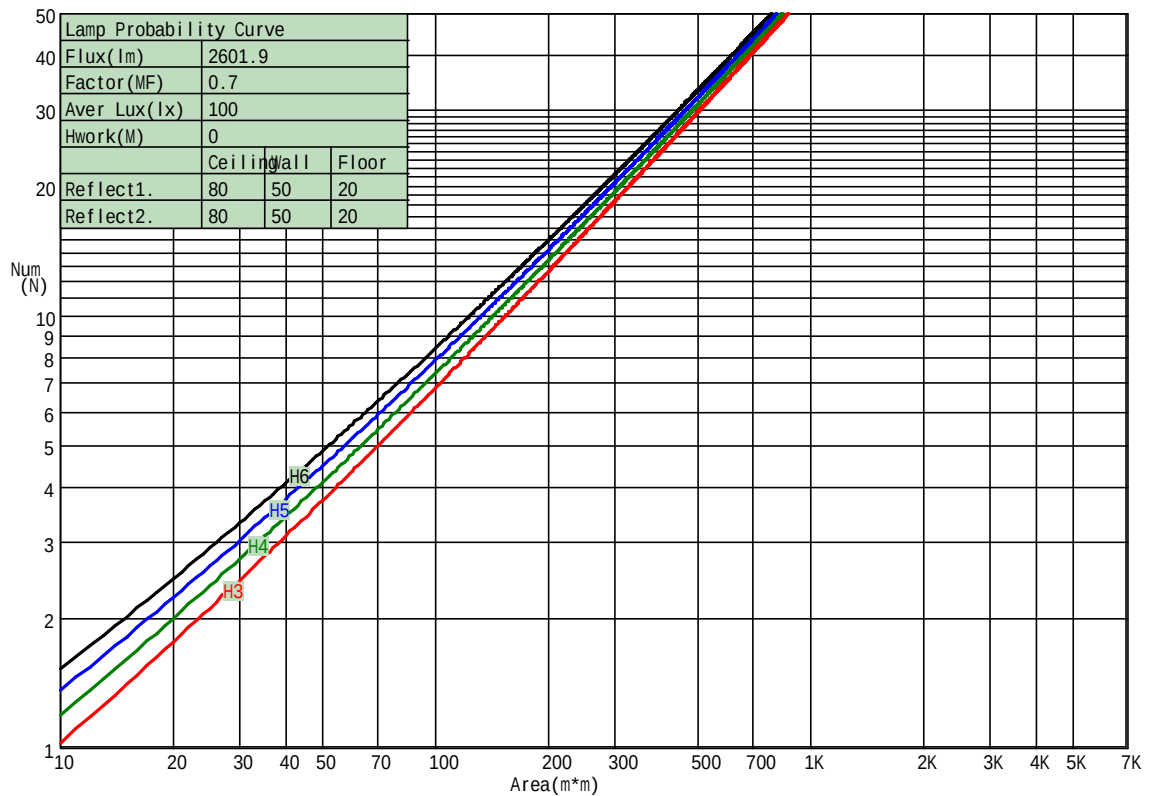
Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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	21	48	31	19	42	28	17
1.25	58	39	25	54	36	24	46	32	21
1.50	61	43	28	57	40	27	49	35	23
2.00	66	47	32	61	44	30	52	38	26
2.50	69	50	35	63	46	32	54	40	28
3.00	70	52	36	65	48	34	55	41	29
4.00	72	54	38	67	50	35	56	42	30
5.00	74	55	39	68	51	36	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	0.9	0.9	0.9
1	0.99	0.94	0.9	0.95	0.91	0.87	0.89	0.85	0.82	0.83	0.8	0.77	0.77	0.75	0.73
2	0.85	0.78	0.72	0.82	0.76	0.7	0.77	0.71	0.66	0.72	0.67	0.63	0.67	0.63	0.6
3	0.74	0.66	0.59	0.72	0.64	0.58	0.67	0.61	0.55	0.63	0.57	0.53	0.58	0.54	0.5
4	0.66	0.57	0.5	0.63	0.55	0.49	0.59	0.52	0.47	0.56	0.49	0.45	0.52	0.47	0.43
5	0.58	0.49	0.42	0.57	0.48	0.42	0.53	0.46	0.4	0.5	0.43	0.38	0.47	0.41	0.37
6	0.52	0.43	0.37	0.51	0.42	0.36	0.48	0.4	0.35	0.45	0.38	0.34	0.42	0.37	0.32
7	0.47	0.39	0.32	0.46	0.38	0.32	0.43	0.36	0.31	0.41	0.34	0.3	0.38	0.33	0.29
8	0.43	0.35	0.29	0.42	0.34	0.28	0.4	0.32	0.27	0.37	0.31	0.26	0.35	0.3	0.25
9	0.4	0.31	0.26	0.38	0.31	0.25	0.36	0.29	0.24	0.34	0.28	0.24	0.33	0.27	0.23
10	0.36	0.28	0.23	0.35	0.28	0.23	0.34	0.27	0.22	0.32	0.26	0.21	0.3	0.25	0.21

