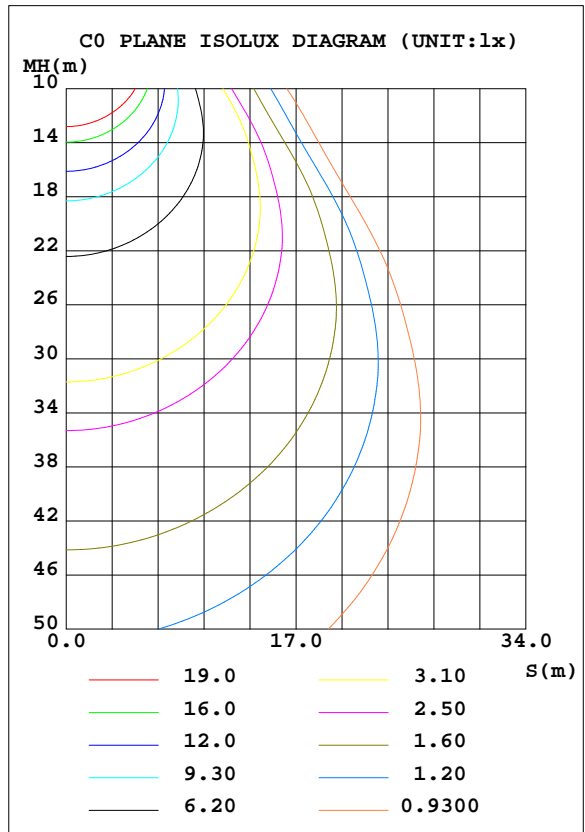
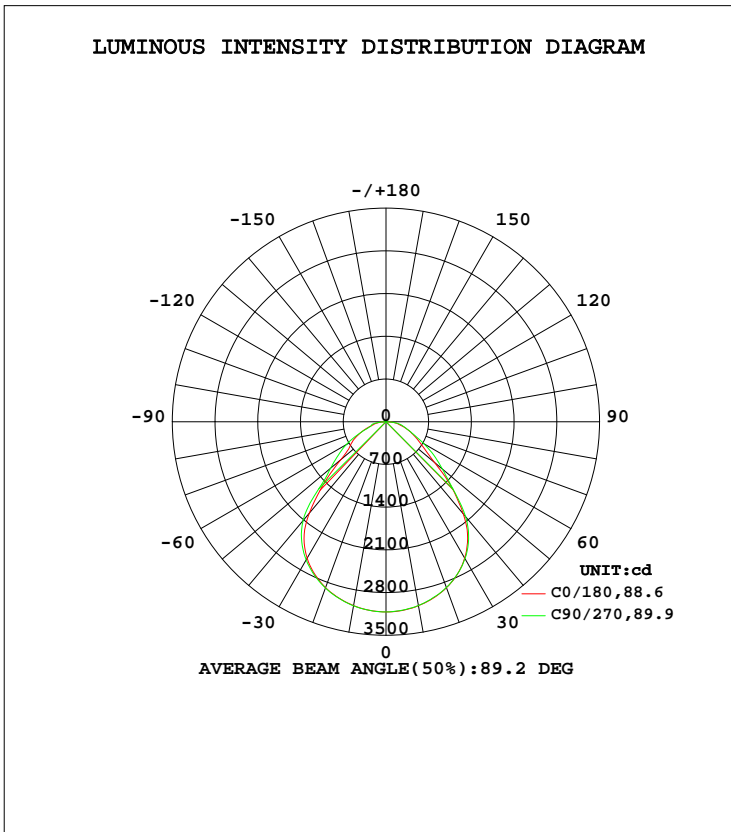


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.45 lm/W			
MODEL	HR-PLF060-060	I _{max} (cd)	3117	S/MH(C0/180)	1.23
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	6772.9	η UP, DN(C0-180)	0.1,49.7
NOMINAL FLUX(lm)	6772.89	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.2,50.0
LAMPS INSIDE	1	η up(%)	0.3	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	99.7	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3061	3059	3059	3056	3059	3062	3062	3062	0- 10	294.8	294.8	4.35,4.35
20	2895	2889	2890	2885	2894	2895	2901	2897	10- 20	843.8	1139	16.8,16.8
30	2580	2575	2590	2583	2584	2600	2616	2603	20- 30	1271	2410	35.6,35.6
40	1972	2015	2028	1984	1955	2036	2115	2071	30- 40	1465	3874	57.2,57.2
50	1043	1203	1207	1068	971.4	1211	1185	1119	40- 50	1183	5057	74.7,74.7
60	610.4	700.8	711.8	669.9	628.0	690.1	755.1	648.5	50- 60	776.0	5833	86.1,86.1
70	375.3	368.9	381.8	393.3	363.9	344.1	337.6	423.9	60- 70	508.5	6342	93.6,93.6
80	196.1	221.3	226.7	193.6	182.3	225.7	218.9	212.2	70- 80	304.6	6646	98.1,98.1
90	1.056	1.092	0.9981	0.6743	21.97	0.5176	13.37	15.34	80- 90	109.2	6755	99.7,99.7
100	0.7170	0.4691	0.5470	0.4720	0.6632	0.6654	0.6675	2.421	90-100	3.802	6759	99.8,99.8
110	0.9264	0.4959	0.6060	0.4937	1.110	1.257	1.260	1.038	100-110	0.7618	6760	99.8,99.8
120	1.136	0.5914	0.6650	0.5154	2.070	2.098	2.072	2.076	110-120	1.075	6761	99.8,99.8
130	2.065	1.699	2.213	1.993	3.330	2.736	2.590	2.811	120-130	1.640	6763	99.8,99.8
140	3.546	2.957	3.770	2.881	4.600	3.552	4.364	3.920	130-140	2.389	6765	99.9,99.9
150	5.008	4.658	5.321	5.095	5.546	5.104	5.276	5.323	140-150	2.836	6768	99.9,99.9
160	5.583	5.841	5.768	6.012	6.584	6.287	6.361	6.284	150-160	2.600	6770	100,100
170	6.948	7.096	7.029	6.430	6.875	7.098	7.025	6.840	160-170	1.795	6772	100,100
180	7.466	7.246	7.099	7.022	7.319	7.468	7.176	7.097	170-180	0.6765	6773	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 4531 lm

%lum = 66.9%
%lamp = 66.9%

Conical surface Flux(120deg): 5833 lm

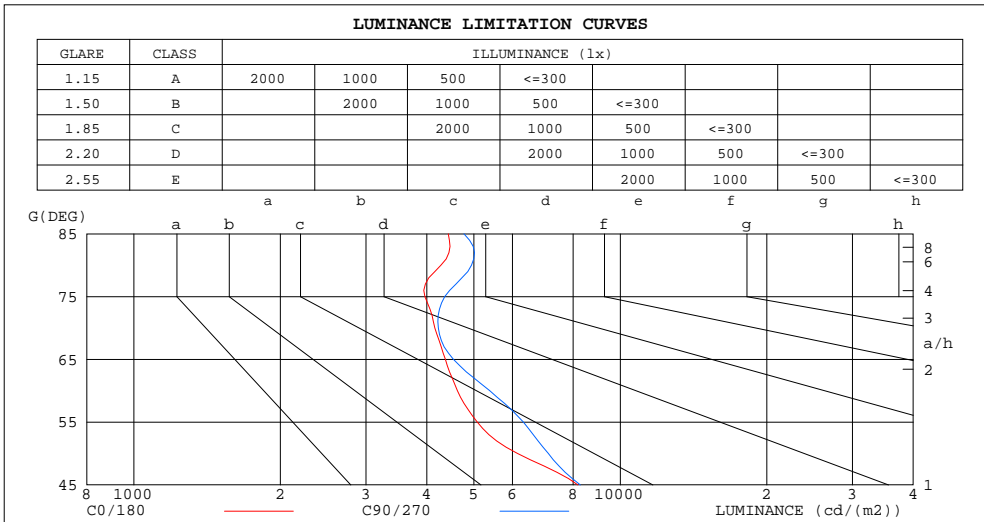
%lum = 86.1%
%lamp = 86.1%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-04-01

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:65.7%
Test Distance:26.000m [K=1.3952]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4429	4770
80	4276	4941
75	3965	4354
70	4155	4226
65	4370	4538
60	4623	5389
55	5079	6319
50	6146	7109
45	8181	8276

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

WEC AND CCEC

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.273	.155	.049	.266	.152	.048	.253	.145	.046	.241	.139	.045	.229	.133	.043	
2.0	.258	.141	.043	.252	.139	.043	.240	.133	.041	.229	.129	.040	.220	.124	.039	
3.0	.240	.128	.038	.235	.126	.038	.225	.122	.037	.216	.118	.036	.207	.115	.035	
4.0	.224	.116	.034	.219	.115	.034	.210	.112	.033	.202	.109	.033	.194	.106	.032	
5.0	.209	.107	.031	.205	.105	.031	.197	.103	.030	.190	.100	.030	.183	.098	.029	
6.0	.195	.098	.028	.192	.097	.028	.185	.095	.028	.178	.093	.027	.172	.091	.027	
7.0	.183	.091	.026	.180	.090	.026	.174	.088	.025	.168	.086	.025	.162	.084	.025	
8.0	.172	.084	.024	.169	.083	.024	.164	.082	.023	.159	.080	.023	.154	.079	.023	
9.0	.163	.079	.022	.160	.078	.022	.155	.077	.022	.150	.075	.022	.146	.074	.021	
10.0	.154	.074	.020	.151	.073	.020	.147	.072	.020	.142	.071	.020	.138	.070	.020	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.192	.192	.192	.164	.164	.164	.112	.112	.112	.064	.064	.064	.021	.021	.021	
1.0	.180	.158	.139	.154	.136	.120	.105	.094	.083	.061	.054	.048	.019	.017	.016	
2.0	.170	.134	.104	.145	.115	.090	.100	.080	.063	.057	.046	.037	.018	.015	.012	
3.0	.161	.116	.080	.138	.100	.070	.095	.070	.049	.055	.041	.029	.018	.013	.009	
4.0	.153	.102	.064	.131	.089	.056	.090	.062	.039	.052	.036	.023	.017	.012	.008	
5.0	.145	.092	.052	.125	.079	.046	.086	.055	.032	.050	.033	.019	.016	.011	.006	
6.0	.138	.083	.044	.119	.072	.038	.082	.050	.027	.048	.030	.016	.015	.010	.005	
7.0	.132	.076	.037	.113	.066	.033	.078	.046	.023	.045	.027	.014	.015	.009	.005	
8.0	.126	.070	.032	.108	.061	.028	.075	.043	.020	.044	.025	.012	.014	.008	.004	
9.0	.120	.065	.029	.103	.057	.025	.072	.040	.018	.042	.024	.011	.013	.008	.003	
10.0	.115	.061	.026	.099	.053	.022	.069	.037	.016	.040	.022	.009	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm										
NAME:			TYPE:LED				WEIGHT:N/A			
SPEC.:N/A			DIM.:				SERIAL No.:N/A			
MFR.: 深圳市海润光电有限公司			SUR.:0.29*0.29*3.14				Shielding Angle:N/A			
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	18.3	19.7	18.6	19.9	20.1	18.2	19.6	18.4	19.8	20.0
3H	19.3	20.5	19.6	20.8	21.0	19.1	20.4	19.4	20.6	20.8
4H	19.7	20.9	20.0	21.2	21.4	19.6	20.8	19.9	21.1	21.3
6H	20.2	21.3	20.5	21.6	21.8	20.1	21.3	20.5	21.5	21.8
8H	20.4	21.5	20.7	21.7	22.0	20.4	21.5	20.7	21.7	22.0
12H	20.5	21.6	20.9	21.8	22.1	20.5	21.6	20.9	21.9	22.2
4H 2H	18.6	19.8	18.9	20.1	20.3	18.5	19.7	18.9	20.0	20.2
3H	19.9	20.9	20.2	21.2	21.5	19.7	20.7	20.0	21.0	21.3
4H	20.5	21.5	20.9	21.8	22.1	20.3	21.3	20.7	21.6	21.9
6H	21.1	22.0	21.5	22.3	22.7	21.0	21.8	21.4	22.2	22.5
8H	21.4	22.2	21.8	22.6	22.9	21.3	22.1	21.7	22.5	22.8
12H	21.6	22.3	22.0	22.7	23.1	21.6	22.3	22.0	22.7	23.1
8H 4H	20.8	21.5	21.2	21.9	22.3	20.6	21.4	21.0	21.7	22.1
6H	21.6	22.2	22.0	22.7	23.1	21.4	22.1	21.9	22.5	22.9
8H	22.0	22.6	22.5	23.0	23.4	21.8	22.4	22.3	22.9	23.3
12H	22.3	22.8	22.8	23.3	23.7	22.2	22.7	22.7	23.2	23.6
12H 4H	20.8	21.5	21.2	21.9	22.3	20.6	21.3	21.1	21.7	22.1
6H	21.7	22.3	22.1	22.7	23.1	21.5	22.1	22.0	22.5	23.0
8H	22.1	22.6	22.6	23.1	23.6	22.0	22.5	22.5	22.9	23.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.4					+ 0.3 / - 0.4				
1.5H	+ 0.1 / - 0.5					+ 0.2 / - 0.2				
2.0H	+ 0.5 / - 0.7					+ 0.6 / - 0.4				

CIE Pub.117, 6773 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 6.6)

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

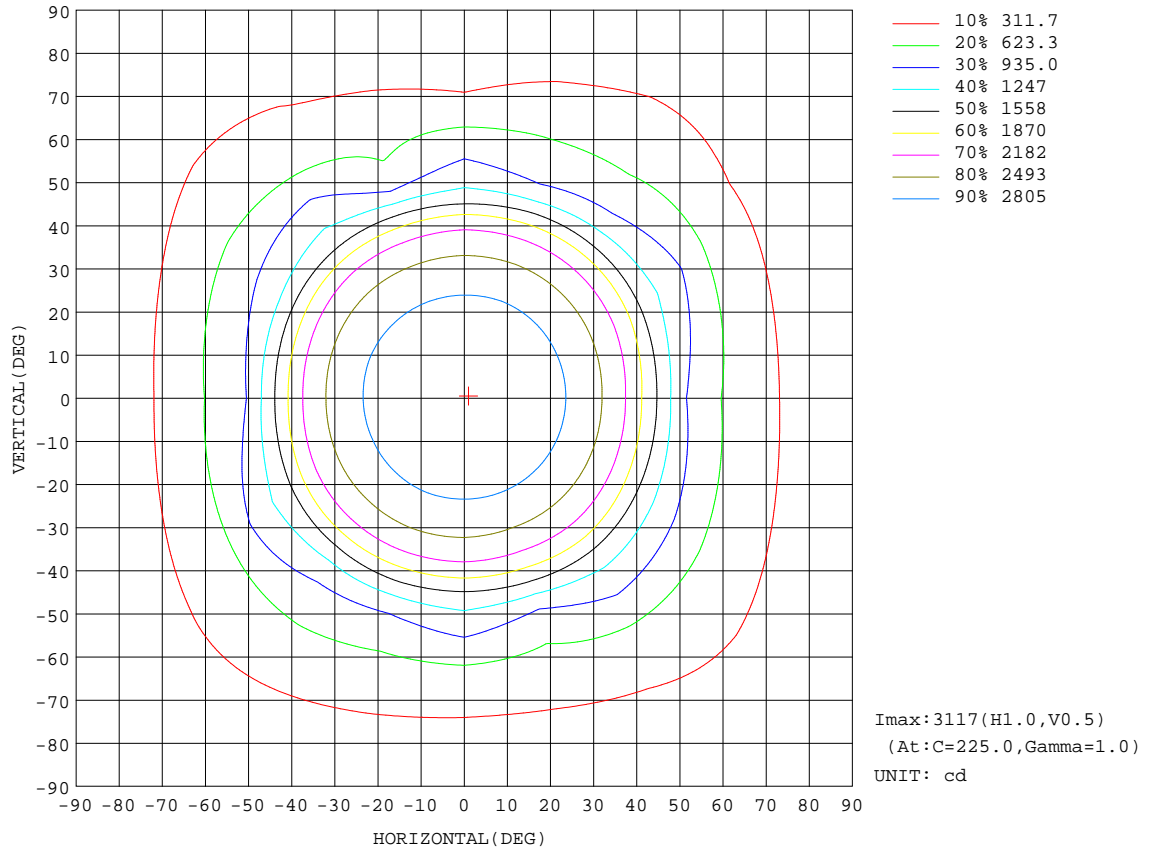
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	65	55	49	64	54	48	63	54	48	43
0.80	75	65	58	74	64	58	72	63	58	52
1.00	82	73	67	81	72	66	79	73	66	59
1.25	89	80	74	87	79	73	85	78	72	66
1.50	93	85	79	92	84	78	89	82	77	71
2.00	99	92	86	97	90	85	94	88	84	77
2.50	102	95	90	100	94	89	96	91	87	80
3.00	105	99	94	103	97	93	99	95	91	83
4.00	108	103	99	106	102	98	102	98	95	87
5.00	110	106	103	108	104	101	103	101	98	89
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

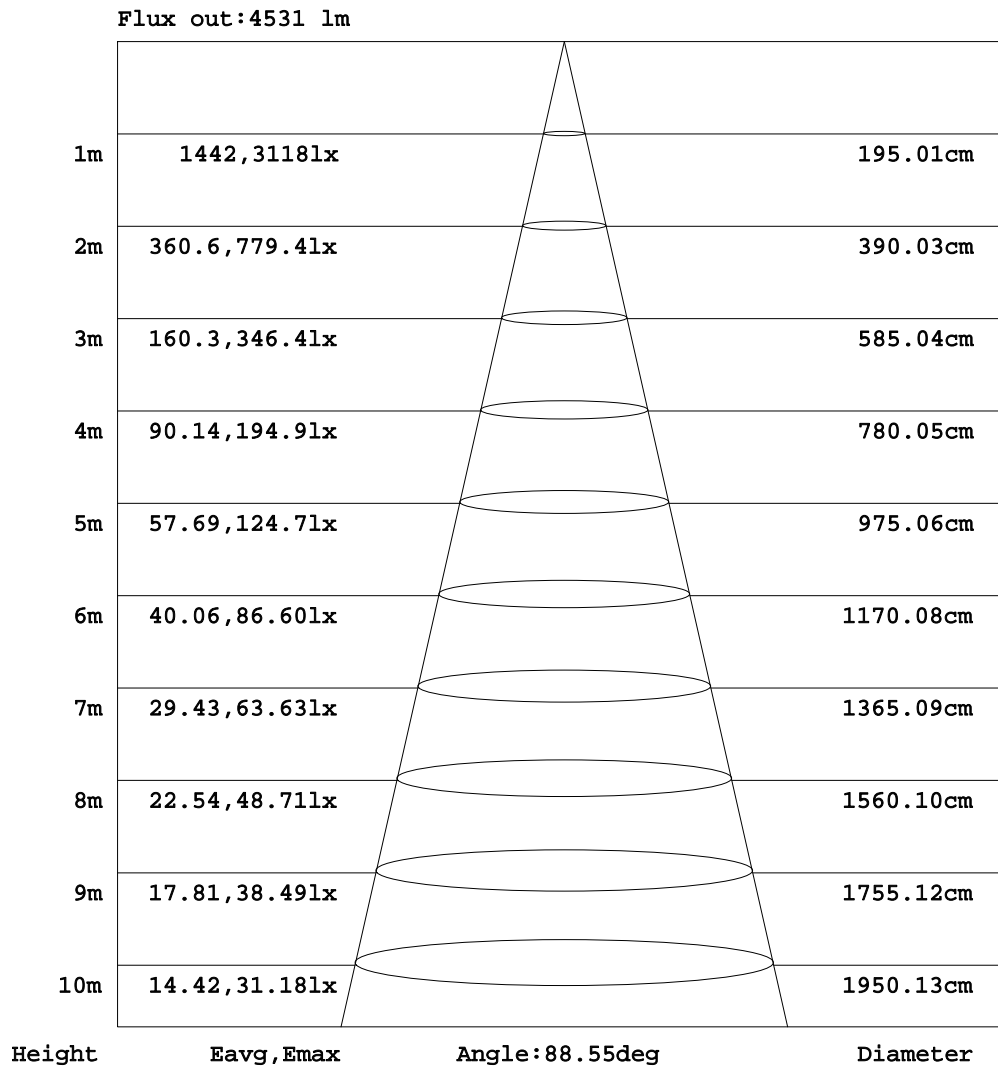


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators: William
 Test Date: 2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity: 65.7%
 Test Distance: 26.000m [K=1.3952]
 Remarks:

AAI Figure

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

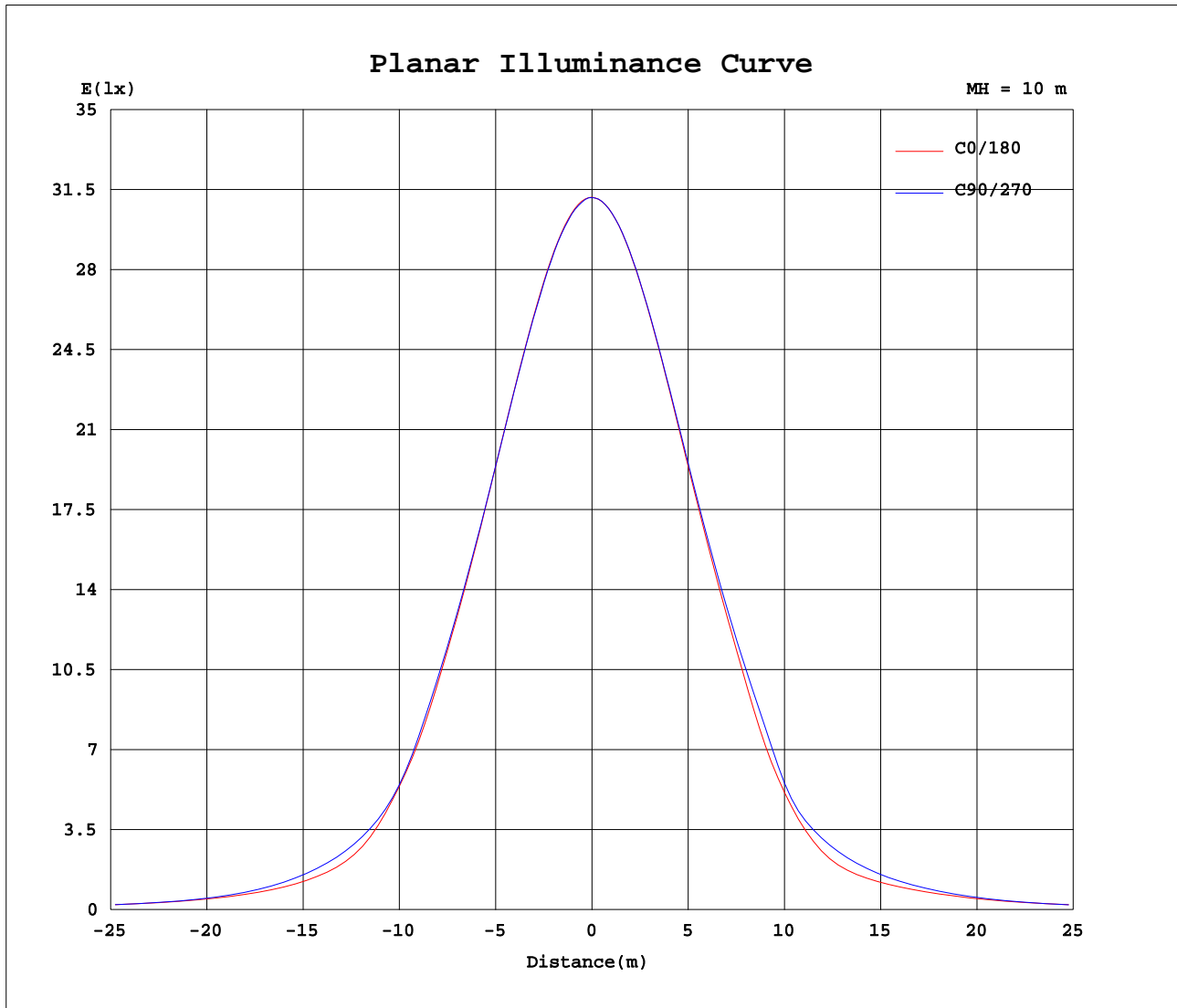


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.5DEG
Operators: William
Test Date: 2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity: 65.7%
Test Distance: 26.000m [K=1.3952]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.02V I:0.2698A P:58.162W PF:0.9799 Freq:50.01Hz Lamp Flux:6772.89x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: 深圳市海润光电有限公司	SUR.:0.29*0.29*3.14	Shielding Angle:N/A

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116	3116			
5	3103	3102	3102	3099	3100	3101	3101	3099	3102	3102	3103	3103	3102	3104	3103	3102			
10	3061	3061	3059	3058	3059	3059	3056	3054	3059	3061	3062	3061	3062	3063	3062	3063			
15	2993	2991	2990	2984	2985	2986	2981	2982	2990	2990	2992	2992	2993	2996	2993	2991			
20	2895	2891	2889	2887	2890	2890	2885	2885	2894	2894	2895	2899	2901	2903	2897	2894			
25	2763	2758	2755	2755	2760	2761	2754	2754	2760	2766	2765	2770	2776	2778	2770	2764			
30	2580	2575	2575	2577	2590	2588	2583	2578	2584	2591	2600	2603	2616	2614	2603	2591			
35	2332	2336	2339	2336	2360	2356	2346	2349	2341	2356	2375	2386	2407	2403	2379	2362			
40	1972	1989	2015	1991	2028	2003	1984	1991	1955	1989	2036	2060	2115	2100	2071	2048			
45	1528	1526	1539	1521	1546	1524	1463	1495	1451	1468	1501	1516	1567	1586	1554	1562			
50	1043	1178	1203	1020	1207	1077	1068	1215	971	1099	1211	952	1185	1062	1119	1233			
55	769	901	946	738	957	797	824	968	731	881	973	680	956	789	810	1006			
60	610	688	701	596	712	641	670	675	628	704	690	577	755	662	648	748			
65	488	522	496	480	507	511	509	457	496	532	466	527	529	566	526	501			
70	375	414	369	379	382	409	393	352	364	401	344	403	338	444	424	351			
75	271	310	295	271	298	297	292	294	244	301	304	236	252	302	321	276			
80	196	216	221	186	227	192	194	198	182	202	226	165	219	205	212	219			
85	102	110	108	102	110	95.6	87.1	92.4	90.9	98.0	89.3	104	106	106	99.8	111			
90	1.06	1.02	1.09	0.87	1.00	0.81	0.67	0.69	22.0	22.5	0.52	11.6	13.4	14.8	15.3	16.1			
95	0.61	0.51	0.50	0.45	0.52	0.46	0.46	0.51	8.56	6.81	0.52	4.66	2.72	6.91	7.97	8.38			
100	0.72	0.50	0.47	0.47	0.55	0.48	0.47	0.54	0.66	0.59	0.67	1.20	0.67	1.60	2.42	0.66			
105	0.82	0.48	0.48	0.50	0.58	0.51	0.48	0.57	0.81	0.67	0.81	0.74	0.89	0.82	0.82	0.81			
110	0.93	0.47	0.50	0.53	0.61	0.53	0.49	0.61	1.11	0.96	1.26	0.96	1.26	1.18	1.04	1.11			
115	1.03	0.46	0.51	0.55	0.64	0.56	0.50	0.64	1.63	1.48	1.63	1.41	1.55	1.63	1.41	1.62			
120	1.14	0.52	0.59	0.58	0.66	0.58	0.52	0.88	2.07	2.22	2.10	1.85	2.07	1.95	2.08	2.07			
125	1.35	1.26	1.11	1.18	1.63	1.04	1.11	1.40	2.59	2.59	2.22	1.96	2.30	2.04	2.48	2.52			
130	2.06	2.29	1.70	2.06	2.21	1.70	1.99	2.29	3.33	3.18	2.74	2.30	2.59	2.44	2.81	3.11			
135	2.51	2.44	2.44	2.44	3.10	2.51	2.49	2.81	3.99	3.69	3.25	3.26	3.99	3.48	3.40	3.62			
140	3.55	3.54	2.96	3.62	3.77	3.55	2.88	3.62	4.60	4.29	3.55	3.99	4.36	4.29	3.92	4.36			
145	4.66	4.29	3.77	4.65	4.66	4.58	4.06	4.14	5.10	4.73	4.37	4.66	4.96	4.66	4.88	4.89			
150	5.01	5.02	4.66	5.02	5.32	4.96	5.10	4.80	5.55	5.40	5.10	5.25	5.28	5.48	5.32	5.62			
155	5.30	5.25	5.25	5.18	5.62	5.32	5.91	5.36	6.14	6.06	5.69	6.03	5.59	5.90	5.69	6.02			
160	5.58	5.61	5.84	5.76	5.77	5.62	6.01	5.54	6.58	6.51	6.29	6.24	6.36	6.29	6.28	6.22			
165	5.91	5.98	6.06	6.13	6.21	5.99	6.04	5.99	6.73	6.74	6.60	6.40	6.80	6.59	6.54	6.33			
170	6.95	6.94	7.10	7.09	7.03	7.03	6.43	7.02	6.88	6.92	7.10	6.80	7.03	6.79	6.84	6.80			
175	7.24	7.31	7.10	7.17	7.08	7.12	6.80	7.17	7.29	7.54	7.54	7.17	7.03	7.03	7.10	7.03			
180	7.47	7.46	7.25	7.17	7.10	7.10	7.02	7.32	7.32	7.46	7.47	7.24	7.18	7.10	7.10	7.10			

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-04-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:65.7%
 Test Distance:26.000m [K=1.3952]
 Remarks: