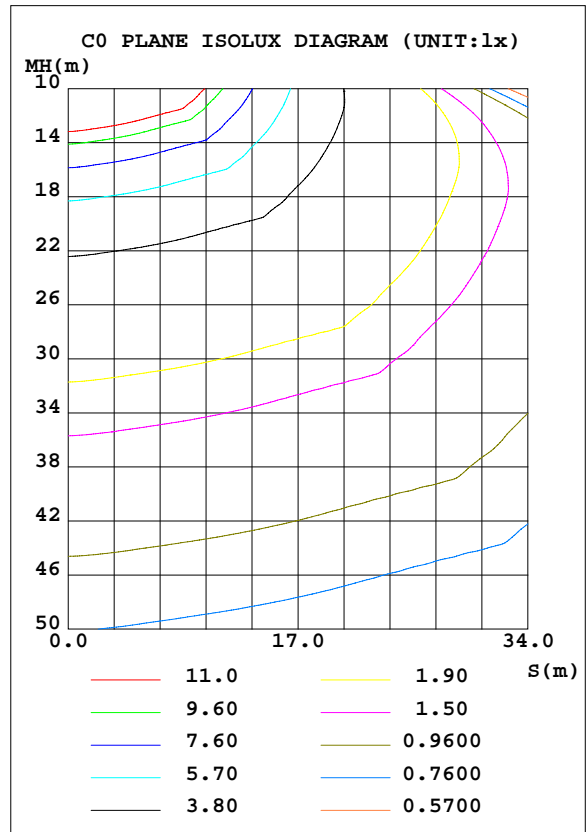
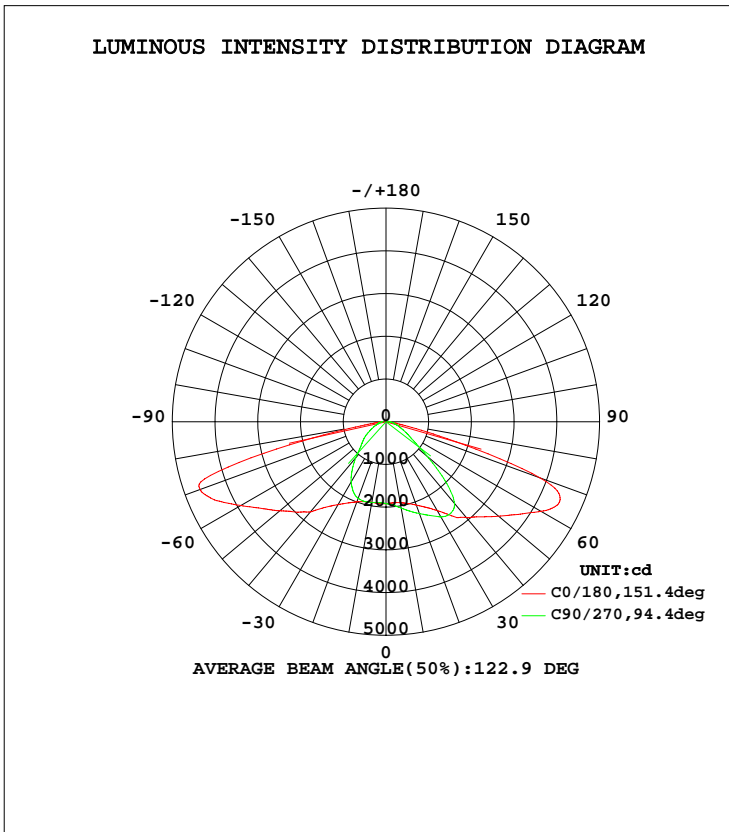


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	QH-STL-LD60S-100W	Imax(cd)	4982	S/MH(C0/180)	2.18
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	1.20
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	9570.6	$\eta$ UP, DN(C0-180)	0.0, 58.8
NOMINAL FLUX(lm)	9570.6	CIE CLASS	DIRECT	$\eta$ UP, DN(C180-360)	0.0, 41.2
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	220.3	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.55



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.279  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks: 2

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1907	1934	1962	1943	1921	1908	1901	1899	0- 5	45.87	45.87	0.48,0.48
10	1925	1981	2053	1984	1916	1911	1918	1911	5- 10	138.5	184.3	1.93,1.93
15	1983	2074	2167	2055	1938	1930	1933	1947	10- 15	234.5	418.8	4.38,4.38
20	2077	2222	2287	2166	1996	1965	1908	2000	15- 20	336.1	754.9	7.89,7.89
25	2209	2418	2420	2320	2099	2010	1809	2052	20- 25	444.7	1200	12.5,12.5
30	2403	2687	2573	2522	2240	2041	1630	2059	25- 30	561.1	1761	18.4,18.4
35	2689	3107	2626	2821	2438	2004	1383	1989	30- 35	687.5	2448	25.6,25.6
40	2929	3550	2495	3209	2756	1886	1104	1807	35- 40	815.9	3264	34.1,34.1
45	3149	3929	1958	3610	2991	1631	849.8	1476	40- 45	925.6	4190	43.8,43.8
50	3440	3664	1261	3612	3245	1258	711.1	1035	45- 50	981.5	5171	54,54
55	3781	2462	809.0	2714	3542	835.7	587.6	741.0	50- 55	973.8	6145	64.2,64.2
60	4194	1084	587.3	1494	3922	669.8	453.6	595.7	55- 60	928.0	7073	73.9,73.9
65	4474	505.8	431.6	657.7	4369	512.0	350.5	403.9	60- 65	852.8	7926	82.8,82.8
70	3834	304.4	322.7	382.7	4630	339.3	267.0	264.5	65- 70	743.9	8670	90.6,90.6
75	1289	197.4	226.6	252.2	3270	225.3	186.5	176.7	70- 75	512.4	9182	95.9,95.9
80	326.3	135.8	187.7	169.3	730.0	151.1	166.9	124.6	75- 80	224.1	9406	98.3,98.3
85	123.8	99.02	109.2	118.5	201.8	102.1	111.5	103.2	80- 85	103.7	9510	99.4,99.4
90	43.09	43.73	34.80	74.88	74.74	72.95	70.72	39.04	85- 90	60.40	9571	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			

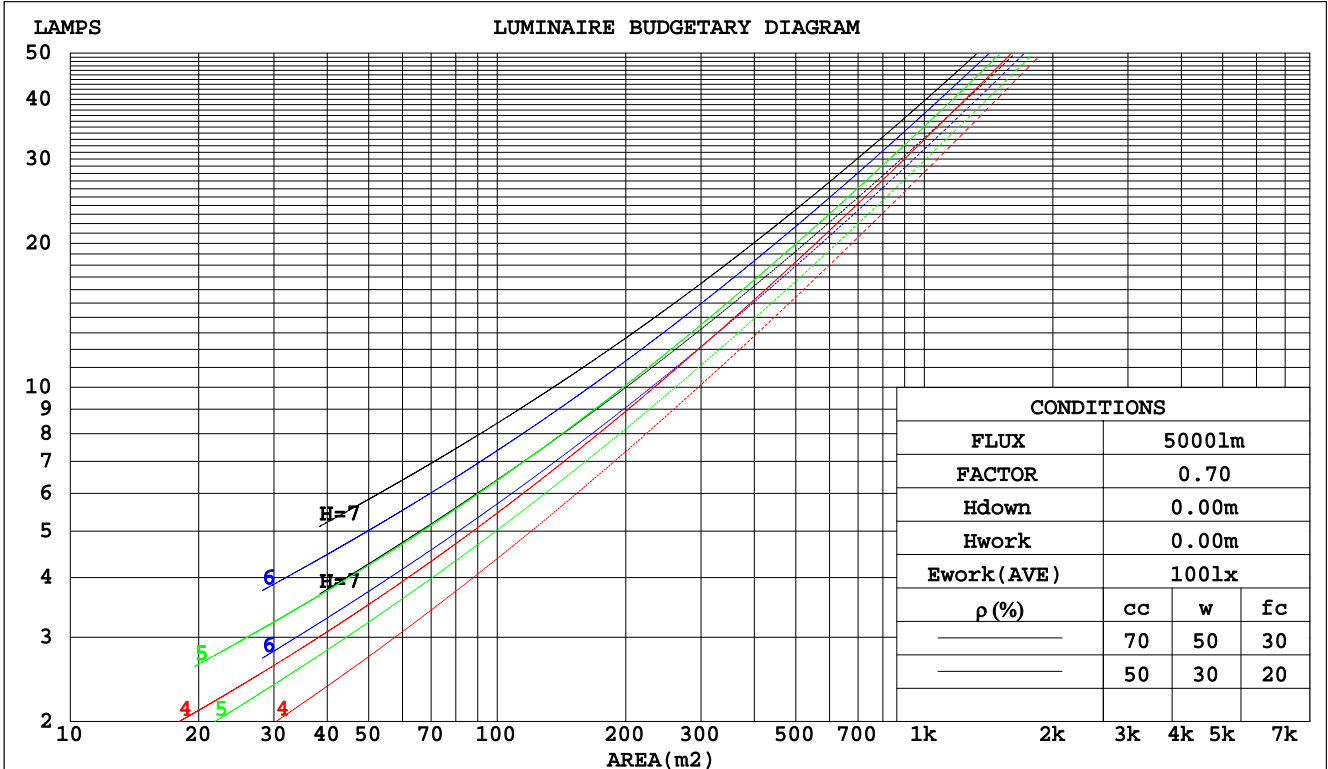
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

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: 2

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	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	1.03	.98	.94	1.00	.96	.92	.96	.93	.89	.92	.89	.87	.89	.86	.84	.82
2.0	.88	.81	.74	.86	.79	.73	.82	.77	.72	.79	.74	.70	.76	.72	.68	.66
3.0	.76	.67	.60	.74	.66	.59	.71	.64	.58	.68	.62	.57	.66	.61	.56	.54
4.0	.66	.57	.49	.65	.56	.49	.62	.54	.48	.60	.53	.48	.58	.52	.47	.44
5.0	.58	.48	.41	.57	.48	.41	.55	.47	.41	.53	.46	.40	.51	.45	.40	.37
6.0	.52	.42	.35	.51	.42	.35	.49	.41	.35	.47	.40	.34	.45	.39	.34	.32
7.0	.46	.37	.30	.45	.36	.30	.44	.36	.30	.42	.35	.30	.41	.34	.29	.27
8.0	.42	.33	.26	.41	.32	.26	.40	.32	.26	.38	.31	.26	.37	.31	.26	.24
9.0	.38	.29	.23	.37	.29	.23	.36	.28	.23	.35	.28	.23	.34	.28	.23	.21
10.0	.35	.26	.21	.34	.26	.21	.33	.26	.21	.32	.25	.20	.31	.25	.20	.18



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

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: 2

WEC AND CCEC

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	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	.332	.189	.060	.325	.185	.059	.312	.179	.057	.299	.173	.055	.288	.167	.054	
2.0	.315	.173	.053	.309	.170	.052	.297	.165	.051	.286	.160	.050	.276	.156	.049	
3.0	.292	.155	.047	.286	.153	.046	.276	.149	.045	.266	.146	.045	.257	.142	.044	
4.0	.269	.140	.041	.264	.138	.041	.255	.135	.040	.246	.132	.040	.238	.129	.039	
5.0	.248	.126	.037	.243	.125	.036	.235	.122	.036	.227	.120	.036	.220	.117	.035	
6.0	.229	.115	.033	.225	.114	.033	.218	.112	.032	.211	.109	.032	.204	.107	.032	
7.0	.212	.105	.030	.209	.104	.030	.202	.102	.029	.196	.100	.029	.190	.099	.029	
8.0	.198	.097	.027	.194	.096	.027	.188	.094	.027	.183	.093	.027	.177	.091	.027	
9.0	.185	.089	.025	.182	.089	.025	.176	.087	.025	.171	.086	.025	.166	.085	.024	
10.0	.173	.083	.023	.170	.082	.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	.133	.156	.134	.114	.106	.092	.079	.061	.053	.046	.020	.017	.015	
2.0	.175	.132	.095	.150	.113	.082	.103	.078	.057	.059	.046	.034	.019	.015	.011	
3.0	.169	.114	.071	.145	.099	.062	.099	.069	.043	.057	.040	.026	.018	.013	.008	
4.0	.162	.101	.055	.139	.088	.048	.095	.061	.034	.055	.036	.020	.018	.012	.007	
5.0	.155	.091	.045	.133	.079	.039	.091	.055	.027	.053	.032	.016	.017	.011	.005	
6.0	.147	.083	.037	.127	.072	.032	.087	.050	.023	.051	.030	.014	.016	.010	.004	
7.0	.141	.076	.031	.121	.066	.027	.084	.046	.019	.049	.027	.012	.016	.009	.004	
8.0	.134	.071	.027	.115	.061	.024	.080	.043	.017	.046	.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:2014-10-31

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: 2

UGR(Unified Glare Rating) Table

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm										
NAME: LED STREET LIGHT					TYPE:IP66			WEIGHT:2		
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	39.3	41.0	39.6	41.2	41.4	30.7	32.4	31.0	32.6	32.8
3H	42.2	43.7	42.5	44.0	44.2	30.9	32.4	31.2	32.7	32.9
4H	42.5	44.0	42.8	44.2	44.5	31.0	32.5	31.4	32.8	33.0
6H	42.5	43.8	42.8	44.1	44.4	31.2	32.6	31.5	32.9	33.1
8H	42.4	43.8	42.8	44.0	44.3	31.3	32.6	31.7	32.9	33.2
12H	42.4	43.7	42.8	44.0	44.3	31.4	32.7	31.8	33.0	33.3
4H 2H	39.2	40.7	39.5	40.9	41.2	32.5	34.0	32.9	34.3	34.5
3H	42.1	43.4	42.4	43.7	44.0	32.7	33.9	33.0	34.2	34.5
4H	42.4	43.6	42.8	43.9	44.3	32.8	33.9	33.2	34.3	34.6
6H	42.5	43.5	42.9	43.9	44.2	32.9	34.0	33.4	34.3	34.7
8H	42.5	43.4	42.9	43.8	44.2	33.1	34.0	33.5	34.4	34.8
12H	42.4	43.3	42.9	43.7	44.1	33.2	34.1	33.7	34.5	34.9
8H 4H	42.3	43.3	42.7	43.6	44.0	33.1	34.1	33.6	34.5	34.9
6H	42.4	43.2	42.8	43.6	44.0	33.4	34.2	33.8	34.6	35.0
8H	42.4	43.1	42.8	43.5	44.0	33.6	34.3	34.0	34.7	35.2
12H	42.4	43.0	42.9	43.5	43.9	33.8	34.4	34.3	34.9	35.4
12H 4H	42.3	43.2	42.7	43.5	43.9	33.1	34.0	33.6	34.4	34.8
6H	42.3	43.0	42.8	43.5	43.9	33.4	34.1	33.9	34.5	35.0
8H	42.4	43.0	42.8	43.4	43.9	33.6	34.2	34.1	34.7	35.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.6					+ 1.5 / - 2.4				
1.5H	+ 1.0 / - 1.1					+ 1.4 / - 1.9				
2.0H	+ 1.1 / - 1.3					+ 2.5 / - 3.0				

CIE Pub.117 Corrected 9571 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.8)

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

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: 2

UTILIZATION FACTORS TABLE

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	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	31	50	38	31	49	38	31	23
0.80	62	49	41	61	48	40	59	48	40	32
1.00	71	59	50	70	58	50	67	60	50	42
1.25	79	67	59	77	66	59	74	65	58	50
1.50	84	73	65	82	72	65	79	70	64	56
2.00	92	83	75	90	81	75	86	79	73	65
2.50	97	88	81	94	87	80	90	84	79	70
3.00	100	93	87	98	91	86	94	88	84	75
4.00	105	99	94	102	97	92	98	93	90	80
5.00	108	102	98	105	100	96	101	97	93	84
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:2014-10-31

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.279  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks: 2

ISOCANDELA DIAGRAM

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

4189.9 lm

%lum = 43.8%

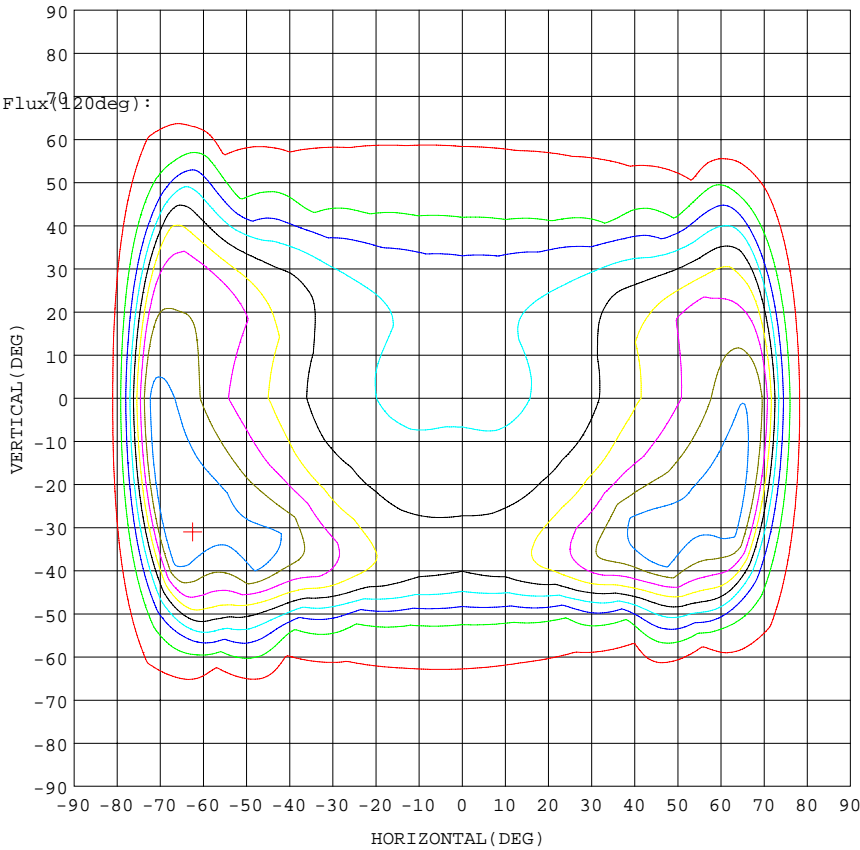
%lamp = 43.8%

Conical surface Flux(70deg):

7073.3 lm

%lum = 73.9%

%lamp = 73.9%



I<sub>max</sub>: 4973 (H-62.5, V-31.0)

(At: C=30.0, Gamma=53.5)

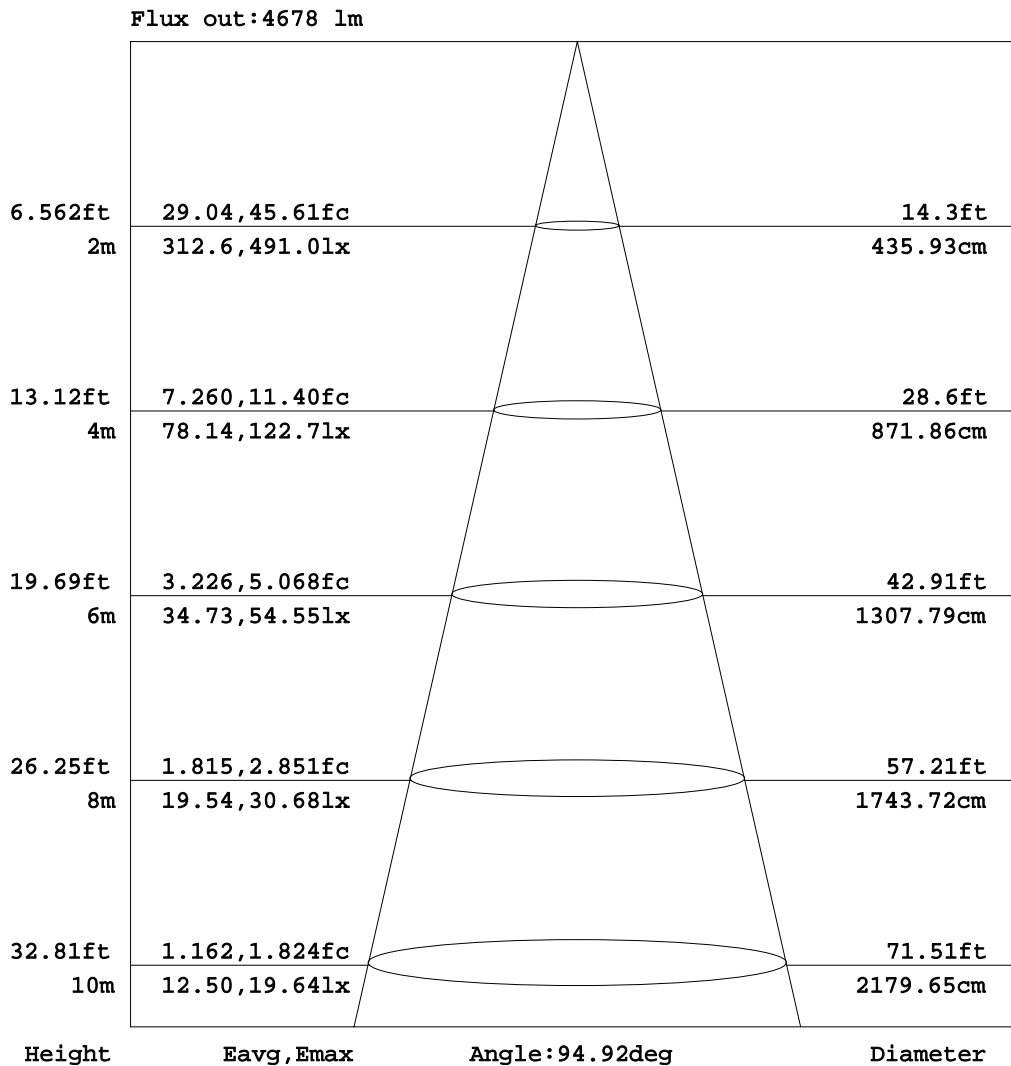
UNIT: cd

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2014-10-31

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: 2

AAI Figure

Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



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

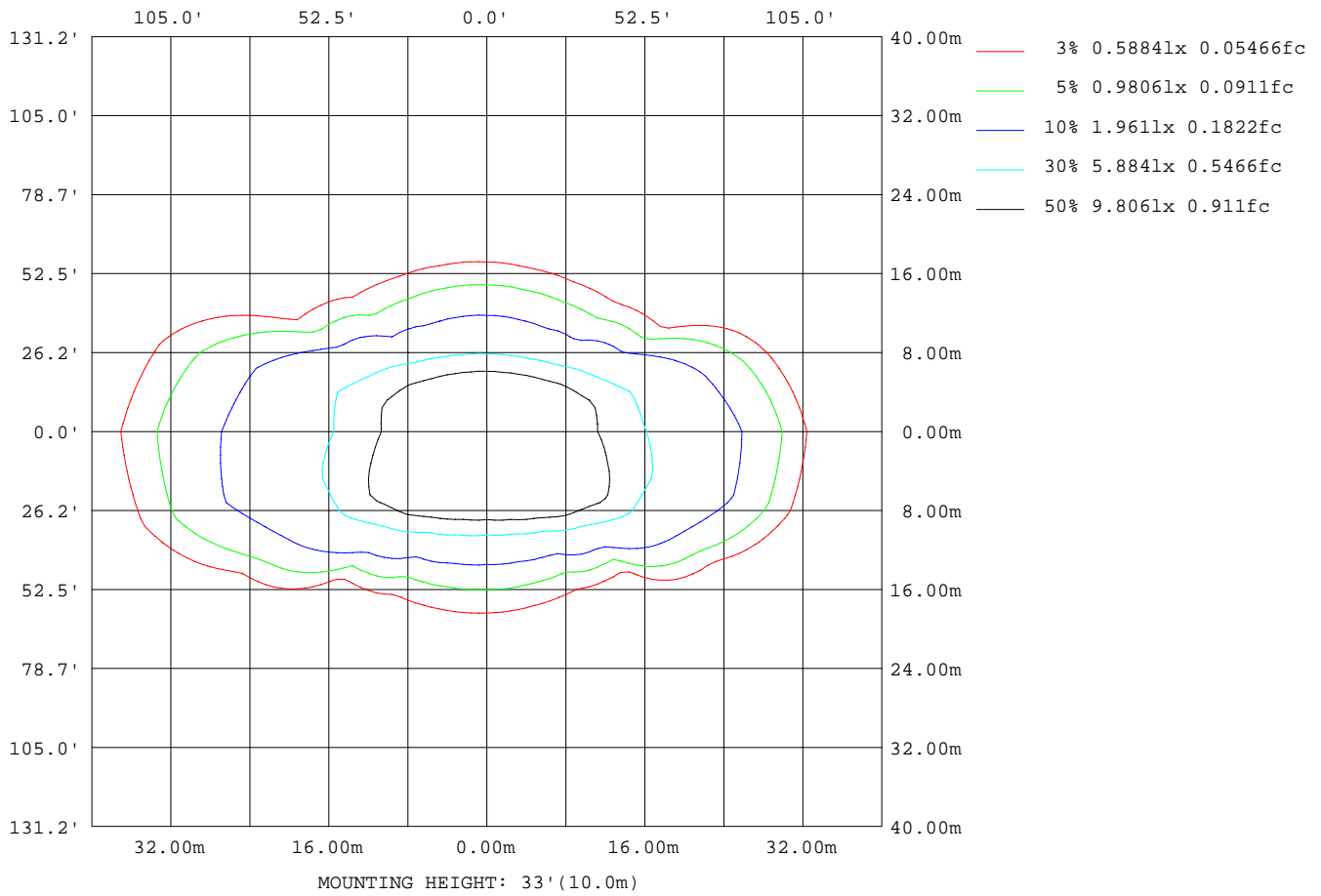
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

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: 2



ISOLUX DIAGRAM

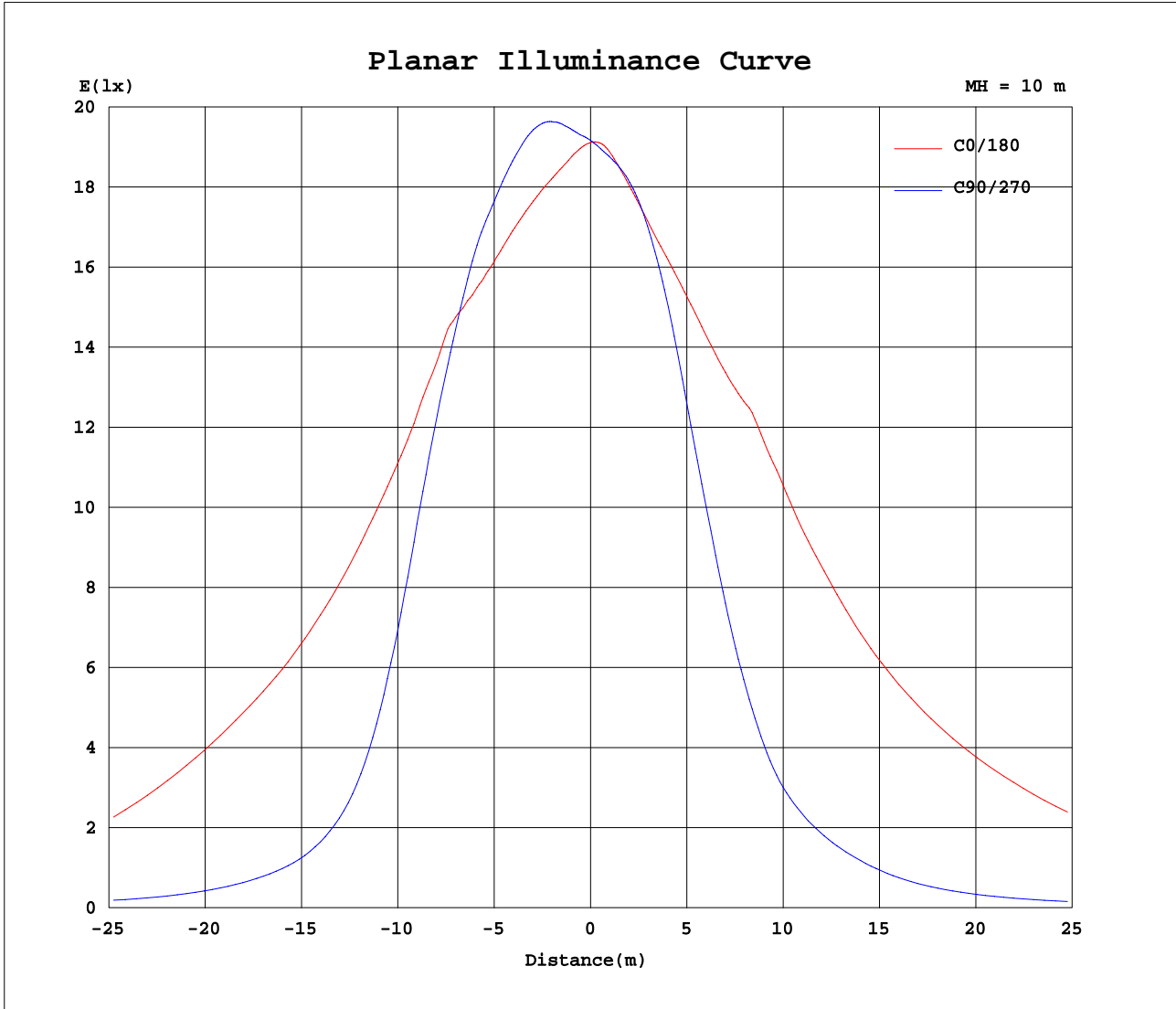
Test:U:220.3V I:0.4730A P:101.2W PF:0.9710 Lamp Flux:9570.6x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:2
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-10-31

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: 2

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2014-10-31

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: 2