Gama Angle Range:-180 - 180(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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	0.35	0.2	0.06	0.34	0.19	0.06	0.31	0.18	0.06	0.3	0.17	0.05	0.28	0.16	0.05
2	0.31	0.17	0.05	0.3	0.17	0.05	0.28	0.16	0.05	0.27	0.15	0.05	0.25	0.14	0.04
3	0.28	0.15	0.04	0.27	0.15	0.04	0.26	0.14	0.04	0.24	0.13	0.04	0.23	0.13	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	0.29	0.29	0.29	0.25	0.25	0.25	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	0.2	0.16	0.15	0.14	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	0.27	0.21	0.17	0.23	0.18	0.15	0.16	0.13	0.1	0.09	0.07	0.06	0.03	0.02	0.02
4	0.26	0.2	0.16	0.22	0.17	0.14	0.15	0.12	0.1	0.09	0.07	0.06	0.03	0.02	0.02
5	0.25	0.19	0.15	0.21	0.16	0.13	0.15	0.11	0.09	0.09	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	0.09	0.08	0.06	0.05	0.03	0.02	0.02
7	0.24	0.18	0.13	0.2	0.15	0.12	0.14	0.11	0.08	0.08	0.06	0.05	0.03	0.02	0.02
8	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
9	0.22	0.16	0.13	0.19	0.14	0.11	0.13	0.1	0.08	0.08	0.06	0.05	0.03	0.02	0.02
10	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

