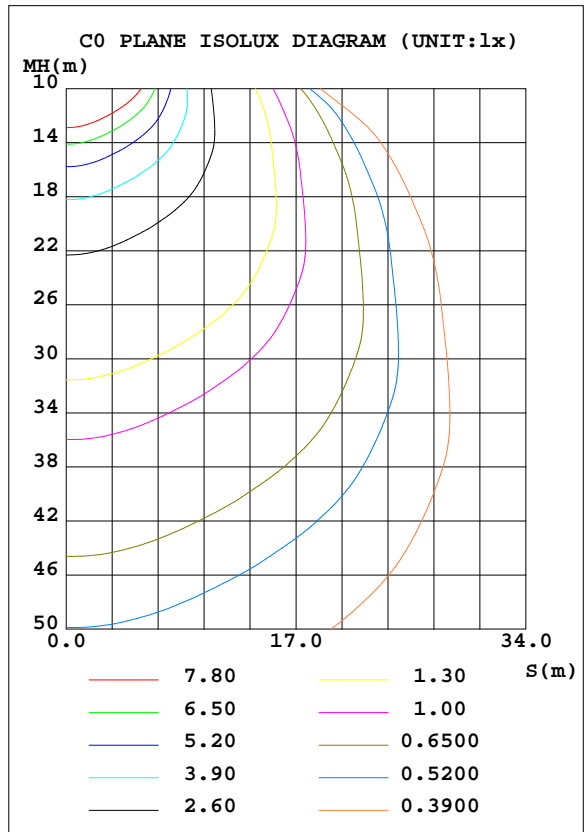
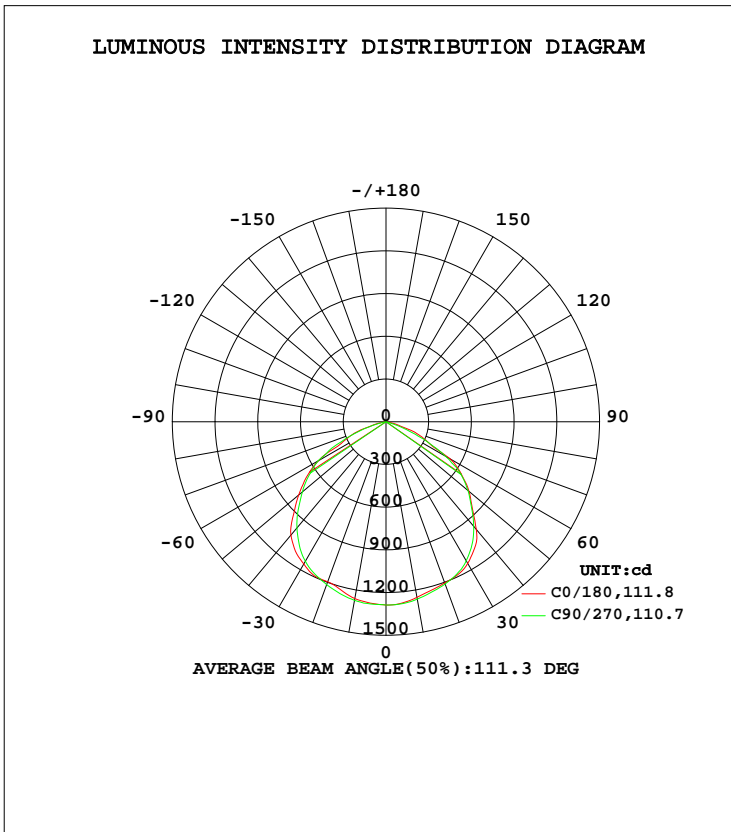


