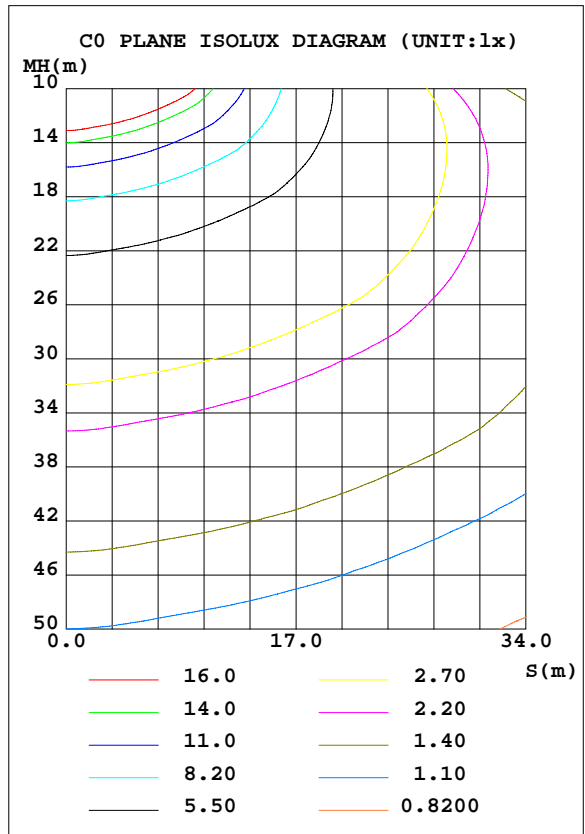
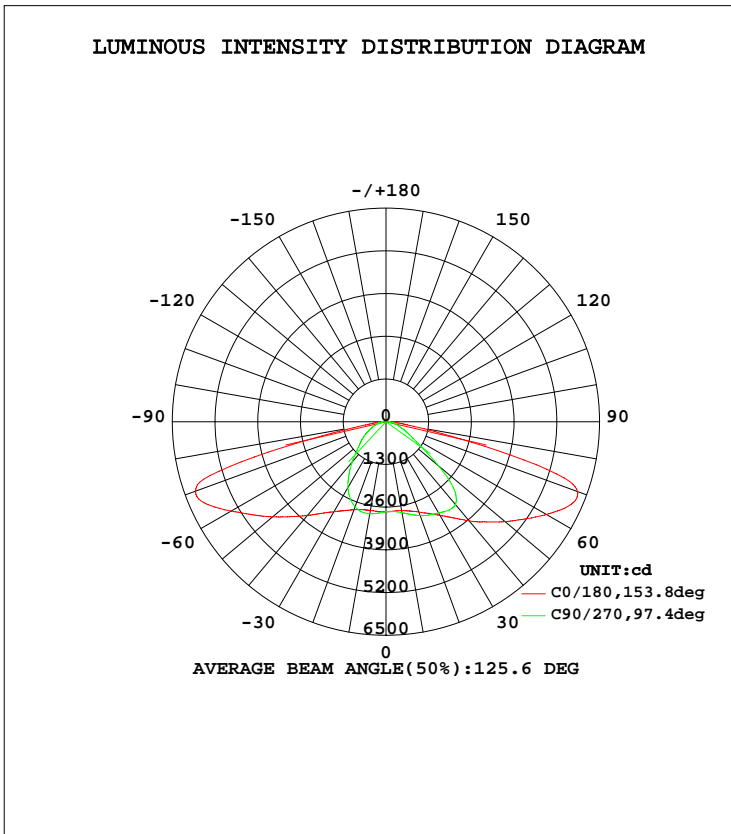


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 110.20 lm/W			
MODEL	QH-STL-LD90S-120W	Imax(cd)	6559	S/MH(C0/180)	2.11
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	13312	η UP, DN(C0-180)	0.0, 58.8
NOMINAL FLUX(lm)	13312.2	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 41.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	220.0	η down(%)	100.0	CIBSE SHR MAX	1.75



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	2734	2728	2741	2729	2744	2779	2794	2778	0- 5	65.71	65.71	0.49,0.49
10	2745	2741	2809	2738	2740	2817	2843	2820	5- 10	198.0	263.7	1.98,1.98
15	2814	2813	2919	2791	2771	2854	2842	2871	10- 15	333.2	596.9	4.48,4.48
20	2923	2954	3040	2902	2851	2881	2755	2916	15- 20	472.8	1070	8.04,8.04
25	3077	3147	3131	3058	2985	2883	2578	2936	20- 25	616.1	1686	12.7,12.7
30	3292	3399	3209	3279	3161	2855	2318	2923	25- 30	761.8	2448	18.4,18.4
35	3572	3722	3297	3567	3402	2745	1969	2827	30- 35	911.5	3359	25.2,25.2
40	3938	4213	3286	4013	3721	2498	1599	2591	35- 40	1067	4426	33.3,33.3
45	4314	4875	2940	4632	4082	2116	1263	2208	40- 45	1223	5649	42.4,42.4
50	4731	5328	2095	5074	4505	1640	1037	1726	45- 50	1340	6989	52.5,52.5
55	5161	4585	1291	4295	4942	1125	860.8	1220	50- 55	1361	8350	62.7,62.7
60	5639	2680	878.0	2378	5435	866.9	684.3	937.9	55- 60	1296	9646	72.5,72.5
65	6101	1130	643.8	1029	5971	671.2	526.8	718.2	60- 65	1193	10839	81.4,81.4
70	6198	586.3	457.5	548.3	6164	464.8	391.8	494.1	65- 70	1071	11910	89.5,89.5
75	3910	315.9	299.5	316.3	4146	301.4	258.9	315.7	70- 75	815.0	12725	95.6,95.6
80	1011	220.2	257.9	220.4	860.3	206.0	245.7	212.4	75- 80	357.7	13083	98.3,98.3
85	317.1	123.9	116.0	121.2	264.7	118.2	128.6	120.6	80- 85	158.7	13241	99.5,99.5
90	70.16	65.96	23.58	60.19	64.04	71.81	46.12	74.72	85- 90	70.70	13312	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

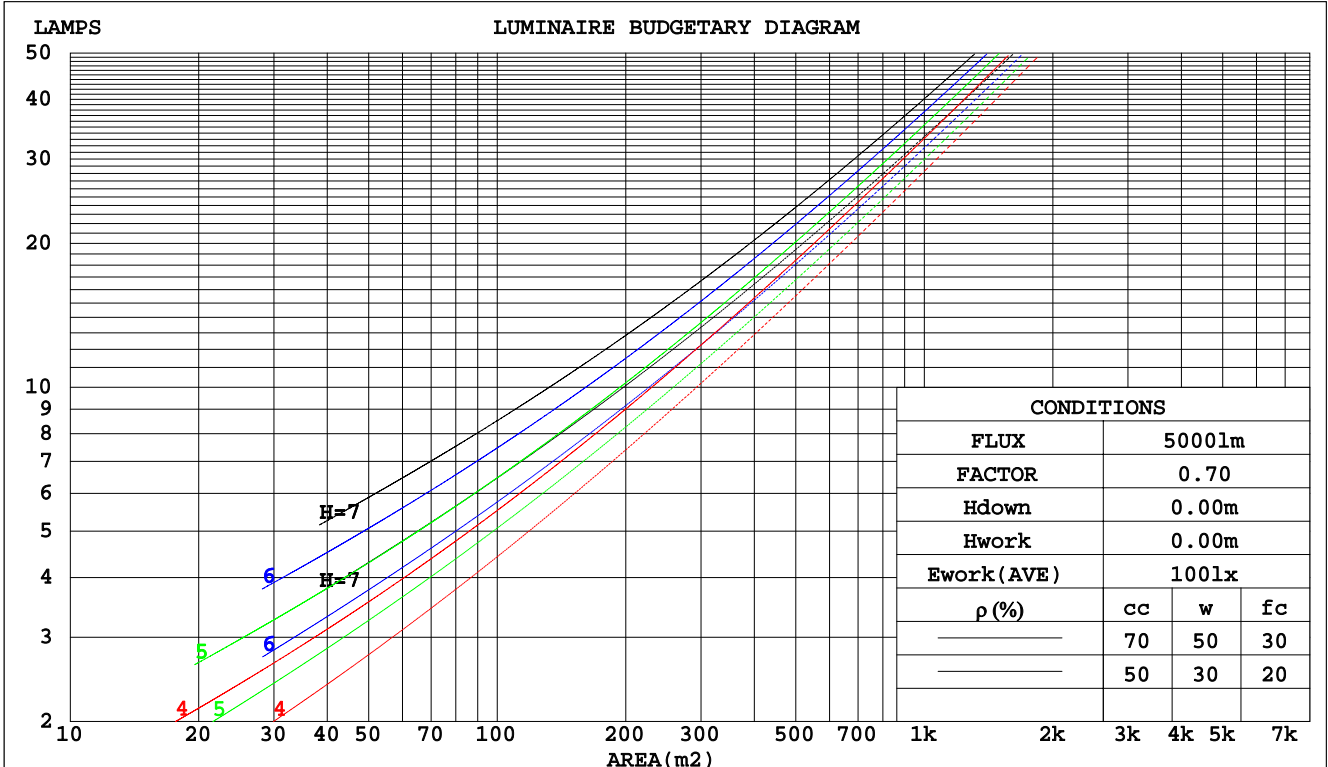
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.02	.98	.93	1.00	.96	.92	.96	.92	.89	.92	.89	.86	.88	.86	.84	.81
2.0	.87	.80	.74	.86	.79	.73	.82	.76	.71	.79	.74	.69	.75	.71	.68	.65
3.0	.75	.66	.59	.74	.65	.59	.71	.63	.58	.68	.62	.56	.65	.60	.55	.53
4.0	.66	.56	.49	.64	.55	.48	.62	.54	.47	.59	.52	.47	.57	.51	.46	.44
5.0	.58	.48	.41	.57	.47	.40	.54	.46	.40	.52	.45	.39	.50	.44	.39	.37
6.0	.51	.42	.35	.50	.41	.34	.48	.40	.34	.47	.39	.34	.45	.38	.33	.31
7.0	.46	.36	.30	.45	.36	.30	.43	.35	.29	.42	.35	.29	.40	.34	.29	.27
8.0	.41	.32	.26	.41	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.25	.23
9.0	.38	.29	.23	.37	.29	.23	.36	.28	.23	.35	.28	.23	.34	.27	.22	.21
10.0	.35	.26	.20	.34	.26	.20	.33	.25	.20	.32	.25	.20	.31	.25	.20	.18



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

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	.338	.192	.061	.331	.189	.060	.318	.182	.058	.305	.176	.057	.294	.170	.055	
2.0	.320	.176	.054	.314	.173	.053	.302	.168	.052	.291	.163	.051	.281	.159	.050	
3.0	.296	.157	.047	.290	.155	.047	.279	.151	.046	.270	.148	.045	.260	.144	.045	
4.0	.272	.141	.042	.267	.140	.041	.257	.136	.041	.248	.133	.040	.240	.130	.040	
5.0	.250	.127	.037	.245	.126	.037	.237	.123	.036	.229	.121	.036	.222	.118	.036	
6.0	.231	.116	.033	.227	.114	.033	.219	.112	.033	.212	.110	.032	.205	.108	.032	
7.0	.213	.106	.030	.210	.105	.030	.203	.103	.030	.197	.101	.029	.191	.099	.029	
8.0	.198	.097	.027	.195	.096	.027	.189	.095	.027	.184	.093	.027	.178	.091	.027	
9.0	.185	.090	.025	.182	.089	.025	.177	.087	.025	.172	.086	.025	.167	.085	.025	
10.0	.173	.083	.023	.171	.083	.023	.166	.081	.023	.161	.080	.023	.157	.079	.023	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.182	.156	.132	.156	.134	.114	.107	.092	.079	.061	.053	.046	.020	.017	.015	
2.0	.176	.132	.095	.151	.113	.082	.103	.078	.057	.060	.046	.033	.019	.015	.011	
3.0	.169	.114	.071	.145	.099	.061	.100	.069	.043	.058	.040	.025	.019	.013	.008	
4.0	.162	.101	.055	.139	.088	.048	.096	.061	.034	.055	.036	.020	.018	.012	.007	
5.0	.155	.091	.044	.133	.079	.039	.092	.055	.027	.053	.032	.016	.017	.011	.005	
6.0	.148	.083	.037	.127	.072	.032	.088	.050	.023	.051	.030	.013	.016	.010	.004	
7.0	.141	.076	.031	.121	.066	.027	.084	.046	.019	.049	.027	.011	.016	.009	.004	
8.0	.134	.071	.027	.116	.061	.024	.080	.043	.017	.047	.025	.010	.015	.008	.003	
9.0	.128	.066	.024	.110	.057	.021	.076	.040	.015	.044	.024	.009	.014	.008	.003	
10.0	.122	.061	.021	.105	.053	.019	.073	.038	.013	.042	.022	.008	.014	.007	.003	

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm										
NAME: LED STREET LIGHT					TYPE:IP66			WEIGHT:3		
SPEC.:CREE XTE					DIM.:			SERIAL No.:		
MFR.: QINHAN LIGHTING					SUR.:			PROTECTION ANGLE:		
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	32.3	33.9	32.5	34.1	34.4	24.5	26.2	24.8	26.4	26.6
3H	35.8	37.3	36.1	37.6	37.8	24.7	26.2	25.0	26.5	26.7
4H	36.9	38.4	37.2	38.6	38.9	24.8	26.2	25.1	26.5	26.8
6H	37.1	38.5	37.4	38.7	39.0	24.9	26.3	25.2	26.6	26.9
8H	37.1	38.4	37.4	38.7	39.0	25.0	26.3	25.3	26.6	26.9
12H	37.0	38.3	37.4	38.6	38.9	25.0	26.3	25.4	26.6	26.9
4H 2H	32.4	33.8	32.7	34.1	34.4	26.6	28.1	27.0	28.4	28.6
3H	36.0	37.3	36.3	37.6	37.9	26.7	28.0	27.1	28.3	28.6
4H	37.1	38.3	37.5	38.6	39.0	26.8	28.0	27.2	28.3	28.6
6H	37.4	38.4	37.8	38.8	39.2	26.9	28.0	27.3	28.3	28.7
8H	37.4	38.4	37.8	38.8	39.1	27.0	28.0	27.4	28.3	28.7
12H	37.4	38.3	37.8	38.7	39.1	27.0	27.9	27.5	28.3	28.7
8H 4H	37.0	38.0	37.4	38.3	38.7	27.6	28.5	28.0	28.9	29.3
6H	37.3	38.1	37.7	38.5	38.9	27.7	28.6	28.2	29.0	29.4
8H	37.3	38.1	37.8	38.5	38.9	27.8	28.6	28.3	29.0	29.4
12H	37.4	38.0	37.9	38.5	38.9	28.0	28.6	28.4	29.0	29.5
12H 4H	36.9	37.8	37.4	38.2	38.6	27.6	28.5	28.0	28.9	29.3
6H	37.2	38.0	37.7	38.4	38.8	27.8	28.5	28.2	28.9	29.4
8H	37.3	37.9	37.8	38.4	38.9	27.9	28.5	28.4	29.0	29.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 1.0 / - 1.4				
1.5H	+ 1.1 / - 0.9					+ 0.9 / - 0.7				
2.0H	+ 0.5 / - 0.8					+ 2.6 / - 3.4				

CIE Pub.117 Corrected 13312 lm Total Lamp Luminous Flux. (8log(F/F0) = 9.0)

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

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	51	38	30	50	38	30	49	37	30	23
0.80	61	48	40	60	48	40	58	47	39	32
1.00	70	58	50	69	57	49	67	59	49	41
1.25	78	66	58	77	65	58	74	64	57	49
1.50	84	72	65	82	72	64	79	70	63	55
2.00	92	82	75	90	81	74	86	78	72	64
2.50	96	87	81	94	86	80	90	83	78	69
3.00	100	92	86	98	91	85	94	88	83	74
4.00	105	98	93	102	96	92	98	93	89	80
5.00	107	102	98	105	100	96	100	96	93	83
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

5649.1 lm

%lum = 42.4%

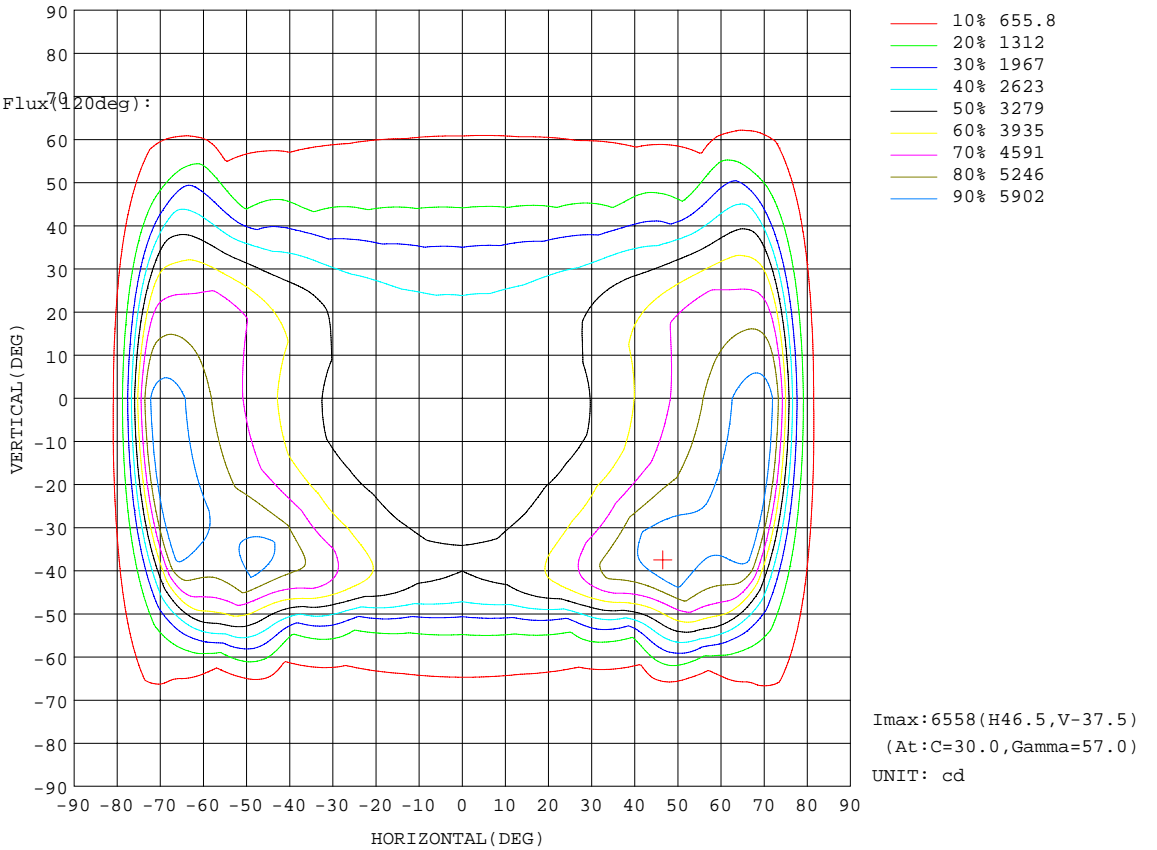
%lamp = 42.4%

Conical surface Flux(70deg):

9646.1 lm

%lum = 72.5%

%lamp = 72.5%

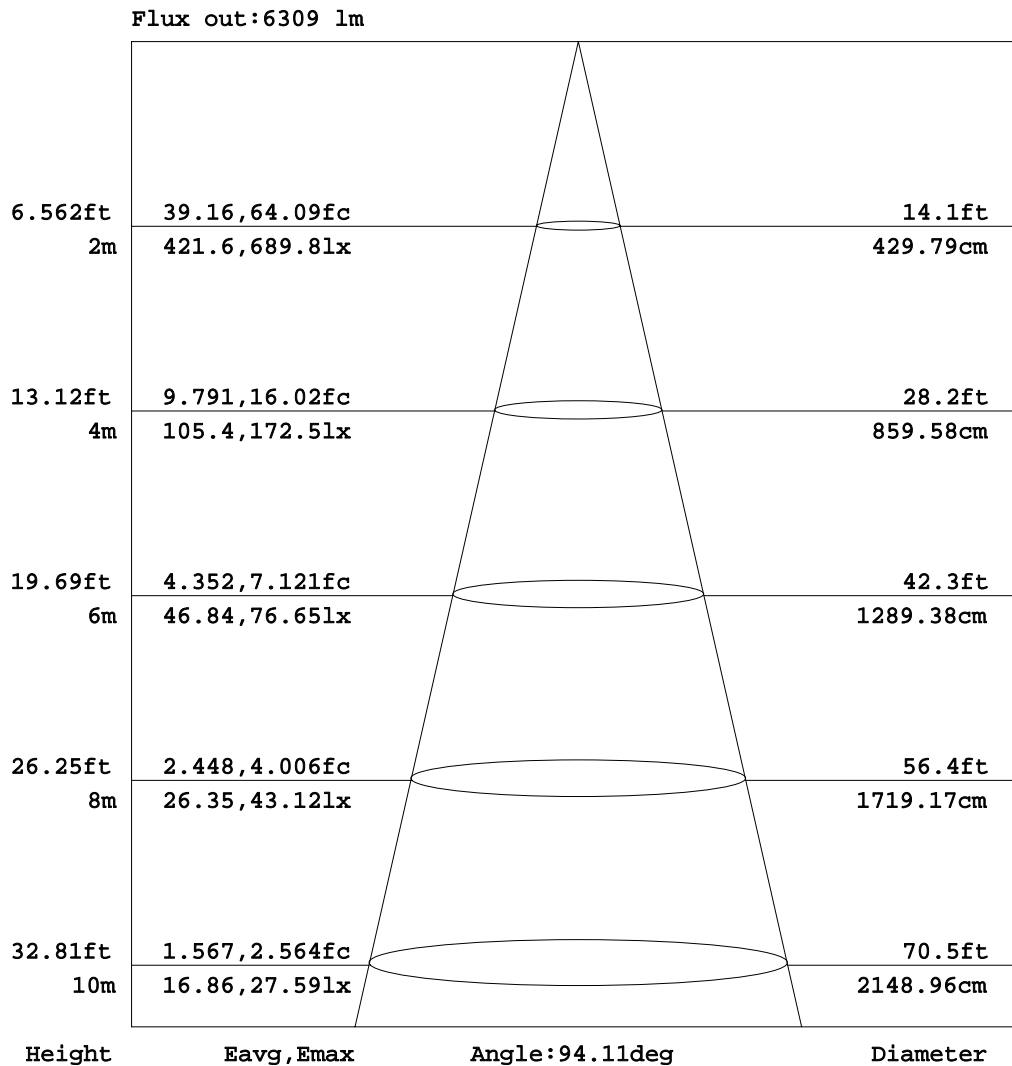


C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

AAI Figure

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:



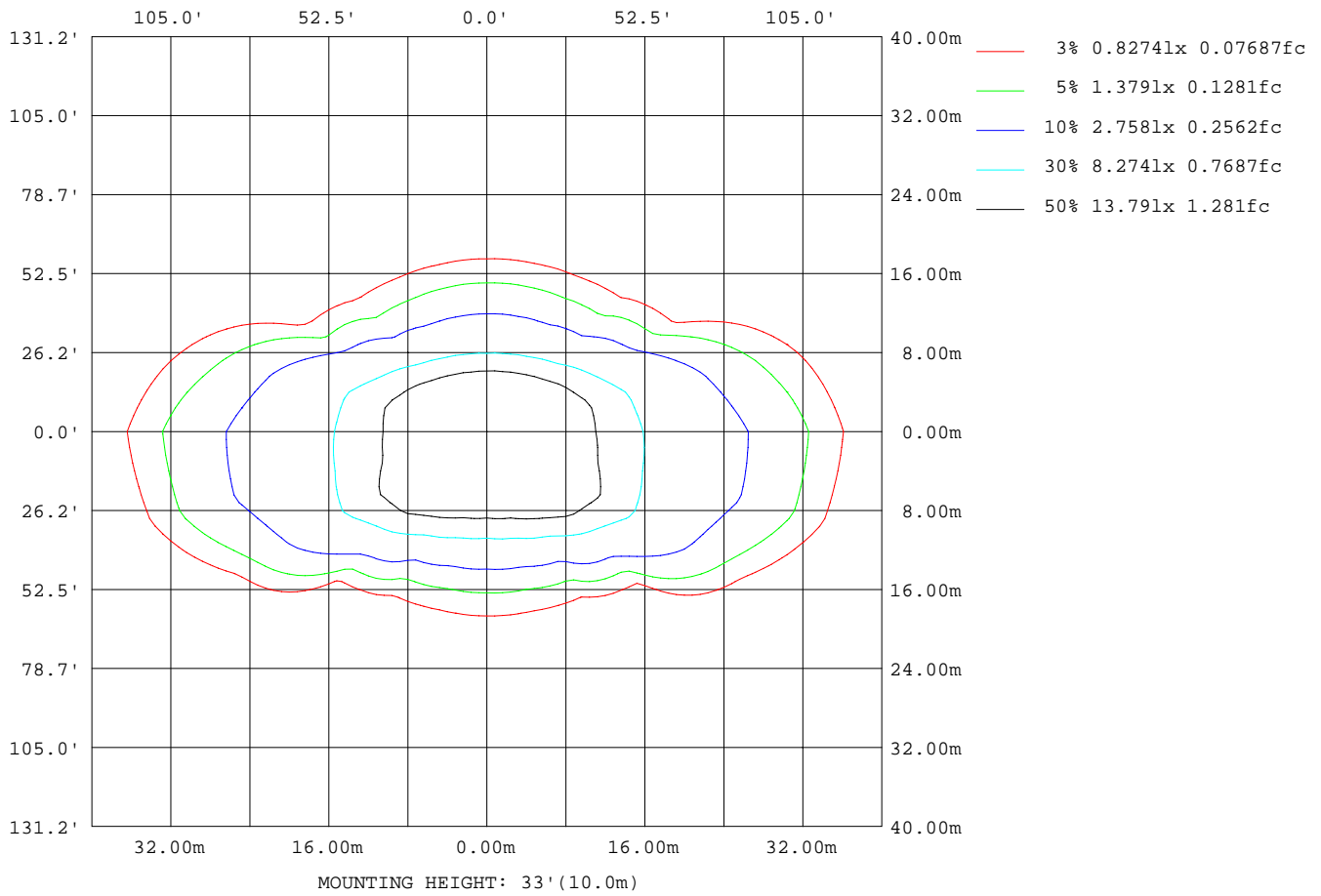
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

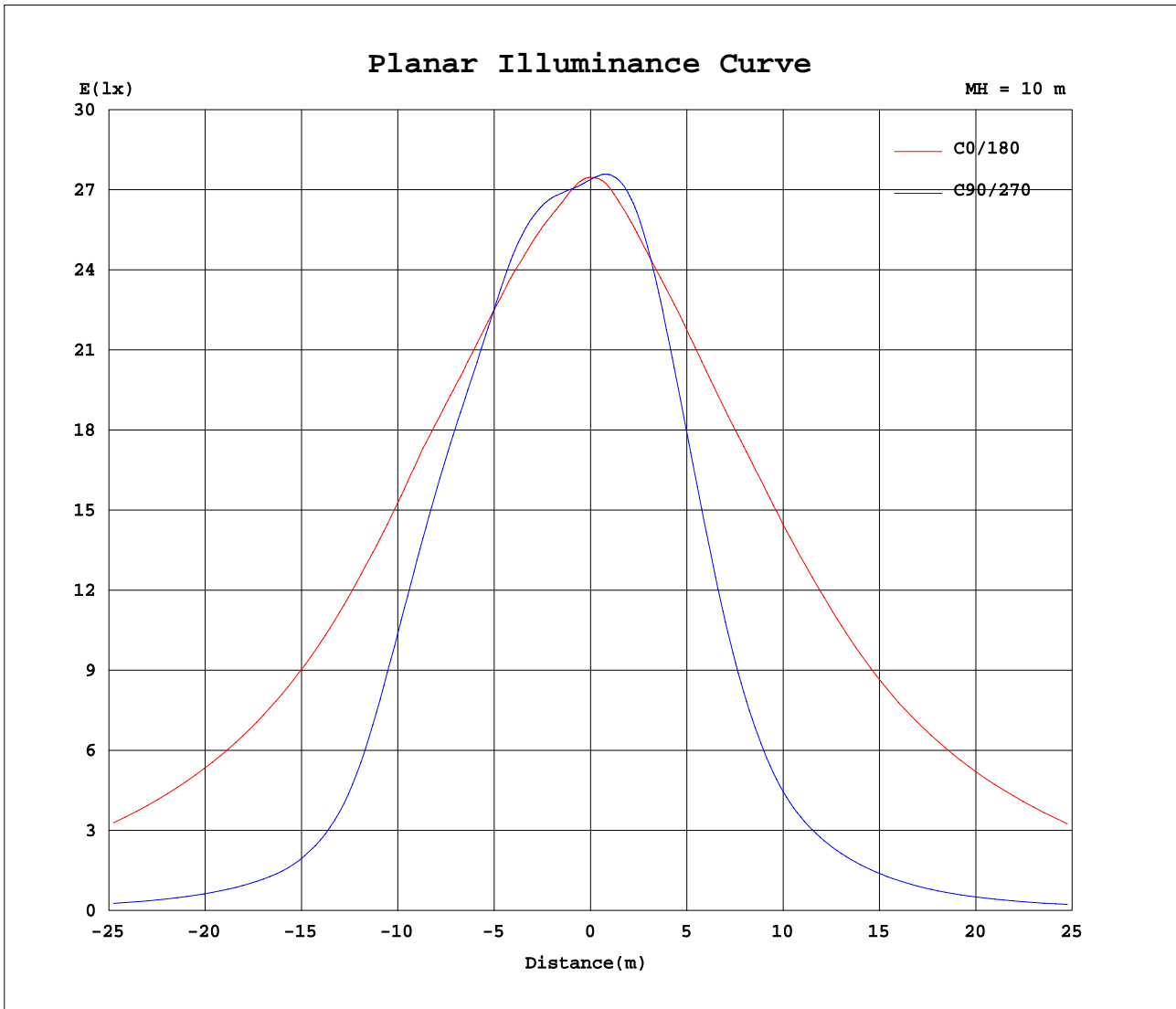
Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2015-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity: 65.0%
 Test Distance: 8.000m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.1V I:0.5830A P:120.8W PF:0.9410 Lamp Flux:13312.2x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:3
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGTING	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(DEG) γ (DEG)	285	300	315	330	345														
0	2742	2742	2742	2742	2742														
5	2793	2788	2778	2766	2751														
10	2842	2835	2820	2802	2774														
15	2846	2860	2871	2867	2841														
20	2774	2842	2916	2965	2957														
25	2625	2766	2936	3079	3116														
30	2391	2615	2923	3206	3320														
35	2064	2364	2827	3343	3582														
40	1691	1999	2591	3428	3917														
45	1328	1584	2208	3357	4271														
50	1071	1200	1726	3083	4563														
55	892	963	1220	2597	4702														
60	709	783	938	1890	4634														
65	539	585	718	1199	4305														
70	402	413	494	785	3702														
75	295	287	316	416	2211														
80	249	239	212	220	819														
85	149	123	121	158	400														
90	88.4	72.7	74.7	87.2	105														

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-11-08

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
 Humidity:65.0%
 Test Distance:8.000m [K=1.0000]
 Remarks: 单组30W 4组