Gama Angle Range:-180 - 180(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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	715	705	696	706	710	703	709	710	0-5	16.9	16.9
10	710	699	677	696	701	694	704	703	5-10	50.3	67.2
15	702	685	648	680	685	679	692	691	10-15	81.9	149
20	687	665	615	658	666	657	674	673	15-20	111	260
25	667	642	577	633	640	630	650	649	20-25	136	396
30	643	616	535	603	611	598	619	621	25-30	157	553
35	615	586	491	569	577	561	583	589	30-35	173	726
40	582	551	444	531	540	520	542	550	35-40	184	911
45	546	512	394	491	500	475	497	509	40-45	189	1100
50	506	472	343	448	457	429	448	464	45-50	189	1289
55	463	430	290	403	413	378	395	417	50-55	184	1473
60	418	385	237	358	367	326	339	367	55-60	173	1646
65	372	340	182	311	318	271	280	314	60-65	158	1803
70	325	292	131	263	269	214	219	261	65-70	138	1941
75	276	244	86.2	216	222	162	156	206	70-75	116	2057
80	228	197	50.1	168	180	119	95.2	156	75-80	92.1	2149
85	184	148	26.3	127	148	92	43.2	116	80-85	70	2219
90	151	109	16.1	98.3	126	79.3	12.8	91.4	85-90	53.1	2272
95	130	84.3	14.9	82.1	113	74.2	11.6	79.4	90-95	43.2	2315
100	113	71.6	15.8	69.3	107	70.1	12.5	75	95-100	37.8	2353
105	104	66.9	18.1	69.9	101	66.4	13.7	71.7	100-105	35	2388
110	98.8	64.1	19	60.3	95.4	62.2	15.1	68.4	105-110	32.6	2421
115	93.4	61.6	20.1	51.3	89.7	55.3	16.5	65.2	110-115	29.6	2450
120	88.1	59.4	21.2	45.8	83.9	49.7	18.1	60.2	115-120	26.7	2477
125	82.7	56.2	22.6	42	78	46.9	19.6	43.5	120-125	23.7	2501
130	77.5	45.8	24	39.4	71	40.7	21.2	35.9	125-130	20.3	2521
135	69.9	36.5	25.3	39.2	58.3	37.3	22.7	33.9	130-135	17.1	2538
140	52.5	33.3	26.5	38.7	53.1	35	24.8	31.9	135-140	14.4	2553
145	40.9	31.4	27.6	36.8	48.1	33.2	26.1	31.5	140-145	11.9	2564
150	36.4	31.1	28.7	35.2	45.1	31.6	27.3	31.4	145-150	9.97	2574
155	34.2	31.4	29.5	33.9	39.4	30.5	28.4	31.3	150-155	8.3	2583
160	33.8	31.6	30.2	32.6	35.2	30.3	29.4	31.3	155-160	6.74	2589
165	33.3	31.7	30.9	31.3	32.3	30.8	30.3	31.2	160-165	5.21	2595
170	32.7	31.6	31.4	31	31.6	31.3	31.1	31.2	165-170	3.73	2598
175	32.3	31.5	31.8	31.2	31.9	31.5	31.6	31.4	170-175	2.26	2601
180	32.1	31.3	32.1	31.3	31.9	31.5	31.8	31.3	175-180	0.76	2601

Gama Angle Range:-180 - 180(Deg)

Gama interval(Deg): 1

Temperature(Deg): 30

Tester: zxcg

Distance(m): 7.070

Test System: ZWL Goniophotometer System V3.0

C Angle Range:0 - 180(Deg)

C interval(Deg): 45

Humidity(%): 60

Date: 2023-10-30

Remark:

Measured Para U: 217.2V I: 305.2mA P: 35.47W PF: 0.535 Test LM: 2947.56lm		
Lamp Name: LED TUBE	Lamp Type:	Weight(kg):
Lamp ID: LPTL20DS04-2	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	715	710	706	702	698	698	703	706	708	710	707	704	705	708	709	710	710	713
10.0	710	705	700	692	682	681	690	697	699	701	698	695	697	702	704	704	704	707
15.0	702	694	687	673	656	655	669	680	683	685	682	680	683	689	692	691	692	697
20.0	687	678	667	649	626	625	644	659	662	666	662	658	663	671	674	674	675	681
25.0	667	656	644	620	591	589	615	634	637	640	636	631	637	646	650	649	651	659
30.0	643	631	619	589	553	550	580	603	607	611	605	600	605	614	619	620	624	634
35.0	615	602	589	555	512	508	543	570	573	577	570	562	568	578	584	587	592	604
40.0	582	569	555	516	467	463	503	532	536	540	531	522	527	537	544	548	554	568
45.0	546	531	516	473	420	415	459	492	496	500	489	478	482	492	500	505	513	530
50.0	506	491	476	430	371	366	414	449	453	457	445	432	435	444	452	459	469	488
55.0	463	449	433	384	321	315	366	404	409	413	398	382	384	391	400	410	422	443
60.0	418	404	389	337	270	264	319	359	363	367	349	330	330	336	345	358	373	396
65.0	372	358	344	288	217	210	269	312	315	318	298	276	274	278	287	303	321	347
70.0	325	310	296	239	166	160	220	264	266	269	245	220	216	218	228	247	268	297
75.0	276	262	247	192	121	115	173	217	220	222	196	169	160	157	167	189	213	245
80.0	228	215	200	149	82.2	75.9	129	169	175	180	153	126	111	100	108	136	164	197
85.0	184	168	152	108	53	48.4	94.2	130	139	148	123	98.1	76	53.9	59.2	92.3	124	154
90.0	151	133	114	78.8	36.5	34.1	71.3	101	114	126	105	84.4	57.5	27.3	30	65.6	98	125
95.0	130	110	89.3	61.5	30.1	29.6	60.1	85.5	99.6	113	96.2	78.5	53.7	25.3	26.5	57.2	84.9	108
100.0	113	94.9	76.1	53.3	28	27.5	51.7	73.4	90.4	107	90.8	74.1	51.2	25.1	26.2	54.5	79.2	96.4
105.0	104	88	71	50.9	28.8	29.4	52.9	73.3	87.4	101	85.9	70.2	49.1	25.2	26.4	52.7	75.3	90.1
110.0	98.8	83.7	67.9	49.3	28.8	28	46.7	64.1	80	95.4	80.9	65.8	46.7	25.4	26.7	50.9	71.7	85.5
115.0	93.4	79.5	65.1	48	29.2	26.9	41.1	55.5	72.9	89.7	74.7	59.1	42.6	25	27.2	49.2	68.3	81.1
120.0	88.1	75.5	62.5	46.9	29.6	26.6	37.7	50	67.2	83.9	68.9	53.4	39.3	25	27.3	46.4	63.2	75.9
125.0	82.7	71.1	59.1	45.2	29.9	26.8	35.6	45.9	62.2	78	64.4	50.3	37.9	25.6	24.8	35.7	47.8	65.6
130.0	77.5	63.6	49.3	38.7	28.7	27.3	34.4	42.9	57.2	71	57.8	44	34.3	25.4	24.4	31.1	40.5	59.3
135.0	69.9	55.3	40.2	32.8	27.7	28.3	34.6	41.3	49.9	58.3	49.1	39.6	32.5	25.9	25.1	30.2	37.9	54.2
140.0	52.5	44.1	35.4	31.1	28	29.2	34.7	40.3	46.8	53.1	45.2	37	31.6	27	26.4	29.6	34.2	43.5
145.0	40.9	36.7	32.4	30.1	28.4	29.6	33.8	38.1	43.2	48.1	41.6	34.9	30.9	27.7	27.3	29.7	32.5	36.8
150.0	36.4	34.1	31.7	30.3	29.2	30.1	33	36.2	40.8	45.1	39.2	33.1	30.2	28.3	28.2	30.1	32	34.2
155.0	34.2	33	31.7	30.8	29.9	30.4	32.4	34.5	37	39.4	35.5	31.5	29.8	28.9	29.1	30.4	31.6	32.9
160.0	33.8	32.8	31.9	31.2	30.5	30.8	31.8	32.9	34.1	35.2	33	30.8	30	29.6	29.8	30.7	31.6	32.7
165.0	33.3	32.6	31.9	31.4	31.1	31	31.1	31.4	31.8	32.3	31.7	31	30.7	30.4	30.5	30.9	31.4	32.4
170.0	32.7	32.2	31.7	31.5	31.4	31.3	31.1	31.1	31.3	31.6	31.4	31.3	31.2	31.1	31.1	31.1	31.3	32
175.0	32.3	31.9	31.6	31.6	31.7	31.7	31.4	31.3	31.6	31.9	31.8	31.6	31.6	31.6	31.5	31.4	31.5	31.9
180.0	32.1	31.8	31.4	31.6	31.9	31.9	31.5	31.3	31.6	31.9	31.7	31.5	31.6	31.8	31.7	31.5	31.4	31.7

Gama Angle Range:-180 - 180(Deg)

C Angle Range:0 - 180(Deg)

Gama interval(Deg): 1

C interval(Deg): 45

Temperature(Deg): 30

Humidity(%): 60

Tester: zxcg

Date: 2023-10-30

Distance(m): 7.070

Remark:

Test System: ZWL Goniophotometer System V3.0