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.97V I:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	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: 118.81 lm/W			
MODEL	FUTT03	Imax(cd)	1289	S/MH(C0/180)	1.34
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	100-240	TOTAL FLUX(lm)	3457.7	$\eta$ UP, DN(C0-180)	0.1,49.0
NOMINAL FLUX(lm)	3457.74	CIE CLASS	DIRECT	$\eta$ UP, DN(C180-360)	0.1,50.9
LAMPS INSIDE	1	$\eta$ up(%)	0.1	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	220	$\eta$ down(%)	99.9	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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	1252	1264	1265	1269	1261	1269	1274	1260	0- 10	121.8	121.8	3.52,3.52
20	1205	1197	1213	1203	1196	1208	1217	1191	10- 20	349.5	471.3	13.6,13.6
30	1148	1126	1127	1138	1155	1141	1132	1120	20- 30	543.3	1015	29.3,29.3
40	986.8	1020	959.0	1036	1039	1044	972.7	1025	30- 40	677.7	1692	48.9,48.9
50	760.9	796.6	751.3	828.9	800.3	850.1	767.0	820.5	40- 50	697.8	2390	69.1,69.1
60	517.7	534.0	479.6	547.9	548.7	571.9	552.2	547.8	50- 60	603.3	2993	86.6,86.6
70	213.2	167.2	117.2	187.2	235.8	241.3	214.5	214.7	60- 70	366.4	3360	97.2,97.2
80	13.31	2.131	1.683	2.365	22.77	16.46	6.209	13.77	70- 80	90.88	3451	99.8,99.8
90	0.0008	0	0	0	0	0	0.5075	0	80- 90	2.218	3453	99.9,99.9
100	0	0	0	0	0	0	0	0.0715	90-100	0.0020	3453	99.9,99.9
110	0	0	0	0	0.2942	0.3653	0.1474	0.3682	100-110	0.0604	3453	99.9,99.9
120	0.0733	0.0732	0	0.0735	0.8762	0.8773	0.8043	0.9562	110-120	0.2883	3453	99.9,99.9
130	0.6538	0.5820	0.5118	0.3668	1.168	1.025	1.024	1.248	120-130	0.5040	3454	99.9,99.9
140	1.383	1.244	1.461	1.175	1.461	1.244	1.535	1.470	130-140	0.8358	3455	99.9,99.9
150	2.042	2.341	2.120	2.204	2.116	1.831	2.048	2.204	140-150	1.071	3456	99.9,99.9
160	2.264	2.341	2.340	2.424	2.629	2.492	2.779	2.648	150-160	1.071	3457	100,100
170	2.410	2.706	2.850	2.569	2.702	2.780	2.998	2.791	160-170	0.7397	3457	100,100
180	2.775	2.854	2.925	2.791	2.702	2.780	2.998	2.791	170-180	0.2671	3458	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 2047 lm

%lum = 59.2%  
%lamp = 59.2%

Conical surface Flux(120deg): 2993.4 lm

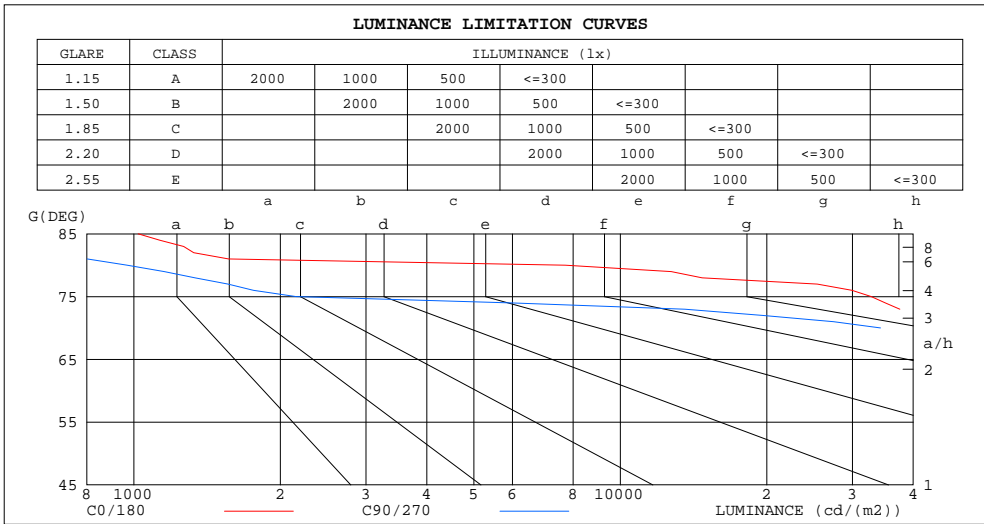
%lum = 86.6%  
%lamp = 86.6%

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.5DEG  
Operators:William  
Test Date:2019-12-30

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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	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	1020	172
80	7705	969
75	32790	2152
70	62672	34259
65	73998	70106
60	104105	95876
55	113582	111723
50	119022	116815
45	121878	120051

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	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	.266	.151	.048	.259	.148	.047	.246	.141	.045	.234	.135	.043	.223	.129	.042	
2.0	.261	.143	.044	.255	.141	.043	.244	.136	.042	.233	.131	.041	.223	.126	.040	
3.0	.248	.132	.040	.243	.130	.039	.233	.126	.038	.223	.122	.038	.215	.119	.037	
4.0	.233	.121	.036	.229	.120	.035	.220	.116	.035	.211	.113	.034	.203	.111	.034	
5.0	.219	.111	.032	.214	.110	.032	.206	.107	.032	.199	.105	.031	.192	.103	.031	
6.0	.205	.103	.029	.201	.101	.029	.194	.099	.029	.187	.097	.029	.181	.095	.028	
7.0	.192	.095	.027	.189	.094	.027	.182	.092	.027	.176	.090	.026	.170	.089	.026	
8.0	.180	.088	.025	.177	.087	.025	.171	.086	.024	.166	.084	.024	.161	.083	.024	
9.0	.170	.082	.023	.167	.081	.023	.162	.080	.023	.157	.079	.023	.152	.077	.022	
10.0	.160	.077	.021	.158	.076	.021	.153	.075	.021	.149	.074	.021	.144	.073	.021	

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	.178	.158	.139	.153	.135	.120	.104	.093	.083	.060	.054	.048	.019	.017	.016	
2.0	.169	.133	.103	.145	.115	.089	.099	.079	.062	.057	.046	.036	.018	.015	.012	
3.0	.161	.115	.078	.138	.099	.068	.095	.069	.048	.055	.040	.028	.018	.013	.009	
4.0	.154	.102	.062	.132	.088	.054	.091	.061	.038	.053	.036	.022	.017	.012	.007	
5.0	.147	.091	.050	.126	.079	.044	.087	.055	.031	.050	.032	.018	.016	.011	.006	
6.0	.140	.083	.042	.121	.072	.036	.083	.050	.026	.048	.030	.015	.016	.010	.005	
7.0	.134	.076	.035	.115	.066	.031	.080	.046	.022	.046	.027	.013	.015	.009	.004	
8.0	.128	.070	.030	.110	.061	.027	.076	.043	.019	.044	.025	.011	.014	.008	.004	
9.0	.122	.065	.027	.105	.057	.023	.073	.040	.017	.042	.023	.010	.014	.008	.003	
10.0	.117	.061	.024	.101	.053	.021	.070	.037	.015	.041	.022	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm										
NAME: LED Floodlight					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	29.3	30.8	29.6	31.0	31.2	29.2	30.6	29.5	30.8	31.0
3H	30.0	31.3	30.3	31.5	31.8	29.5	30.9	29.8	31.1	31.3
4H	30.0	31.3	30.3	31.5	31.8	29.5	30.7	29.8	31.0	31.2
6H	29.9	31.1	30.3	31.4	31.7	29.3	30.5	29.7	30.8	31.1
8H	29.9	31.0	30.2	31.3	31.6	29.3	30.4	29.6	30.7	31.0
12H	29.8	30.9	30.2	31.2	31.5	29.2	30.3	29.6	30.6	30.9
4H 2H	29.7	31.0	30.0	31.2	31.5	29.6	30.9	30.0	31.1	31.4
3H	30.5	31.6	30.8	31.8	32.1	30.0	31.1	30.4	31.4	31.7
4H	30.5	31.5	30.9	31.8	32.2	30.0	30.9	30.3	31.3	31.6
6H	30.5	31.4	30.9	31.7	32.1	29.9	30.7	30.3	31.1	31.4
8H	30.4	31.2	30.9	31.6	32.0	29.8	30.6	30.2	31.0	31.4
12H	30.4	31.1	30.8	31.5	31.9	29.8	30.5	30.2	30.9	31.3
8H 4H	30.5	31.3	30.9	31.6	32.0	29.9	30.7	30.3	31.1	31.4
6H	30.4	31.1	30.9	31.5	31.9	29.8	30.5	30.2	30.9	31.3
8H	30.4	31.0	30.8	31.4	31.8	29.8	30.3	30.2	30.8	31.2
12H	30.3	30.8	30.8	31.3	31.8	29.7	30.2	30.2	30.7	31.1
12H 4H	30.4	31.1	30.8	31.5	31.9	29.8	30.6	30.3	31.0	31.4
6H	30.4	31.0	30.8	31.4	31.8	29.8	30.3	30.2	30.8	31.2
8H	30.3	30.8	30.8	31.3	31.8	29.7	30.2	30.2	30.7	31.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.6					+ 0.5 / - 0.6				
1.5H	+ 0.6 / - 0.8					+ 0.6 / - 0.8				
2.0H	+ 0.5 / - 1.0					+ 0.6 / - 0.9				

CIE Pub.117, 3458 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 4.3)

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

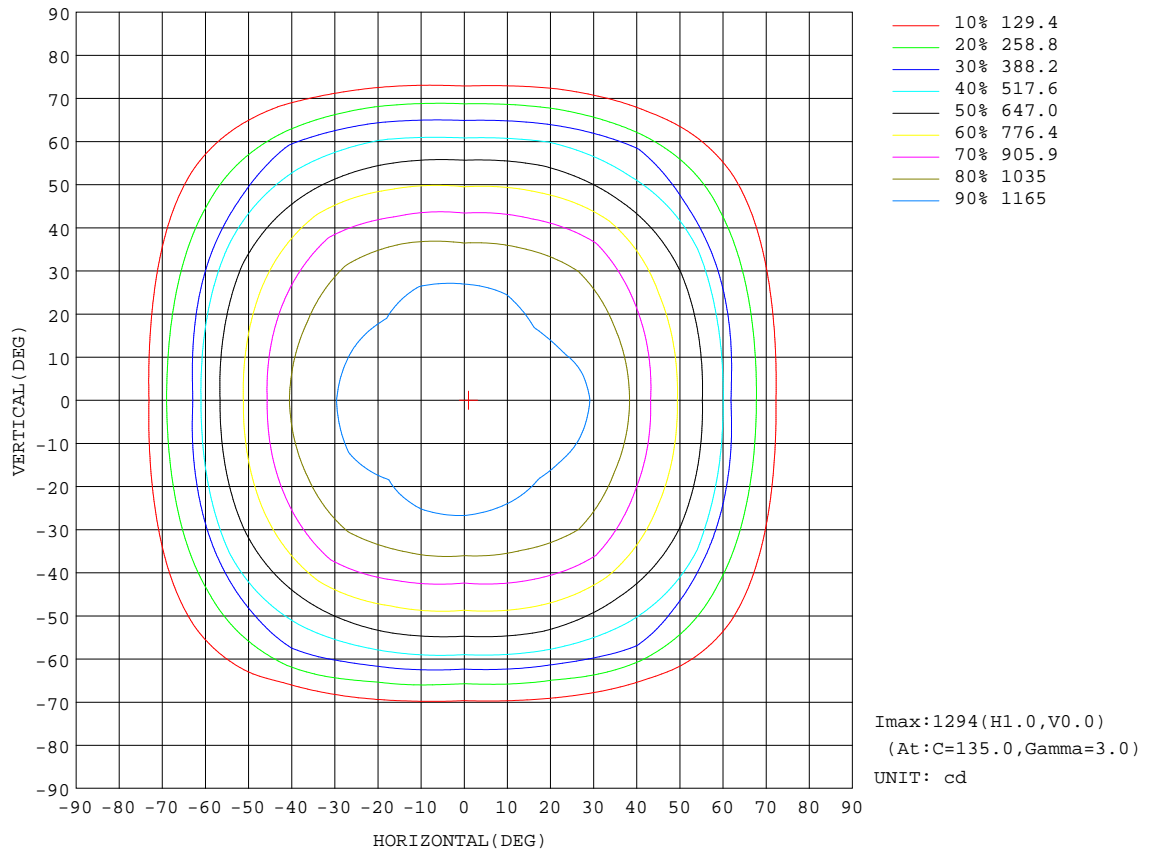
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	59	48	41	57	47	41	35
0.80	70	59	52	69	59	52	67	58	51	45
1.00	79	69	62	78	68	61	76	69	61	54
1.25	86	77	70	85	76	70	82	74	69	62
1.50	91	82	76	90	81	75	87	80	74	67
2.00	98	90	85	96	89	84	93	87	82	75
2.50	101	95	89	99	93	88	96	91	86	79
3.00	105	99	94	102	97	93	99	94	90	82
4.00	108	103	99	106	101	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:2019-12-30

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A

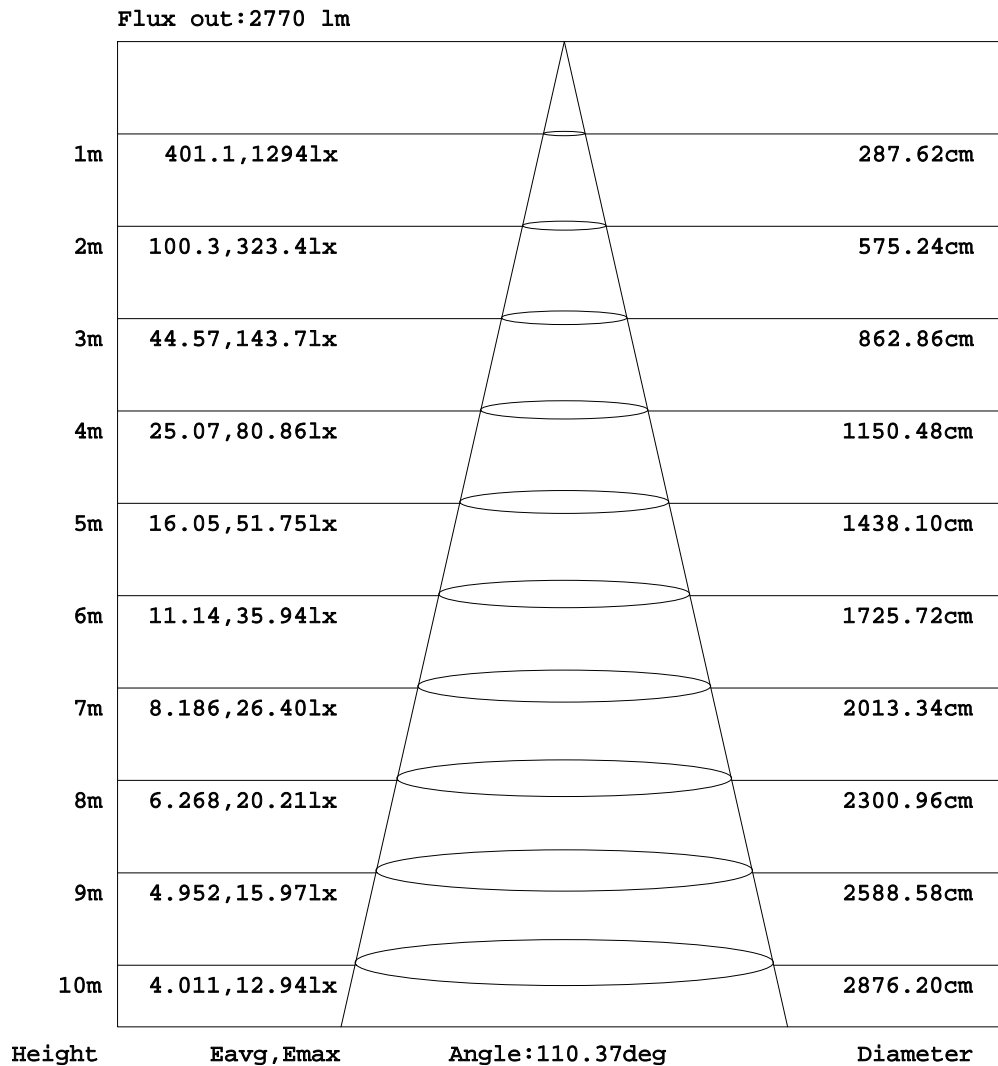


C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Futlight Optoelectronics Co.,Ltd	SUR.:	Shielding Angle:N/A



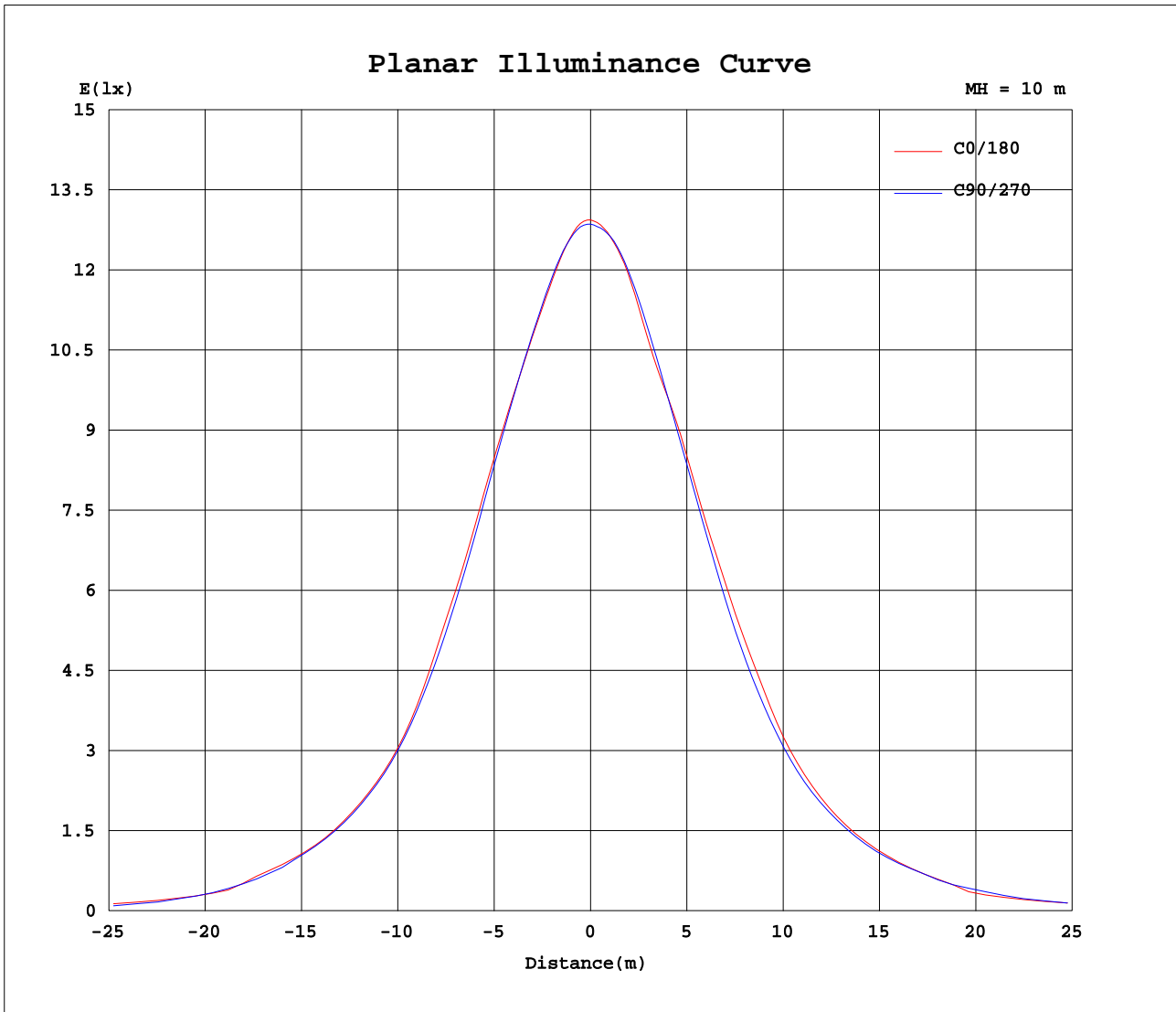
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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: 2019-12-30

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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:0.1400A P:29.102W PF:0.9451 Freq:50.00Hz Lamp Flux:3457.74x1 lm		
NAME: LED Floodlight	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: 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	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287	1287			
5	1279	1278	1282	1285	1283	1287	1286	1286	1278	1280	1284	1288	1284	1282	1277	1275			
10	1252	1254	1264	1269	1265	1270	1269	1269	1261	1266	1269	1282	1274	1265	1260	1255			
15	1226	1222	1235	1242	1239	1246	1241	1237	1223	1233	1247	1255	1250	1244	1229	1223			
20	1205	1195	1197	1210	1213	1221	1203	1207	1196	1200	1208	1220	1217	1209	1191	1194			
25	1187	1173	1162	1172	1179	1185	1170	1194	1193	1179	1169	1189	1181	1175	1155	1173			
30	1148	1144	1126	1125	1127	1139	1138	1164	1155	1147	1141	1148	1132	1137	1120	1147			
35	1085	1081	1086	1063	1054	1079	1098	1112	1110	1099	1100	1085	1061	1074	1085	1089			
40	987	996	1020	983	959	984	1036	1038	1039	1033	1044	1011	973	995	1025	1011			
45	857	878	922	883	849	890	947	940	917	943	960	902	871	894	933	895			
50	761	770	797	775	751	777	829	818	800	822	850	800	767	788	821	782			
55	648	667	658	663	641	666	689	702	683	713	713	686	662	680	676	678			
60	518	547	534	512	480	519	548	568	549	586	572	575	552	563	548	562			
65	311	317	400	318	296	330	420	338	334	360	444	420	382	410	425	332			
70	213	208	167	142	117	150	187	235	236	240	241	241	214	231	215	227			
75	84.4	80.2	58.3	14.3	5.57	16.1	67.6	94.8	100	103	113	97.3	76.5	91.2	94.2	92.1			
80	13.3	14.3	2.13	1.76	1.68	1.91	2.36	15.9	22.8	22.5	16.5	6.07	6.21	5.20	13.8	20.1			
85	0.88	0.74	0.52	0.22	0.15	0.30	0.52	1.04	0.79	1.38	2.26	3.52	3.65	2.93	1.68	0.88			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	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	0.07	0.00		
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.08	0.15	0.00	0.00	0.07	0.15	0.22			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.36	0.37	0.29	0.15	0.22	0.37	0.44			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.58	0.66	0.51	0.51	0.51	0.66	0.66			
120	0.07	0.00	0.07	0.00	0.00	0.00	0.07	0.07	0.88	0.80	0.88	0.81	0.80	0.88	0.96	0.96			
125	0.15	0.07	0.15	0.15	0.15	0.15	0.07	0.07	0.88	1.02	0.88	0.81	0.88	0.88	1.03	1.11			
130	0.65	0.51	0.58	0.59	0.51	0.37	0.37	0.37	1.17	1.02	1.02	1.03	1.02	1.10	1.25	1.18			
135	1.24	0.95	1.17	1.10	0.95	0.94	0.59	0.81	1.32	1.17	1.02	1.18	1.39	1.39	1.25	1.33			
140	1.38	1.31	1.24	1.46	1.46	1.39	1.18	1.18	1.46	1.38	1.24	1.47	1.54	1.47	1.47	1.62			
145	1.68	1.60	1.61	1.98	1.76	1.69	1.61	1.47	1.75	1.53	1.54	1.91	1.75	1.76	1.76	1.77			
150	2.04	2.04	2.34	2.35	2.12	2.13	2.20	1.77	2.12	1.97	1.83	2.20	2.05	2.13	2.20	2.14			
155	2.26	2.26	2.34	2.35	2.27	2.20	2.42	2.14	2.41	2.26	2.27	2.42	2.49	2.43	2.35	2.51			
160	2.26	2.33	2.34	2.35	2.34	2.28	2.42	2.29	2.63	2.55	2.49	2.71	2.78	2.72	2.65	2.66			
165	2.41	2.40	2.34	2.56	2.56	2.42	2.42	2.36	2.70	2.77	2.78	2.79	2.85	2.86	2.79	2.80			
170	2.41	2.55	2.71	2.79	2.85	2.57	2.57	2.58	2.70	2.77	2.78	2.86	3.00	2.94	2.79	2.80			
175	2.77	2.84	2.85	3.01	2.92	2.79	2.79	2.88	2.70	2.77	2.78	2.86	3.00	2.94	2.79	2.80			
180	2.77	2.77	2.85	3.01	2.92	2.79	2.79	2.80	2.70	2.77	2.78	2.86	3.00	2.94	2.79	2.80			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2019-12-30

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: