

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

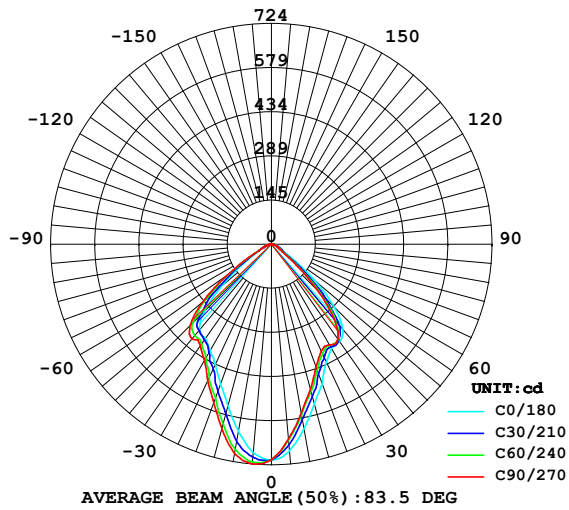
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

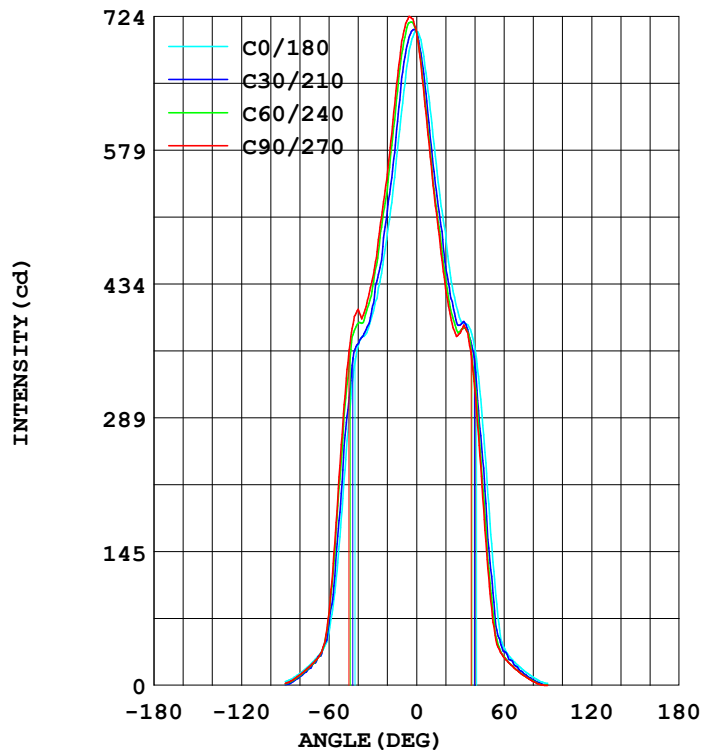
MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W	TYPE:Down light	WEIGHT:820G	
SPECIFICATION:CE, Zhaga	DIMENSION: φ194X155	SERIAL No.:2013110906	

DATA OF LAMP		Imax (cd)	723.6	S/MH (C0/180)	0.85
MODEL	SHARP	EFFICIENCY (%)	100.0	S/MH (C90/270)	0.97
NOMINAL POWER (W)	22	TOTAL FLUX (lm)	1036.3	Voltage (V)	219.8
RATED VOLTAGE (V)	220	EFFICIENCY (lm/W)	46.0	Current (A)	0.119
NOMINAL FLUX (lm)	1036.3	η up (%)	0.0	Power (W)	22.52
LAMPS QUANTITY	1	η down (%)	100.0	Power Factor (PF)	0.857
TEST VOLTAGE (V)	219.8	Effective Flux (lm)	971.6	EELI	0.300

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



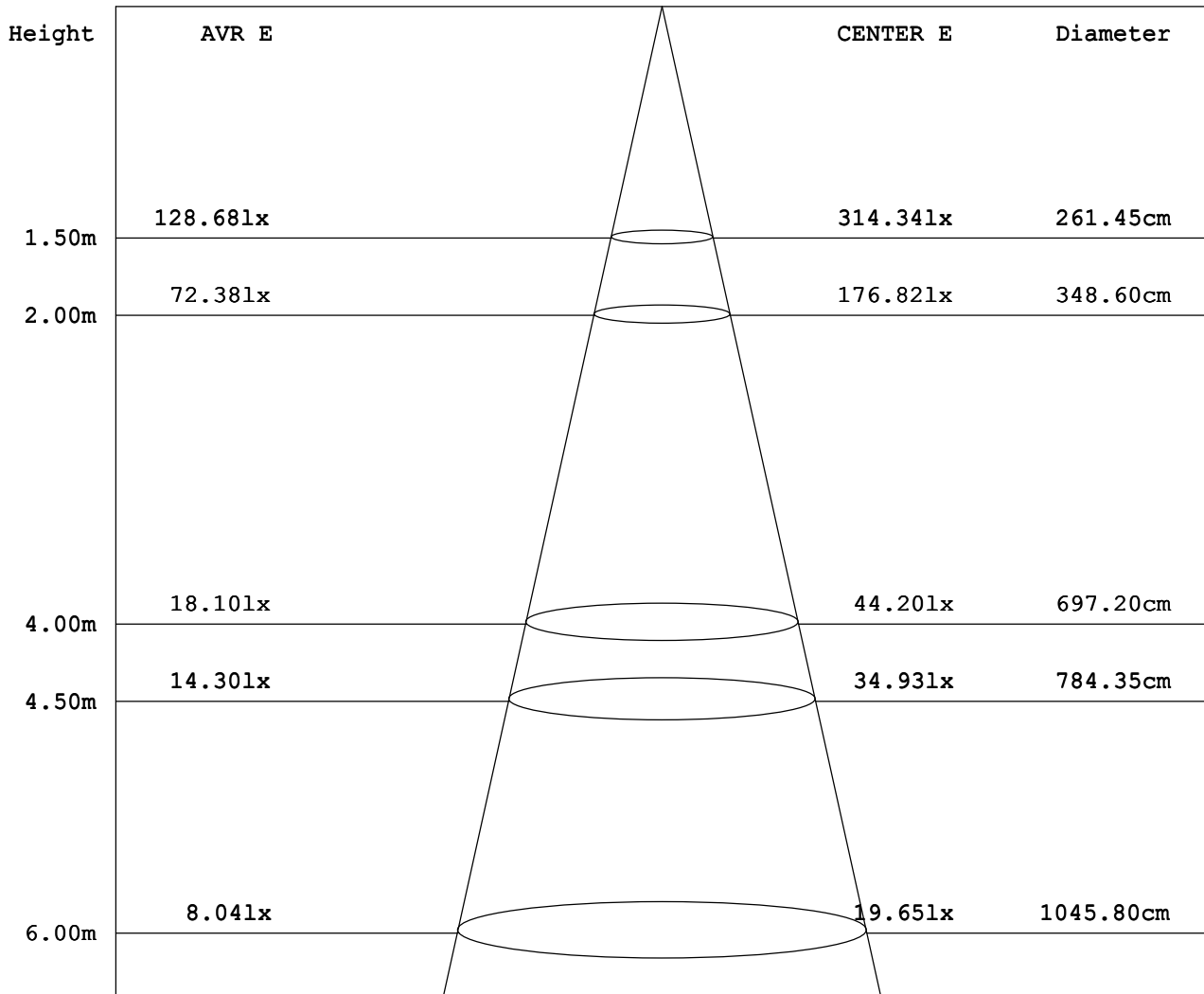
Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks:

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W	TYPE:Down light	WEIGHT:820G	
SPECIFICATION:CE, Zhaga	DIMENSION: ϕ 194X155	SERIAL No.:2013110906	



Angle:82.1deg

Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W		TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total
5.0	685.9	708.9	723.6	710.7	680.2	651.5	641.5	652.9	0- 5	16.57	16.57
10.0	622.0	668.7	697.1	672.0	614.9	577.4	563.4	576.6	5- 10	46.61	63.18
15.0	549.4	599.4	627.8	598.7	543.6	505.1	494.3	505.8	10- 15	69.47	132.6
20.0	488.5	526.4	552.6	533.4	489.4	445.1	428.7	441.4	15- 20	85.39	218.0
25.0	436.5	465.6	495.1	479.8	426.8	403.1	387.0	392.4	20- 25	96.45	314.5
30.0	401.8	419.6	440.4	434.4	395.6	388.7	381.0	378.2	25- 30	105.7	420.2
35.0	379.0	390.7	406.6	404.6	390.0	384.0	381.2	378.8	30- 35	116.8	537.1
40.0	366.7	382.7	406.7	402.1	364.1	331.8	321.2	339.1	35- 40	126.2	663.4
45.0	309.9	351.5	377.3	357.8	291.8	232.2	214.6	247.4	40- 45	123.6	787.1
50.0	213.6	267.3	293.7	260.5	186.2	123.4	106.4	137.3	45- 50	100.4	887.6
55.0	114.9	156.3	176.0	143.0	87.87	51.91	44.61	63.74	50- 55	64.83	952.4
60.0	57.12	71.77	77.90	57.24	40.72	32.62	29.91	33.83	55- 60	34.27	986.7
65.0	36.50	35.04	36.16	33.91	28.89	23.78	21.63	23.45	60- 65	18.48	1005
70.0	26.87	23.53	25.35	24.19	20.78	16.53	14.70	15.86	65- 70	12.70	1018
75.0	19.26	16.52	17.74	16.43	14.19	10.04	9.126	10.07	70- 75	8.990	1027
80.0	12.67	9.926	11.15	10.27	8.788	5.037	4.056	4.893	75- 80	5.735	1033
85.0	7.267	4.158	5.408	4.883	4.056	1.170	0.507	0.893	80- 85	2.883	1036
90.0	4.056	1.183	2.028	2.197	2.197	0.338	0	0	85- 90	0.832	1036
95.0									90- 95		
100.0									95-100		
105.0									100-105		
110.0									105-110		
115.0									110-115		
120.0									115-120		
125.0									120-125		
130.0									125-130		
135.0									130-135		
140.0									135-140		
145.0									140-145		
150.0									145-150		
155.0									150-155		
160.0									155-160		
165.0									160-165		
170.0									165-170		
175.0									170-175		
180.0									175-180		
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

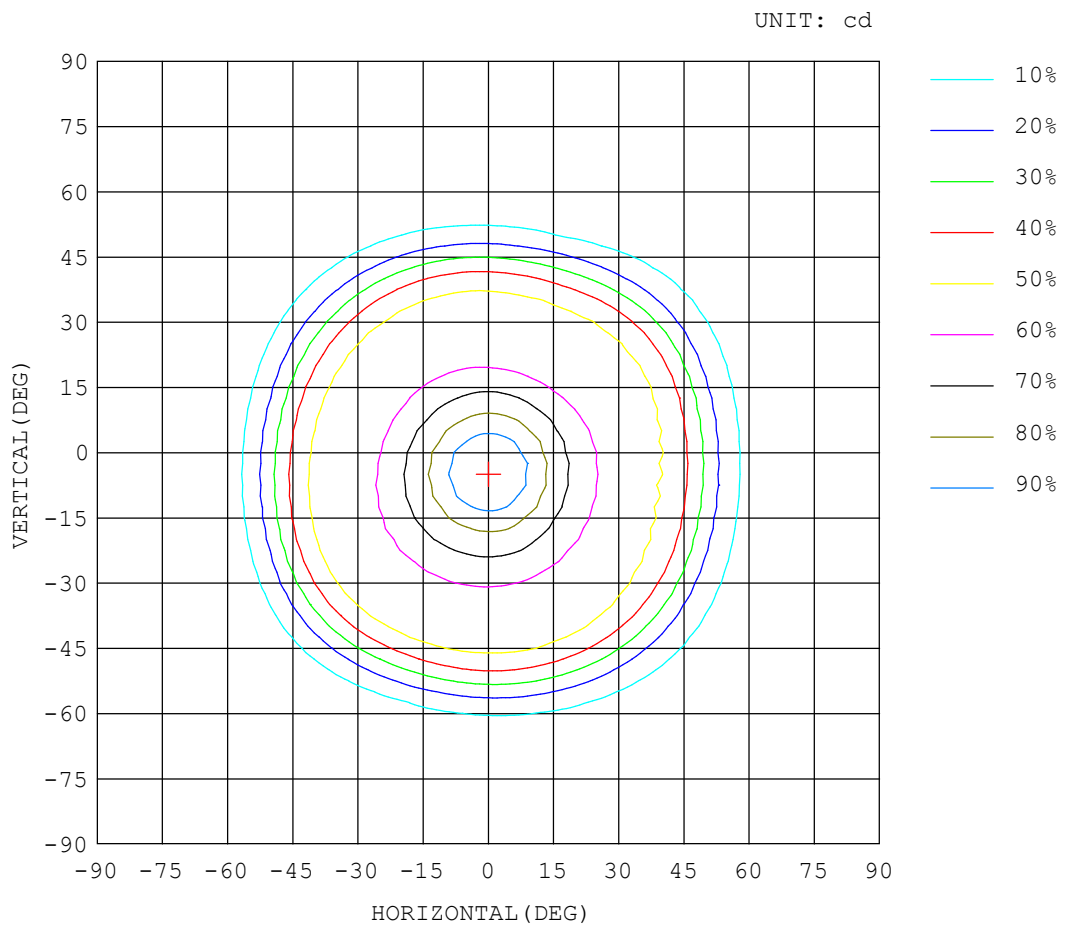
Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION	Address:	
NAME: M9020-4 20W	TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga	DIMENSION: ϕ 194X155	SERIAL No.:2013110906



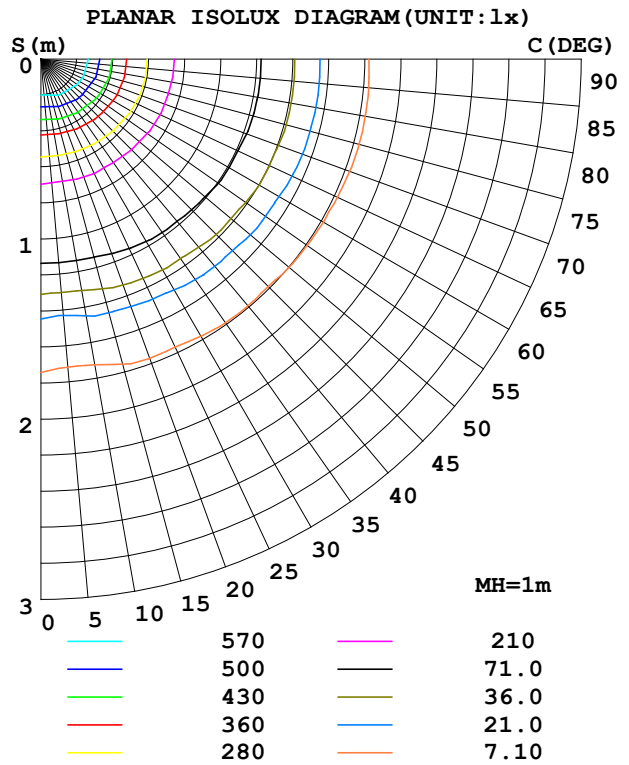
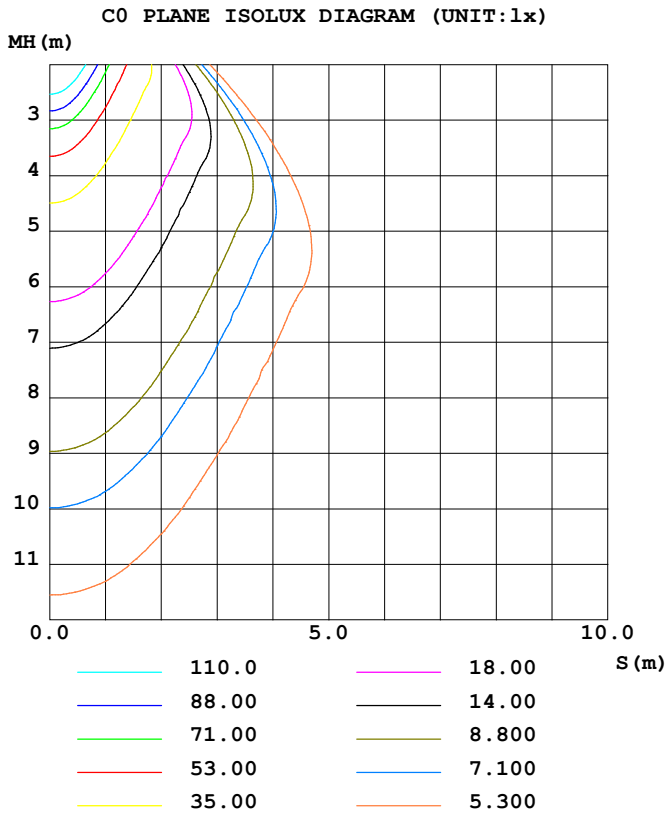
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 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W	TYPE:Down light	WEIGHT:820G	
SPECIFICATION:CE, Zhaga	DIMENSION: φ194X155	SERIAL No.:2013110906	



Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
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 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W		TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

UNIT: cd

γ (DEG)	C (DEG)															
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	
0.0	707	707	707	707	707	707	707	707	707	707	707	707	707	707	707	
5.0	686	688	690	692	695	698	701	703	706	709	712	714	716	718	720	
10.0	622	624	628	633	641	649	658	660	664	669	673	678	683	687	691	
15.0	549	550	552	562	571	573	576	586	596	599	602	606	612	617	622	
20.0	489	488	493	499	498	505	513	514	518	526	532	534	536	542	547	
25.0	437	429	442	439	447	451	452	464	462	466	475	477	484	484	489	
30.0	402	396	403	402	406	407	411	414	421	420	425	432	431	432	436	
35.0	379	374	373	380	376	378	383	383	389	391	393	399	400	400	403	
40.0	367	363	360	359	367	373	369	377	376	383	384	391	391	393	393	
45.0	310	314	317	321	322	322	329	342	338	352	349	360	363	365	369	
50.0	214	213	213	217	225	234	246	253	250	267	262	275	280	281	286	
55.0	115	109	119	127	128	133	141	145	142	156	152	164	168	168	174	
60.0	57.1	53.2	54.6	60.7	64.7	64.8	67.3	70.5	67.0	71.7	70.0	74.9	76.7	74.7	79.0	
65.0	36.5	35.6	36.5	35.3	35.4	33.4	34.1	36.2	35.4	35.0	35.2	36.5	36.0	36.1	36.3	
70.0	26.8	23.7	26.0	26.2	23.2	24.7	23.8	22.7	24.2	23.5	24.4	24.5	24.5	24.9	25.3	
75.0	19.2	15.5	15.2	16.6	15.1	14.6	15.3	16.2	15.6	16.5	16.7	16.6	16.9	17.3	17.6	
80.0	12.6	10.3	10.5	9.03	8.06	8.30	9.15	9.00	9.65	9.92	9.94	10.1	10.3	10.6	10.7	
85.0	7.26	5.21	2.54	2.85	3.10	3.15	3.73	3.79	3.96	4.15	4.43	4.72	4.86	5.03	5.20	
90.0	4.05	0.17	0.17	0.34	0.51	0.51	0.68	0.84	1.01	1.18	1.35	1.52	1.52	1.69	1.52	

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 Operators:001
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 Remarks:

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Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W		TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

UNIT: cd

γ (DEG)	C (DEG)														
	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145
0.0	707	707	707	707	707	707	707	707	707	707	707	707	707	707	707
5.0	722	723	723	724	723	722	721	720	718	716	715	713	711	709	707
10.0	694	696	697	697	696	694	692	689	686	683	680	677	672	664	657
15.0	625	627	628	628	627	625	623	621	618	616	612	606	599	592	589
20.0	551	553	553	553	552	551	551	549	548	546	543	537	533	533	528
25.0	492	494	495	495	494	493	492	492	491	488	485	479	480	478	465
30.0	439	440	440	440	440	440	440	439	439	437	433	433	434	426	429
35.0	405	406	406	407	406	406	406	407	407	406	403	406	405	403	405
40.0	397	401	404	407	407	405	405	406	407	405	404	407	402	404	400
45.0	373	377	378	377	376	373	371	370	370	364	362	368	358	364	350
50.0	291	294	295	294	291	286	282	280	277	270	267	273	261	268	256
55.0	177	178	178	176	173	168	165	163	159	154	150	154	143	150	140
60.0	80.9	81.6	79.8	77.9	75.7	73.1	70.1	67.9	60.5	61.2	56.2	61.1	57.2	59.9	52.4
65.0	36.9	37.1	36.8	36.1	36.0	35.4	35.2	34.8	34.3	34.2	32.9	34.1	33.9	33.7	32.7
70.0	25.4	25.5	25.4	25.3	25.1	24.9	24.7	24.6	24.5	24.3	24.0	23.8	24.1	23.1	24.3
75.0	17.8	17.9	17.9	17.7	17.6	17.4	17.2	17.0	17.0	17.2	17.1	16.6	16.4	16.6	15.5
80.0	11.0	11.2	11.2	11.1	11.0	10.8	10.7	10.7	10.8	10.8	10.7	10.6	10.2	9.96	10.0
85.0	5.25	5.48	5.42	5.40	5.42	5.31	5.24	5.08	5.08	5.00	5.03	4.91	4.88	4.75	4.49
90.0	1.52	1.69	2.02	2.02	2.02	1.85	1.69	1.85	2.02	2.19	2.02	2.02	2.19	2.02	1.85

Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

MANUFACTURER: DURALED EVOLUCION EN ILUMINACION		Address:	
NAME: M9020-4 20W		TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

UNIT: cd

C (DEG) \ γ (DEG)	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
0.0	707	707	707	707	707	707	707	707	707	707	707	707	707	707	707
5.0	705	701	696	692	688	684	680	676	673	669	666	664	661	658	654
10.0	651	646	642	639	630	622	615	610	607	604	597	590	584	581	579
15.0	587	577	567	563	562	553	544	541	539	529	522	520	518	512	507
20.0	519	517	514	503	501	498	489	486	477	466	468	461	453	455	452
25.0	467	459	452	451	438	442	427	432	420	419	414	411	411	403	405
30.0	422	417	415	412	406	407	396	400	394	395	393	392	390	390	387
35.0	400	401	401	395	399	396	390	395	395	387	391	389	385	388	383
40.0	403	392	390	391	384	374	364	363	363	361	350	343	347	337	338
45.0	351	348	336	324	311	302	292	283	274	268	263	261	252	239	245
50.0	250	248	243	233	219	202	186	182	176	170	161	151	140	135	136
55.0	135	131	124	112	110	107	87.8	91.0	80.0	70.7	68.8	64.6	59.6	56.8	57.8
60.0	53.1	52.3	48.4	47.6	49.2	47.0	40.7	44.2	43.6	40.1	38.0	38.3	36.3	34.2	35.1
65.0	34.8	35.5	33.4	32.6	30.9	30.9	28.8	29.6	28.5	28.9	28.4	28.6	26.9	24.9	24.3
70.0	23.5	23.3	25.2	22.6	22.5	24.7	20.7	23.4	20.4	19.7	20.5	18.3	17.7	17.6	16.5
75.0	15.8	16.3	16.4	16.2	18.0	18.1	14.1	16.7	15.6	13.1	12.3	11.8	11.1	10.4	10.4
80.0	9.36	9.58	9.31	8.63	9.16	10.7	8.78	9.66	7.58	6.57	6.60	6.25	5.69	5.70	5.30
85.0	4.15	3.94	3.58	3.34	3.63	3.70	4.05	3.31	2.77	2.32	2.03	2.00	1.89	1.56	1.31
90.0	1.85	1.69	1.52	1.52	1.52	1.18	2.19	0.00	0.00	0.17	0.17	0.34	0.34	0.34	0.34

Test System:HOPOO HPG1900
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LUMINOUS DISTRIBUTION INTENSITY DATA

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NAME: M9020-4 20W		TYPE:Down light	WEIGHT:820G
SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

UNIT: cd

C (DEG) \ γ (DEG)	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295
0.0	707	707	707	707	707	707	707	707	707	707	707	707	707	707	707
5.0	652	649	647	646	644	643	642	642	641	642	642	643	643	644	646
10.0	577	574	571	569	567	565	564	563	563	563	564	565	566	567	568
15.0	505	504	503	501	499	497	496	495	495	494	495	495	495	495	496
20.0	445	442	442	440	438	436	433	431	430	429	428	428	428	428	428
25.0	403	399	398	397	395	393	391	389	388	387	387	386	387	387	387
30.0	389	386	383	383	382	381	380	379	380	381	384	384	383	383	382
35.0	384	384	381	382	385	382	381	382	382	381	380	378	376	375	375
40.0	332	336	328	328	330	327	324	323	322	321	319	317	315	314	315
45.0	232	237	228	226	227	224	221	219	217	215	212	210	209	208	209
50.0	123	127	121	119	119	117	114	111	108	106	105	104	104	103	105
55.0	51.9	53.7	50.4	50.1	48.4	49.2	48.6	46.8	45.4	44.6	44.9	45.2	45.0	44.7	45.3
60.0	32.6	32.5	30.9	30.8	30.5	30.3	30.1	30.0	29.9	29.9	30.1	30.3	30.4	30.4	30.5
65.0	23.7	23.0	22.1	22.0	21.9	21.7	21.7	21.6	21.5	21.6	21.5	21.7	21.9	21.9	21.9
70.0	16.5	15.6	15.3	15.0	14.8	14.6	14.5	14.6	14.6	14.7	14.7	14.8	14.9	14.9	15.0
75.0	10.0	9.83	9.59	9.34	9.05	8.80	8.79	8.91	9.01	9.12	9.01	9.06	9.07	9.05	8.95
80.0	5.03	4.86	4.75	4.50	4.32	4.18	3.96	3.87	4.08	4.05	4.08	4.17	4.02	4.02	4.17
85.0	1.17	1.05	0.93	0.87	0.66	0.66	0.59	0.38	0.52	0.51	0.52	0.55	0.59	0.51	0.62
90.0	0.34	0.34	0.34	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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SPECIFICATION:CE, Zhaga		DIMENSION: φ194X155	SERIAL No.:2013110906

UNIT: cd

C (DEG) \ γ (DEG)	300	305	310	315	320	325	330	335	340	345	350	355
0.0	707	707	707	707	707	707	707	707	707	707	707	707
5.0	647	649	651	653	655	658	661	664	668	672	676	681
10.0	570	571	573	577	581	586	593	595	598	601	607	614
15.0	496	498	502	506	510	512	513	520	528	530	532	539
20.0	427	433	438	441	442	447	457	459	461	473	474	476
25.0	387	389	391	392	396	405	405	411	416	418	425	424
30.0	382	383	381	378	380	379	382	384	388	390	395	392
35.0	376	381	377	379	382	380	382	378	373	376	371	373
40.0	320	327	329	339	342	350	349	360	361	356	358	362
45.0	217	226	228	247	250	270	272	277	289	298	302	306
50.0	113	119	121	137	139	157	167	171	176	183	191	202
55.0	47.9	51.0	53.2	63.7	65.0	75.8	82.7	86.8	92.4	100	101	100
60.0	31.1	31.8	31.7	33.8	34.0	38.0	40.0	42.3	46.4	48.0	47.9	50.1
65.0	22.3	22.9	23.0	23.4	24.2	25.3	25.4	26.1	28.8	30.2	32.9	33.7
70.0	15.0	15.4	15.8	15.8	16.8	16.6	17.7	18.9	19.2	22.6	23.7	22.6
75.0	9.04	9.30	9.73	10.0	10.0	10.8	10.8	11.0	11.9	13.6	13.7	14.7
80.0	4.34	4.34	4.62	4.89	5.23	5.25	5.77	5.64	6.12	6.97	8.68	9.71
85.0	0.70	0.77	0.80	0.89	1.12	1.20	1.38	1.49	1.75	1.88	2.15	4.22
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Test System:HOPOO HPG1900
 Temperature:25.3DEG
 Operators:001
 Test Date:2013.11.09.

Test Set: 5.0deg/s B-Beta (TYPE B)
 Humidity:65.0%
 Test Distance:13.000 m
 Remarks: