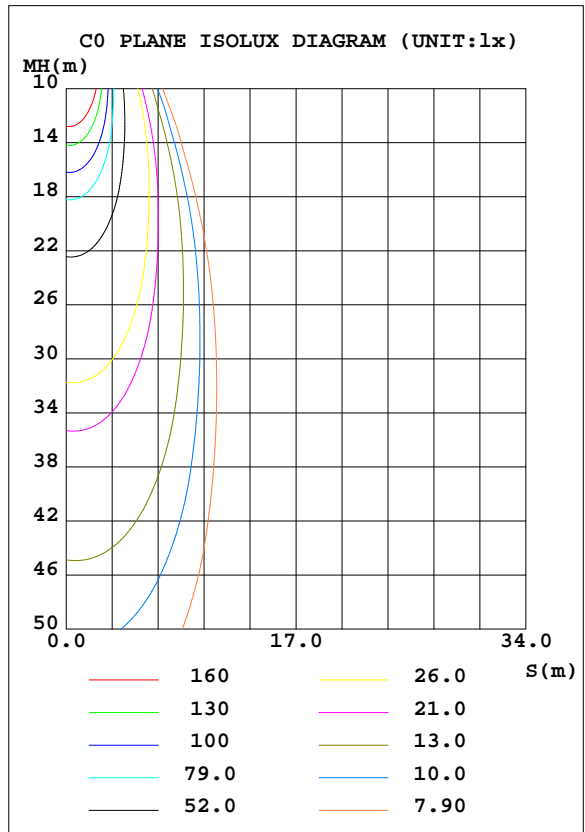
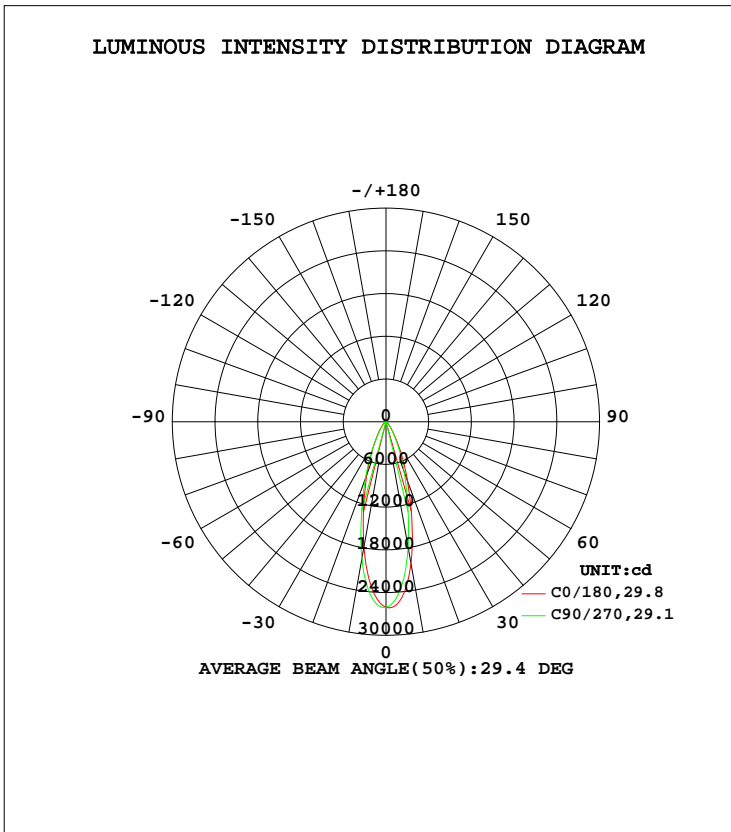


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.78 lm/W			
MODEL	FUTC07	I _{max} (cd)	26158	S/MH(C0/180)	0.47
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	0.51
RATED VOLTAGE(V)	100-240	TOTAL FLUX(lm)	10016	η UP, DN(C0-180)	0.1,48.8
NOMINAL FLUX(lm)	10015.6	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.1,51.0
LAMPS INSIDE	1	η up(%)	0.3	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	99.7	CIBSE SHR MAX	0.55



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2023	1925	1794	1748	1786	1850	1951	2039	0- 10	2131	2131	21.3,21.3
20	884.2	831.5	746.6	726.6	784.1	798.9	846.5	904.3	10- 20	3537	5667	56.6,56.6
30	289.1	295.4	257.2	257.4	286.8	283.3	273.4	304.5	20- 30	2294	7961	79.5,79.5
40	82.94	99.58	96.78	86.51	109.7	94.17	91.76	93.03	30- 40	1041	9002	89.9,89.9
50	32.82	43.21	43.09	41.74	51.73	40.83	42.55	39.80	40- 50	474.1	9476	94.6,94.6
60	17.66	24.00	21.65	23.09	27.40	22.37	21.52	21.39	50- 60	278.7	9755	97.4,97.4
70	8.582	11.39	9.008	10.67	12.36	10.60	9.359	10.37	60- 70	157.9	9913	99,99
80	2.745	3.012	1.980	2.139	2.756	2.653	2.631	3.290	70- 80	65.12	9978	99.6,99.6
90	0.0026	0.0075	0.0001	0	0	0	0	0	80- 90	10.23	9988	99.7,99.7
100	0	0	0	0	0	0	0	0	90-100	0.0004	9988	99.7,99.7
110	0	0	0	0	0	0.0073	0.0074	0.0146	100-110	0.0130	9988	99.7,99.7
120	0	0	0	0	0.0151	0.0293	0.0442	0.0366	110-120	0.1034	9988	99.7,99.7
130	0.0437	0.0290	0.0291	0.0072	0.0808	0.0878	0.0737	0.1027	120-130	0.2628	9988	99.7,99.7
140	0.3945	0.3347	0.3893	0.3434	0.3450	0.2791	0.3027	0.3229	130-140	1.258	9990	99.7,99.7
150	1.422	1.396	1.491	1.569	1.203	0.9762	0.9723	1.020	140-150	4.503	9994	99.8,99.8
160	2.676	2.766	2.831	2.882	2.713	2.381	2.315	2.192	150-160	8.707	10003	99.9,99.9
170	3.758	3.971	4.123	3.989	3.512	3.441	3.329	3.609	160-170	8.856	10012	100,100
180	4.215	4.267	4.345	4.335	4.171	4.224	4.109	4.261	170-180	3.778	10016	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 9276.4 lm

%lum = 92.6%
%lamp = 92.6%

Conical surface Flux(120deg): 9754.8 lm

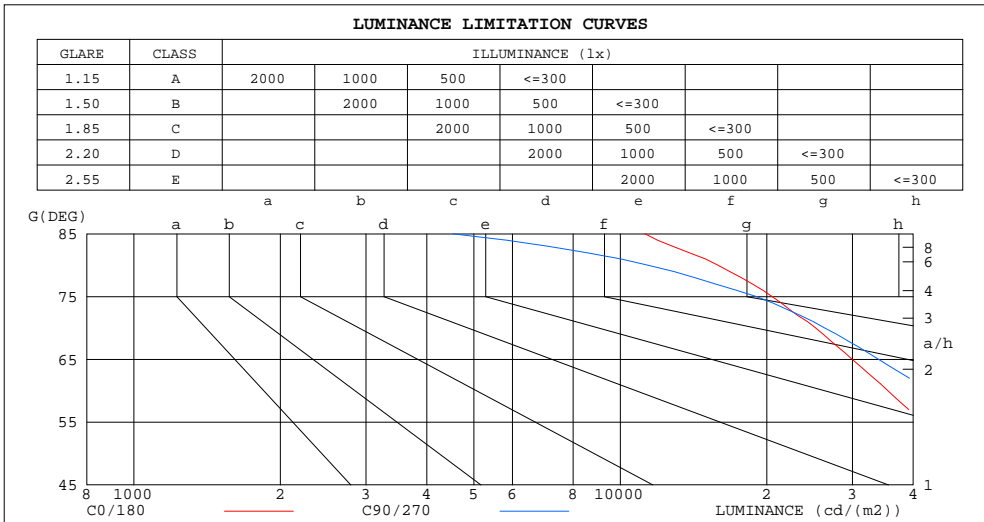
%lum = 97.4%
%lamp = 97.4%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-12-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:56.4%
Test Distance:26.000m [K=1.3890]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	11239	4530
80	15878	11390
75	20510	19044
70	25199	26308
65	29953	33956
60	35463	43246
55	42079	54602
50	51278	66970
45	68077	86946

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

WEC AND CCEC

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	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	.170	.097	.031	.163	.093	.030	.151	.086	.028	.139	.080	.026	.128	.074	.024	
2.0	.161	.088	.027	.155	.086	.026	.145	.080	.025	.135	.076	.024	.126	.071	.022	
3.0	.152	.081	.024	.147	.079	.024	.138	.075	.023	.129	.071	.022	.122	.067	.021	
4.0	.143	.074	.022	.139	.073	.021	.131	.070	.021	.124	.067	.020	.117	.064	.019	
5.0	.135	.069	.020	.131	.068	.020	.125	.065	.019	.118	.063	.019	.113	.060	.018	
6.0	.128	.064	.018	.125	.063	.018	.119	.061	.018	.113	.059	.017	.108	.057	.017	
7.0	.121	.060	.017	.119	.059	.017	.114	.057	.017	.109	.056	.016	.104	.054	.016	
8.0	.116	.056	.016	.113	.056	.016	.109	.054	.015	.104	.053	.015	.100	.051	.015	
9.0	.110	.053	.015	.108	.053	.015	.104	.051	.015	.100	.050	.014	.097	.049	.014	
10.0	.105	.051	.014	.104	.050	.014	.100	.049	.014	.096	.048	.014	.093	.047	.013	

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	.193	.193	.193	.165	.165	.165	.112	.112	.112	.065	.065	.065	.021	.021	.021	
1.0	.173	.159	.148	.148	.137	.127	.101	.094	.088	.058	.054	.051	.019	.018	.017	
2.0	.157	.135	.116	.134	.116	.100	.092	.080	.070	.053	.047	.041	.017	.015	.013	
3.0	.144	.116	.093	.123	.100	.081	.085	.069	.057	.049	.040	.033	.016	.013	.011	
4.0	.133	.101	.076	.114	.087	.066	.078	.061	.047	.045	.036	.028	.015	.012	.009	
5.0	.123	.089	.063	.106	.077	.055	.073	.054	.039	.042	.032	.023	.014	.010	.008	
6.0	.115	.079	.054	.099	.069	.047	.068	.048	.033	.040	.028	.020	.013	.009	.006	
7.0	.108	.072	.046	.093	.062	.040	.064	.044	.028	.037	.026	.017	.012	.008	.006	
8.0	.102	.065	.040	.088	.057	.035	.061	.040	.025	.035	.023	.015	.011	.008	.005	
9.0	.097	.060	.035	.083	.052	.030	.058	.037	.022	.034	.022	.013	.011	.007	.004	
10.0	.092	.055	.031	.079	.048	.027	.055	.034	.019	.032	.020	.011	.010	.007	.004	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	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	21.8	22.7	22.0	22.8	23.0	23.1	23.9	23.3	24.1	24.2
3H	22.1	22.9	22.4	23.1	23.3	23.5	24.3	23.7	24.5	24.7
4H	22.2	23.0	22.5	23.2	23.4	23.6	24.3	23.8	24.5	24.8
6H	22.2	23.0	22.5	23.2	23.5	23.5	24.3	23.8	24.5	24.7
8H	22.2	22.9	22.5	23.2	23.4	23.5	24.2	23.8	24.5	24.7
12H	22.2	22.9	22.5	23.1	23.4	23.5	24.1	23.8	24.4	24.7
4H 2H	22.1	22.8	22.4	23.1	23.3	23.2	23.9	23.5	24.2	24.4
3H	22.5	23.2	22.8	23.4	23.7	23.8	24.4	24.1	24.7	25.0
4H	22.7	23.3	23.0	23.6	23.9	24.0	24.6	24.3	24.9	25.2
6H	22.7	23.3	23.1	23.6	24.0	24.0	24.5	24.4	24.9	25.2
8H	22.7	23.2	23.1	23.6	24.0	24.0	24.4	24.4	24.8	25.2
12H	22.7	23.2	23.1	23.5	23.9	23.9	24.4	24.3	24.7	25.1
8H 4H	22.7	23.2	23.1	23.6	23.9	23.9	24.4	24.3	24.8	25.2
6H	22.8	23.2	23.3	23.6	24.1	24.0	24.4	24.4	24.8	25.2
8H	22.9	23.2	23.3	23.6	24.1	24.0	24.4	24.4	24.8	25.2
12H	22.8	23.2	23.3	23.6	24.1	24.0	24.3	24.4	24.7	25.2
12H 4H	22.7	23.1	23.1	23.5	23.9	23.9	24.3	24.3	24.7	25.1
6H	22.8	23.2	23.3	23.6	24.0	24.0	24.3	24.4	24.8	25.2
8H	22.8	23.1	23.3	23.6	24.1	24.0	24.3	24.4	24.7	25.2
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 1.5					+ 1.0 / - 1.4				
1.5H	+ 2.0 / - 1.2					+ 1.4 / - 1.3				
2.0H	+ 1.2 / - 1.1					+ 1.3 / - 1.9				

CIE Pub.117, 10016 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 8.0)

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

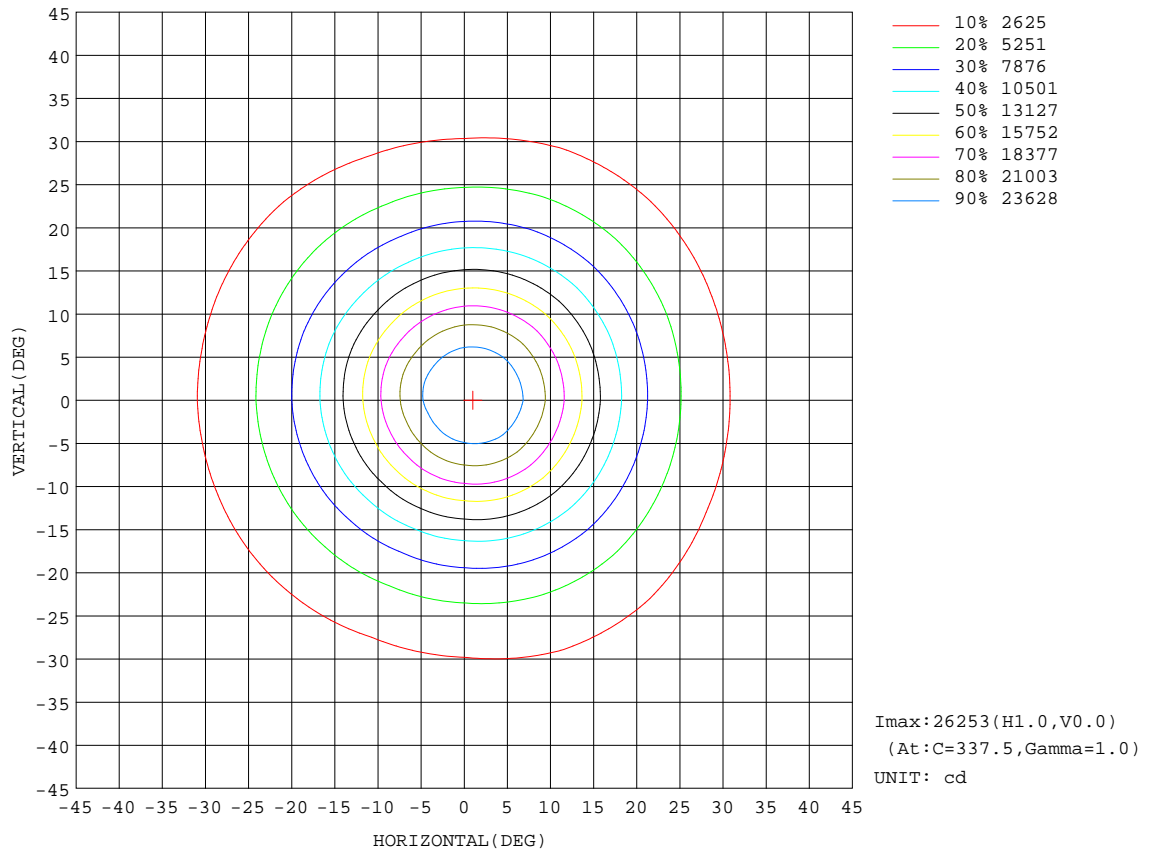
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	85	79	75	85	78	74	84	78	74	71
0.80	93	87	83	92	86	82	91	86	82	78
1.00	98	92	88	97	91	87	95	91	87	83
1.25	102	96	93	101	96	92	99	94	91	87
1.50	105	100	96	103	99	95	101	97	94	90
2.00	108	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	105	109	106	103	106	103	101	95
4.00	113	110	108	111	109	107	107	105	104	97
5.00	115	112	110	112	110	109	108	107	105	98
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:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

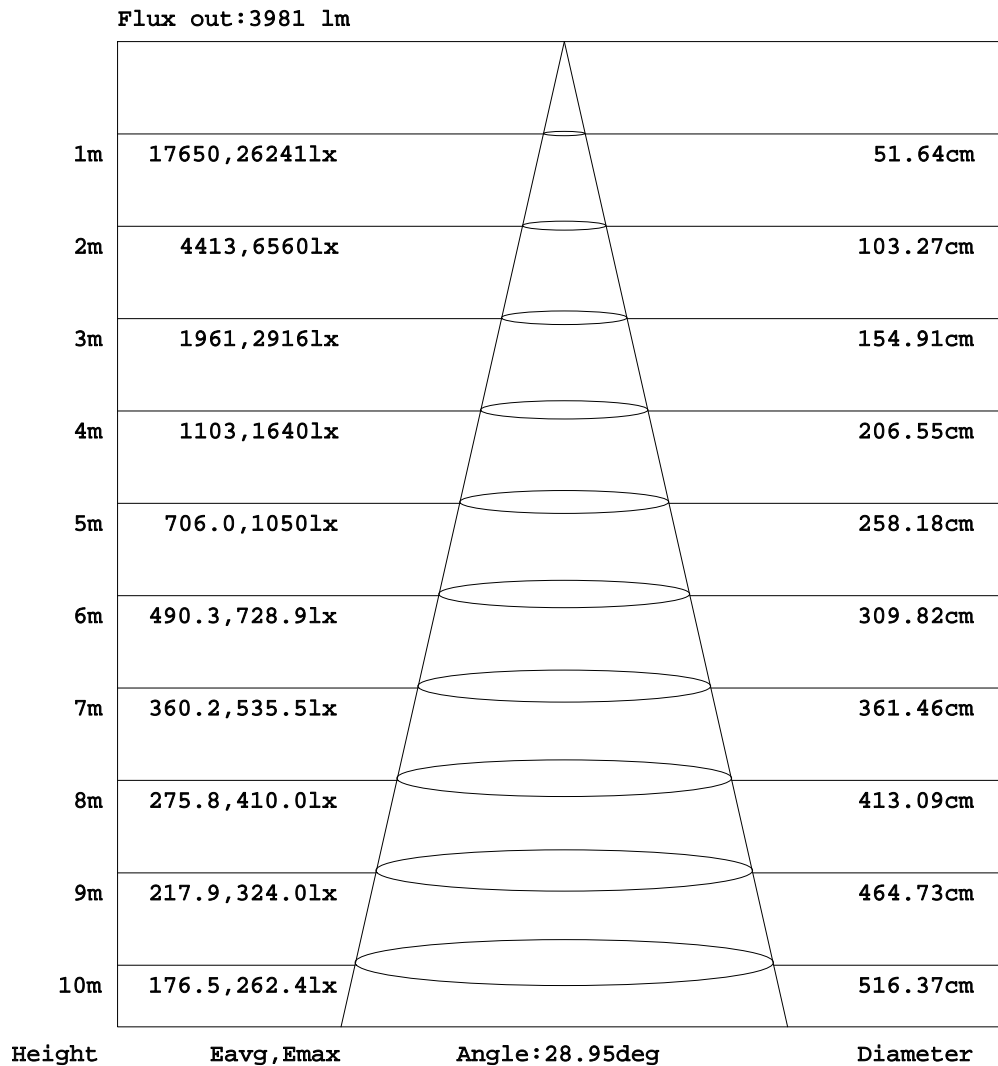


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators: William
 Test Date: 2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity: 56.4%
 Test Distance: 26.000m [K=1.3890]
 Remarks:

AAI Figure

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

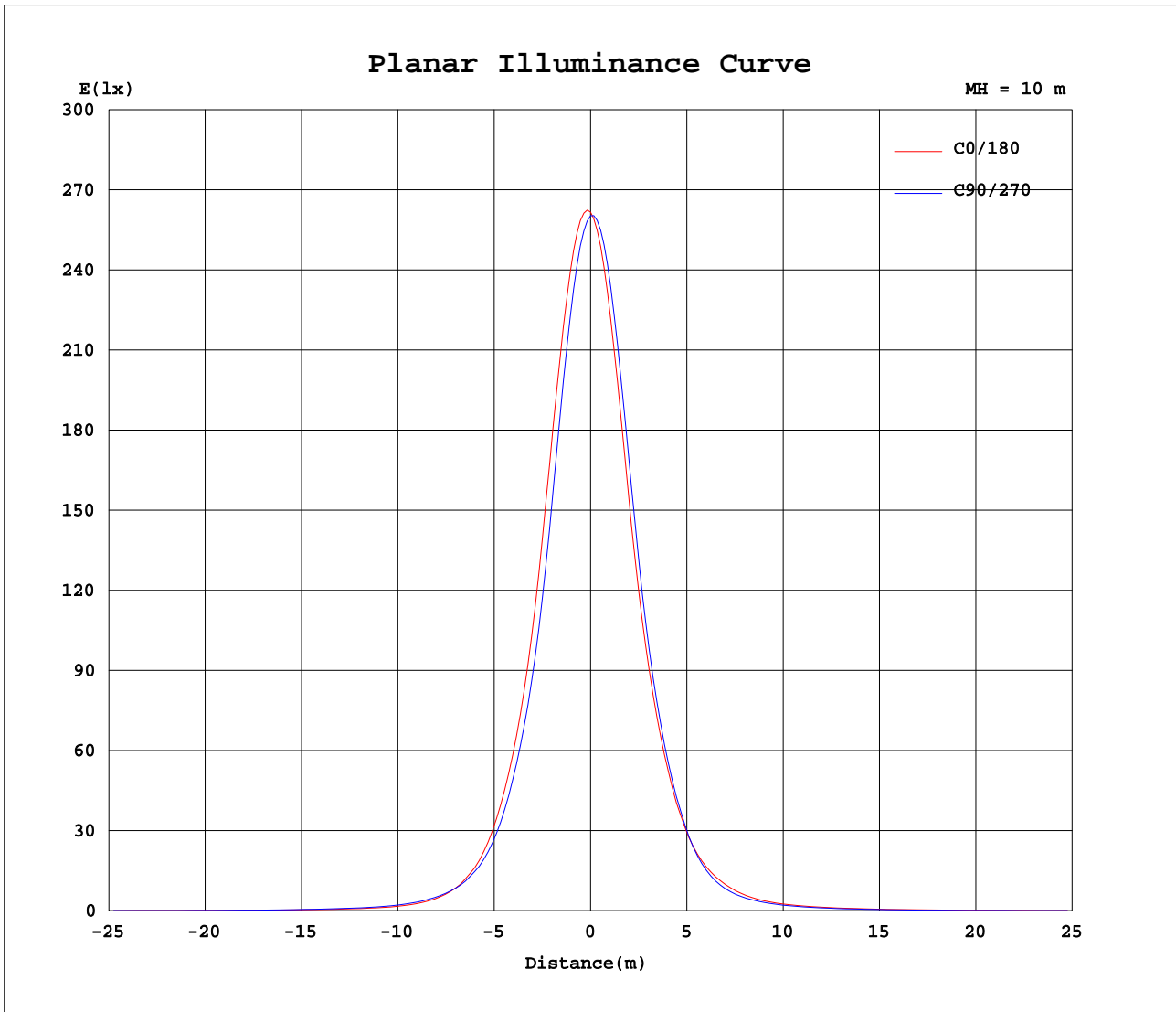


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.5DEG
Operators: William
Test Date: 2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity: 56.4%
Test Distance: 26.000m [K=1.3890]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.97V I:0.4473A P:97.451W PF:0.9905 Freq:50.01Hz Lamp Flux:10015.6x1 lm		
NAME: LED Garden Lamp	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

Table--1

UNIT: x10cd

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	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606	2606			
5	2491	2461	2434	2395	2358	2336	2321	2323	2335	2359	2381	2418	2453	2479	2498	2503			
10	2023	1972	1925	1858	1794	1762	1748	1763	1786	1822	1850	1897	1951	2000	2039	2047			
15	1399	1350	1302	1237	1178	1150	1150	1180	1207	1234	1247	1281	1328	1378	1418	1426			
20	884	855	831	792	747	720	727	757	784	797	799	810	846	883	904	907			
25	530	516	507	483	446	430	439	461	482	490	491	491	507	536	550	548			
30	289	284	295	289	257	244	257	273	287	286	283	269	273	301	304	297			
35	155	157	172	173	154	137	150	163	179	174	163	147	151	169	166	155			
40	82.9	88.5	99.6	106	96.8	79.3	86.5	100	110	109	94.2	80.0	91.8	101	93.0	83.0			
45	47.9	51.3	60.7	69.7	61.5	48.6	56.4	67.7	71.8	71.4	58.0	47.6	60.2	66.2	55.8	47.0			
50	32.8	34.5	43.2	51.2	43.1	33.9	41.7	50.2	51.7	50.6	40.8	31.7	42.6	48.7	39.8	32.4			
55	24.0	25.2	32.7	39.0	31.4	24.4	31.3	37.3	38.1	37.2	30.3	22.4	30.7	36.3	29.6	23.7			
60	17.7	18.4	24.0	29.0	21.6	17.1	23.1	27.6	27.4	27.1	22.4	15.9	21.5	26.6	21.4	17.3			
65	12.6	13.0	17.0	20.9	14.4	11.6	16.3	19.9	19.3	19.3	16.0	11.1	14.6	19.1	15.2	12.3			
70	8.58	8.78	11.4	13.9	9.01	7.38	10.7	13.0	12.4	12.7	10.6	7.41	9.36	13.0	10.4	8.50			
75	5.29	5.31	6.75	7.86	4.93	4.07	6.05	6.65	6.47	6.71	6.17	4.39	5.42	7.84	6.44	5.30			
80	2.75	2.70	3.01	3.33	1.98	1.69	2.14	2.60	2.76	2.85	2.65	2.12	2.63	3.93	3.29	2.78			
85	0.98	0.88	0.73	0.60	0.40	0.35	0.41	0.51	0.57	0.64	0.67	0.66	0.83	1.18	1.08	0.98			
90	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.02			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.04			
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.04	0.04	0.04	0.04	0.05			
125	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.05	0.04	0.06	0.03	0.06	0.08			
130	0.04	0.04	0.03	0.02	0.03	0.02	0.01	0.01	0.08	0.08	0.09	0.08	0.07	0.07	0.10	0.13			
135	0.15	0.15	0.12	0.13	0.12	0.14	0.11	0.12	0.16	0.15	0.14	0.17	0.17	0.15	0.18	0.21			
140	0.39	0.38	0.33	0.38	0.39	0.40	0.34	0.37	0.34	0.31	0.28	0.31	0.30	0.32	0.32	0.38			
145	0.79	0.78	0.70	0.78	0.79	0.83	0.80	0.79	0.68	0.61	0.54	0.58	0.56	0.61	0.59	0.68			
150	1.42	1.43	1.40	1.45	1.49	1.49	1.57	1.48	1.20	1.11	0.98	1.01	0.97	1.07	1.02	1.16			
155	2.07	2.09	2.06	2.10	2.13	2.16	2.27	2.12	1.95	1.87	1.64	1.66	1.57	1.65	1.48	1.84			
160	2.68	2.70	2.77	2.73	2.83	2.84	2.88	2.81	2.71	2.60	2.38	2.37	2.32	2.25	2.19	2.53			
165	3.19	3.21	3.33	3.38	3.45	3.30	3.49	3.40	3.27	3.19	3.03	2.94	2.84	2.99	3.13	3.10			
170	3.76	3.74	3.97	4.05	4.12	3.95	3.99	3.91	3.51	3.47	3.44	3.34	3.33	3.39	3.61	3.58			
175	4.20	4.15	4.25	4.33	4.46	4.26	4.37	4.35	3.98	3.94	3.83	3.78	3.74	3.94	4.02	4.00			
180	4.22	4.21	4.27	4.09	4.34	4.28	4.33	4.37	4.17	4.20	4.22	4.25	4.11	4.33	4.26	4.37			

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks: