



TEST REPORT

Reference No. : WTN15F0323614X1N
Applicant : FUZHOU WAER POWER-SAVING ELECTRIC APPLIANCES
COMPANY LIMITED
Address : QIAOTOU VILLAGE.HONGWEI TOWN, MINHOU COUNTY,
FUZHOU, CHINA
Manufacturer : FUZHOU WAER POWER-SAVING ELECTRIC APPLIANCES
COMPANY LIMITED
Address : QIAOTOU VILLAGE.HONGWEI TOWN, MINHOU COUNTY,
FUZHOU, CHINA
Product Name : energy saving lamp
Energy saving lamp Elektrox Dual 85W 2700/6500K, 4U E40 socket
for growth and bloom
Model No : 4U85W2700K6500K
101437
Ratings : 220-240VAC, 50/60Hz, 85W
Standards : CIE 84:1989 Measurement of luminous flux
Date of Receipt sample : 2015-03-12
Date of Test : 2015-03-13 to 2015-03-18
Date of Issue : 2015-03-19
Test Report Form No. : WPL-CIE84A-01A
Test Result : See the attached sheets

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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Compiled by:

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Finn Yu / Project Engineer



Approved by:

John Lin

John Lin / Manager



Test sample.....: energy saving lamp	
Type of test objects.....: 4U85W2700K6500K	
Trademark:: ---	
Subcontract / test (clause).....: N/A	
Address.....: N/A	
Order description.....: CIE 84:1989 Measurement of luminous flux	
Test item particular:	
Classification:	
- main-voltage filament lamp.....:	<input type="checkbox"/>
- other filament lamp.....:	<input type="checkbox"/>
- High-intensity discharge lamps.....:	<input type="checkbox"/>
- lighting-emitting diode (LED) lamps.....:	<input type="checkbox"/>
- compact fluorescent lamps.....:	<input checked="" type="checkbox"/>
- Replaceable	<input type="checkbox"/>
- Integral	<input type="checkbox"/>
- other lamps.....:	<input type="checkbox"/>
- Bulb type.....:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Non-Clear
	<input type="checkbox"/> Indoor general use luminaire
- Luminaries type.....:	<input type="checkbox"/> Other use:
	Specify: LED street lamp
- Lamp cap	E40
Declared data	General product information
Dimmable lamp	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Non-standard condition	N/A
Possible test case verdicts:	
- test case does not apply to the test object:	N(.A.) / not included in the order
- test object does meet the requirement.....:	P(ass)
- test object does not meet the requirement:	F(ail)
Possible suffixes to the verdicts:	
- suffix for detailed information for the client.....:	C(omment)
- suffix for important information for factory inspection.....:	M(anufacturing)

**Copy of marking plate:**

N/A

Test Condition and Method:

Test distance: 2.5 meters between the lamp and the photometric sensor head.

Test method: Test in accordance with CIE publication 121 using Goniophotometer test system.

Burning position: No lampshade was used.

Sampling : Provided by the applicant.

Special notice: The intensity values contained in this report are absolute ones, if otherwise specified.

Ambient temperature: 25.1 °C.

General product information:

N/A

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Table 1	Measurement Electrical Parameters			
Model	Measured Current	Measured Power	Power Factor	Number of sample tested
4U85W2700K6500K	0.6419	87.69	0.5689	#1

Table 2	Photometric Data		
Model	4U85W2700K6500K	Efficacy of the luminaire(lm/w)	67.00
Imax(cd)	646.7	S/MH(C0/180)	3.52
LOR(%)	100.0	S/MH(C90/270)	3.54
Total Flux(lm)	5874.9	η UP, DN(C0-180)	23.0, 28.4
CIE CLASS	DIFFUSE	η UP, DN(C180-360)	22.2, 26.5
η UP (%)	45.2	CIBSE SHR NOM	2.00
η Down(%)	54.8	CIBSE SHR MAX	0.00

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Table 3		Luminous intensity distribution diagram and C0 Plane Isolux Diagram			
Model:		4U85W2700K6500K			
DATA OF LAMP		PHOTOMETRIC DATA Eff: 67.00 lm/W			
MODEL	4U85W2700K6500K	Imax (cd)	646.7	S/MH (C0/180)	3.52
NOMINAL POWER (W)	88	LOR (%)	100.0	S/MH (C90/270)	3.54
RATED VOLTAGE (V)	240	TOTAL FLUX (lm)	5874.9	η UP, DN (C0-180)	23.0, 28.4
NOMINAL FLUX (lm)	5874.94	CIE CLASS	DIFFUSE	η UP, DN (C180-360)	22.2, 26.5
LAMPS INSIDE	1	η up (%)	45.2	CIBSE SHR NOM	2.00
TEST VOLTAGE (V)	240.1	η down (%)	54.8	CIBSE SHR MAX	0.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

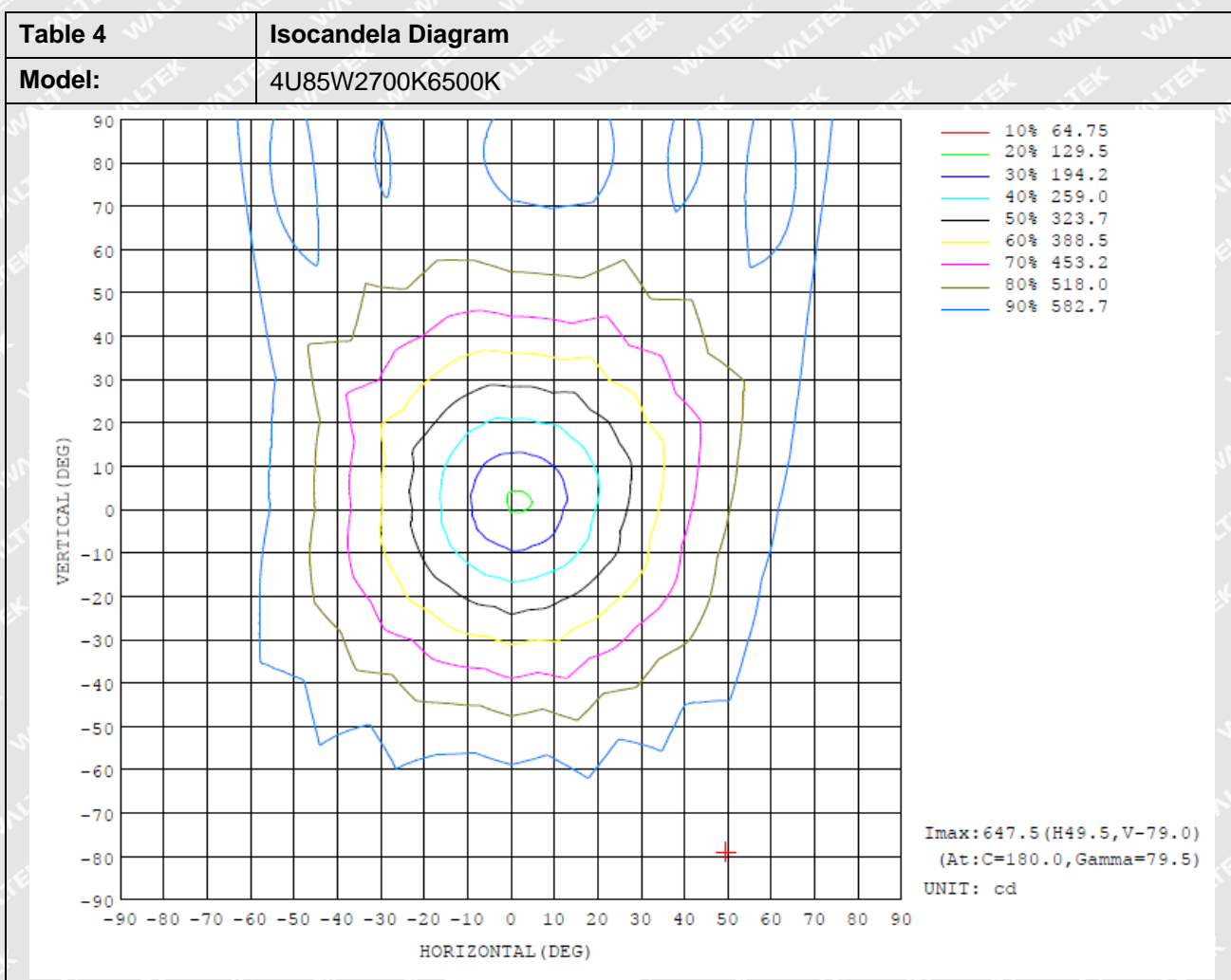
UNIT:cd

AVERAGE BEAM ANGLE (50%): 277.4 DEG

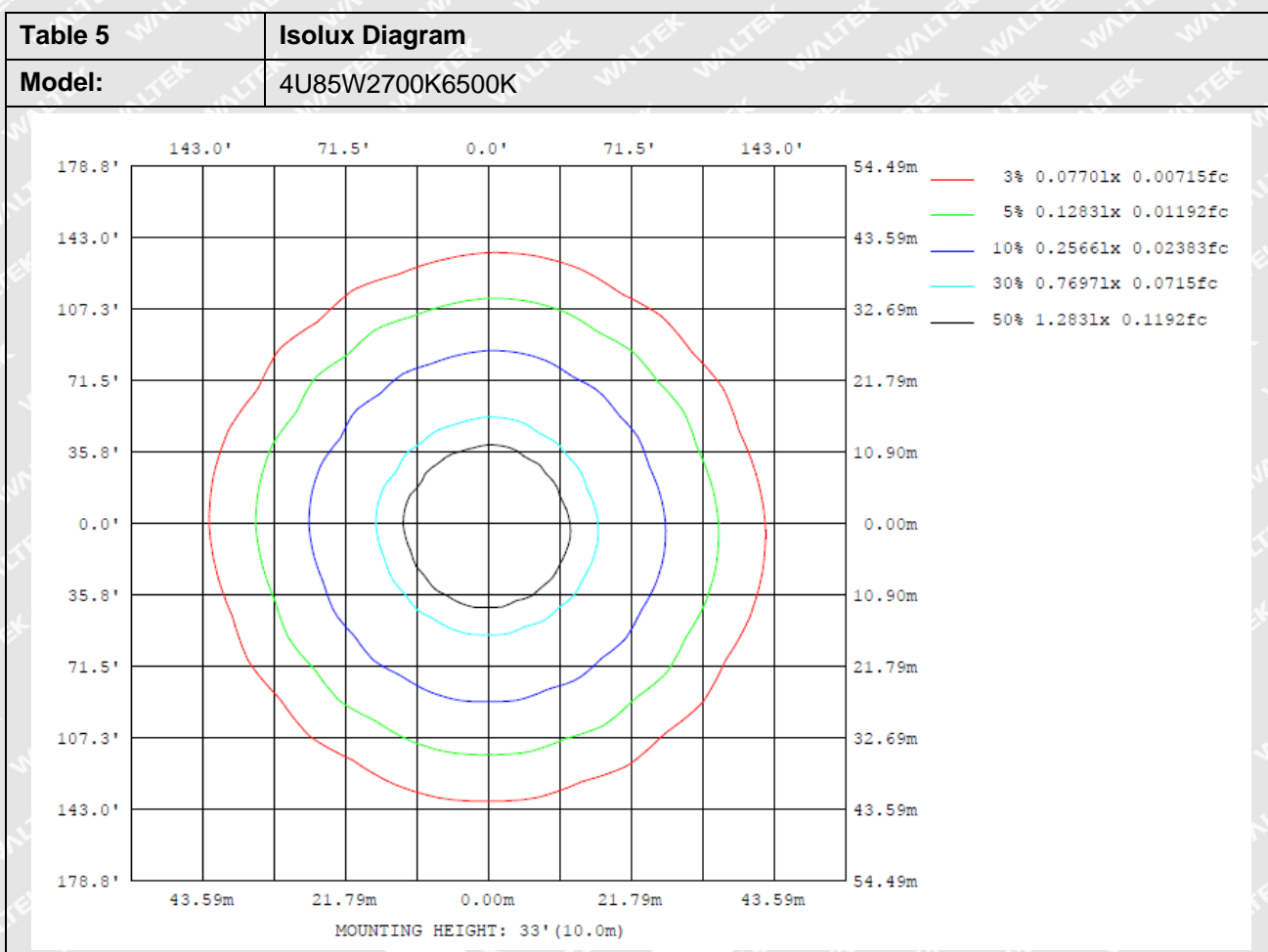
C0 PLANE ISOLUX DIAGRAM (UNIT:lx)

Legend:

- 1.40 (red)
- 1.20 (green)
- 0.9200 (blue)
- 0.6900 (cyan)
- 0.4600 (black)
- 0.2300 (yellow)
- 0.1800 (magenta)
- 0.1200 (olive)
- 0.0920 (dark blue)
- 0.0690 (orange)



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Table 6		Zonal Flux Diagram										
Model:		4U85W2700K6500K										
ZONAL FLUX DIAGRAM:												
y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ zone	Φ total	%lum, lamp
5	137.3	147.4	157.8	161.9	158.9	145.7	134.9	129.8	0- 5	3.285	3.285	0.06,0.06
10	176.2	186.7	200.1	206.1	203.7	184.2	172.8	163.8	5- 10	12.01	15.30	0.26,0.26
15	219.7	230.7	246.2	252.1	249.8	222.4	212.0	203.9	10- 15	24.81	40.11	0.68,0.68
20	264.2	275.5	288.8	298.1	296.9	265.2	254.6	245.8	15- 20	41.56	81.67	1.39,1.39
25	308.1	324.0	335.5	343.5	345.0	308.5	297.5	287.9	20- 25	62.11	143.8	2.45,2.45
30	352.2	369.0	379.1	387.7	391.5	350.2	341.2	329.9	25- 30	86.08	229.9	3.91,3.91
35	397.4	414.9	425.1	430.1	436.6	391.7	383.5	370.4	30- 35	112.8	342.7	5.83,5.83
40	439.3	455.5	464.9	468.8	478.2	427.8	422.9	409.1	35- 40	141.5	484.2	8.24,8.24
45	478.7	492.8	504.0	504.2	516.2	461.2	460.4	444.7	40- 45	171.1	655.2	11.2,11.2
50	514.8	525.8	537.5	535.2	550.0	489.2	493.2	477.1	45- 50	200.6	855.8	14.6,14.6
55	546.9	553.4	567.8	561.6	579.2	512.9	523.4	505.4	50- 55	229.1	1085	18.5,18.5
60	574.4	577.1	593.0	583.9	603.2	532.9	548.6	529.9	55- 60	255.6	1340	22.8,22.8
65	596.9	595.8	612.8	600.6	621.8	548.5	568.7	549.9	60- 65	279.2	1620	27.6,27.6
70	614.9	609.3	627.2	612.3	635.2	559.8	584.1	565.4	65- 70	299.1	1919	32.7,32.7
75	627.5	617.8	636.4	618.9	643.5	566.6	594.7	575.9	70- 75	314.6	2233	38,38
80	634.4	620.8	640.2	620.6	646.6	569.5	600.4	582.0	75- 80	325.2	2558	43.5,43.5
85	636.2	619.4	638.8	617.9	644.5	568.7	600.9	583.3	80- 85	331.0	2889	49.2,49.2
90	632.4	613.6	633.1	610.4	636.7	563.6	596.4	579.9	85- 90	331.8	3221	54.8,54.8
95	623.6	602.6	621.6	598.4	624.7	554.9	587.6	572.3	90- 95	327.9	3549	60.4,60.4
100	609.4	587.9	605.3	581.2	606.7	541.6	574.0	560.2	95-100	318.9	3868	65.8,65.8
105	589.4	567.3	583.3	559.1	583.9	523.9	554.7	543.2	100-105	304.9	4173	71,71
110	564.4	542.3	556.5	531.9	555.7	501.1	530.5	520.8	105-110	286.2	4459	75.9,75.9
115	534.5	513.2	524.4	500.5	522.7	474.0	501.7	493.5	110-115	263.4	4723	80.4,80.4
120	499.8	479.7	488.4	465.4	486.1	444.1	468.7	462.6	115-120	237.6	4960	84.4,84.4
125	461.8	443.7	448.5	426.5	445.4	410.0	432.0	428.3	120-125	209.5	5170	88,88
130	419.0	403.1	404.4	384.0	401.6	373.0	392.3	390.8	125-130	180.2	5350	91.1,91.1
135	373.8	359.8	358.1	338.6	354.4	332.5	349.0	350.0	130-135	150.3	5500	93.6,93.6
140	325.2	313.1	308.4	290.9	305.3	288.6	303.7	306.7	135-140	121.1	5621	95.7,95.7
145	275.5	263.9	257.5	240.9	253.7	243.5	256.3	261.0	140-145	93.27	5714	97.3,97.3
150	223.2	212.7	204.3	189.2	200.8	195.7	207.6	213.6	145-150	67.82	5782	98.4,98.4
155	171.1	160.4	150.0	137.6	147.4	146.9	158.5	165.1	150-155	45.53	5828	99.2,99.2
160	119.3	108.4	98.77	88.76	98.53	99.80	112.5	117.2	155-160	27.25	5855	99.7,99.7
165	71.62	62.65	54.07	46.08	53.42	57.22	69.20	72.25	160-165	13.70	5869	99.9,99.9
170	33.83	27.28	19.42	14.49	19.49	24.55	32.82	35.31	165-170	5.147	5874	100,100
175	6.735	2.696	0.1494	0.0256	0.1275	0.181	7.017	8.636	170-175	1.036	5875	100,100
180	0.0330	0.0307	0.0288	0.0290	0.0325	0.0311	0.0311	0.0297	175-180	0.0301	5875	100,100
DEG		LUMINOUS INTENSITY:cd								UNIT:lm		

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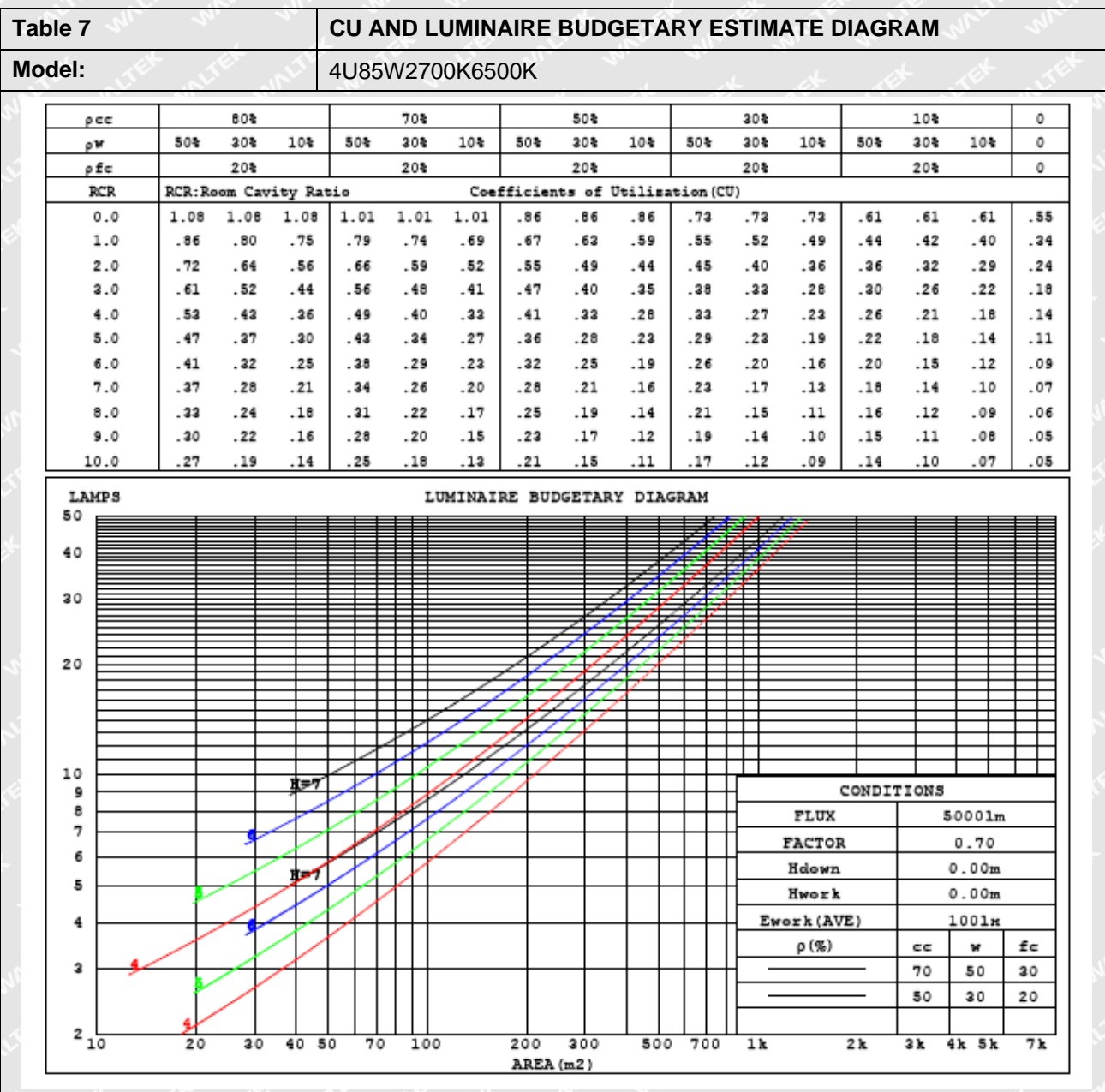
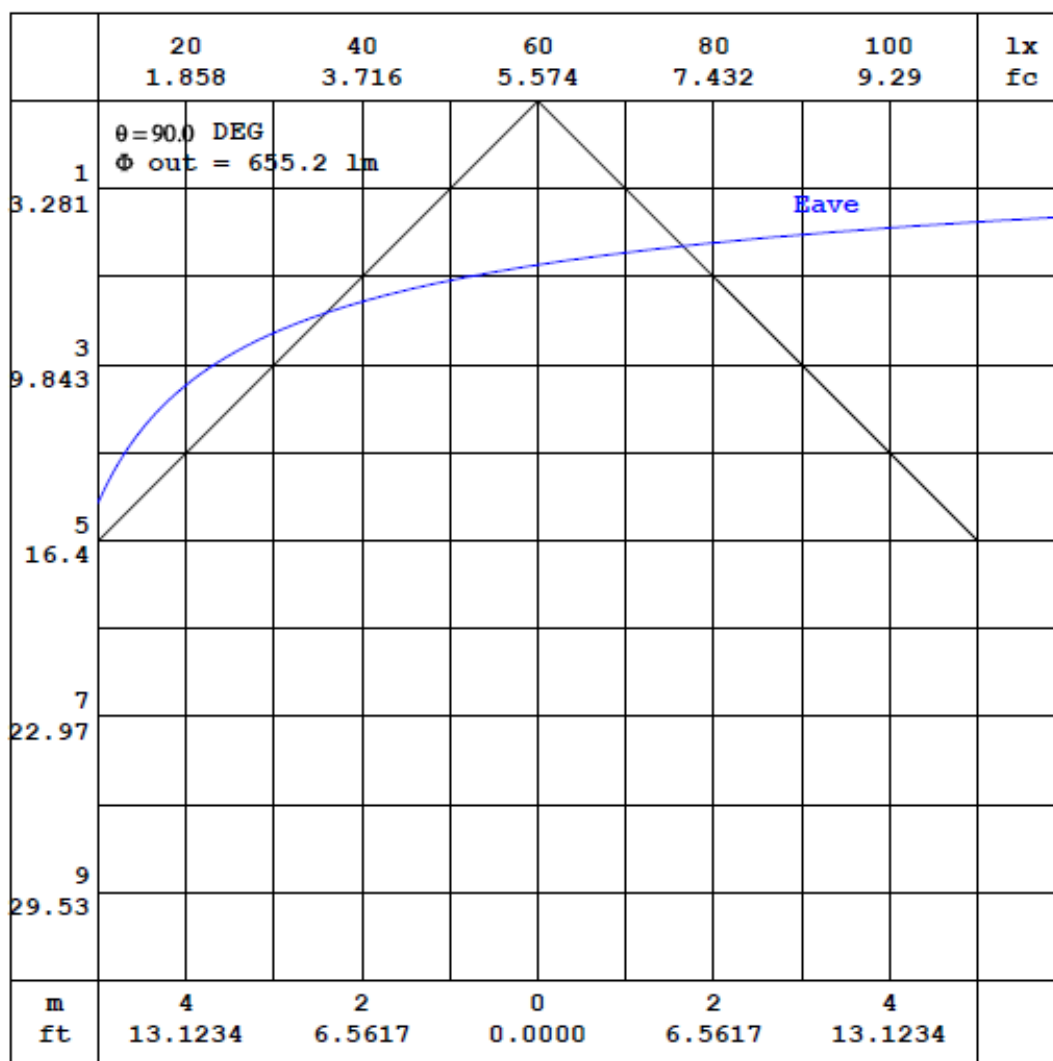




Table 8	AAI CURVES
Model:	4U85W2700K6500K



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



Table 9		Luminous Distribution Intensity Data 1																	
Model:		4U85W2700K6500K																	
Table--1		UNIT: cd																	
C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
5	137	138	141	142	146	148	152	153	156	158	160	161	162	162	162	162	162	161	159
10	176	177	180	179	185	189	196	197	199	200	204	205	206	206	206	206	207	205	204
15	220	223	223	226	228	233	240	244	245	246	250	249	251	253	251	252	253	251	250
20	264	267	266	270	273	278	286	289	294	289	297	294	297	301	295	300	299	297	297
25	308	316	309	317	322	326	333	333	341	336	344	342	342	349	338	347	343	344	345
30	352	361	353	361	368	370	378	373	388	379	389	386	386	395	381	393	386	389	392
35	397	407	399	405	415	414	423	413	433	425	434	431	427	439	421	436	427	432	437
40	439	449	442	445	457	454	464	450	474	465	474	470	464	480	457	477	464	473	478
45	479	489	482	482	497	489	503	485	513	504	512	508	498	517	491	515	498	510	516
50	515	524	520	514	532	519	538	517	547	538	544	540	528	550	520	548	528	543	550
55	547	555	551	542	562	545	568	545	577	568	573	568	552	578	545	576	553	571	579
60	574	582	578	564	588	566	593	570	602	593	596	591	573	601	566	600	574	595	603
65	597	604	600	582	609	583	614	590	622	613	615	608	587	619	582	618	590	613	622
70	615	621	616	593	624	595	629	605	635	627	628	621	597	632	593	631	600	626	635
75	627	632	627	600	633	602	638	613	643	636	636	628	601	639	599	638	604	632	644
80	634	638	633	601	638	604	642	617	645	640	639	631	601	641	600	640	604	634	647
85	636	639	633	598	637	602	641	616	643	639	637	628	596	639	597	638	600	632	645
90	632	635	630	592	632	595	636	613	638	633	630	622	589	632	589	630	594	626	637
95	624	625	621	583	622	583	625	605	626	622	618	611	579	619	578	618	583	614	625
100	609	611	607	569	607	569	609	593	611	605	601	595	563	602	561	601	567	598	607
105	589	590	588	548	586	548	587	574	588	583	579	573	542	579	539	578	546	575	584
110	564	565	563	523	560	525	560	551	560	557	552	547	515	551	513	549	519	548	556
115	534	534	533	494	529	497	528	521	528	524	520	516	484	519	482	517	488	516	523
120	500	499	498	460	494	466	492	488	491	488	484	480	449	482	449	480	453	479	486
125	462	461	461	422	456	432	453	450	451	448	444	440	411	442	411	439	415	439	445
130	419	418	418	382	412	395	409	408	407	404	399	396	370	397	371	395	374	395	402
135	374	372	372	339	366	354	363	363	360	358	352	350	325	350	327	348	331	349	354
140	325	323	323	295	316	310	314	315	311	308	302	301	279	300	282	299	285	300	305
145	276	271	273	249	266	262	263	263	259	257	251	249	231	248	234	247	237	249	254
150	223	219	221	203	213	212	209	210	206	204	197	197	182	194	184	194	187	196	201
155	171	166	168	156	160	160	155	156	153	150	144	143	134	141	135	140	138	142	147
160	119	115	116	110	108	108	104	103	101	98.8	94.8	93.1	88.0	89.9	87.6	89.5	89.9	91.4	98.5
165	71.6	69.5	68.7	66.0	63.4	61.9	58.5	58.0	56.0	54.1	50.8	49.8	47.3	47.1	45.1	46.6	46.8	48.1	53.4
170	33.8	32.1	30.9	29.8	28.1	26.4	24.2	22.7	20.8	19.4	17.3	16.6	15.3	15.1	13.9	14.1	14.1	15.3	19.5
175	6.74	5.86	5.25	4.39	3.23	2.16	1.26	0.87	0.44	0.15	0.04	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.13
180	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03



Table 10		Luminous Distribution Intensity Data 2																
Model:		4U85W2700K6500K																
Table--2		UNIT: cd																
γ	C (DBG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
0		128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
5		157	153	151	147	145	141	139	136	135	132	132	130	131	129	131	130	133
10		198	194	191	186	183	176	175	173	173	167	167	164	165	163	167	167	170
15		243	239	230	224	221	215	214	212	212	207	208	203	205	203	208	210	212
20		287	284	271	267	264	255	256	250	255	247	251	242	248	244	251	250	257
25		332	331	309	312	305	299	297	292	297	290	294	281	292	284	294	290	301
30		380	375	344	353	347	341	338	334	341	334	337	320	335	325	338	330	346
35		426	419	381	396	387	382	377	375	383	376	379	358	377	364	381	369	389
40		467	459	413	434	421	420	412	413	423	417	418	395	417	401	422	407	430
45		507	495	445	470	453	456	447	448	460	454	455	429	454	435	460	442	469
50		540	529	473	502	476	487	476	480	493	488	488	461	488	466	494	474	503
55		570	556	499	529	497	515	502	508	523	518	518	489	517	494	525	502	534
60		595	579	521	552	514	538	523	533	549	544	542	513	543	517	552	527	561
65		613	597	538	570	527	557	540	552	569	565	563	532	563	537	574	548	582
70		627	611	550	583	537	571	551	567	584	581	578	547	579	551	590	564	599
75		636	618	557	591	542	580	557	576	595	592	588	557	591	561	602	574	610
80		640	621	560	595	544	584	556	580	600	599	594	562	597	567	608	579	615
85		638	620	560	594	543	584	553	579	601	600	595	563	598	569	609	578	616
90		631	614	558	589	538	579	546	575	596	597	591	560	594	565	606	575	612
95		619	604	552	580	530	570	537	568	588	589	583	555	587	558	598	569	604
100		603	588	541	565	518	556	523	555	574	576	571	545	574	547	585	558	591
105		580	567	524	546	501	537	504	538	555	558	553	531	556	530	567	542	573
110		553	541	503	522	480	513	481	515	531	535	530	510	533	509	543	520	549
115		521	510	476	492	456	485	454	487	502	507	503	485	505	482	514	494	520
120		485	476	447	461	428	452	422	456	469	475	471	456	473	452	481	463	486
125		446	436	412	424	396	417	388	420	432	440	435	423	438	418	445	429	449
130		403	393	375	384	362	377	352	382	392	400	395	387	399	383	405	391	409
135		356	347	334	341	324	336	313	341	349	358	353	347	357	343	362	351	365
140		307	298	290	295	283	292	273	297	304	312	308	305	312	302	316	308	319
145		256	248	243	248	239	246	232	251	256	265	260	260	265	257	269	263	271
150		203	196	195	199	193	199	191	205	208	216	212	213	216	211	219	216	221
155		150	145	146	148	146	150	149	156	158	166	163	165	167	164	170	168	170
160		98.2	97.8	97.4	100	99.2	103	105	109	113	117	115	117	118	117	120	120	120
165		53.9	55.7	55.1	56.8	57.7	61.1	62.8	65.4	69.2	71.1	71.0	71.8	72.1	72.4	73.5	74.6	73.4
170		20.2	22.2	22.4	24.2	24.9	27.6	28.6	30.8	32.8	34.5	35.2	35.7	35.1	35.5	35.8	36.3	35.2
175		0.25	0.82	1.72	2.86	3.51	4.53	5.09	5.97	7.02	7.88	8.29	8.80	8.61	8.66	8.53	8.30	7.72
180		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

**Attachment 1: Equipment List**

Equipment	Model/Type	Cal. Due Date
AC power supply	EVERFINE TPS-500B	2016-03-05
Power meter	EVERFINE PF2010A-V1-CAN	2016-03-05
Temperature & Humidity Datalogger	Testo 608-H1	2016-03-05
Digital Power Meter	EVERFINE PF2010A-V1	2016-03-05
Goniophotometer	EVERFINE GO R5000-2M2D	2016-03-05
Standard lamp	EVERFINE D908	2016-03-05



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Attachment 2: Photo document

Model: 4U85W2700K6500K



Photo 1



Photo 2

===== End of Report =====