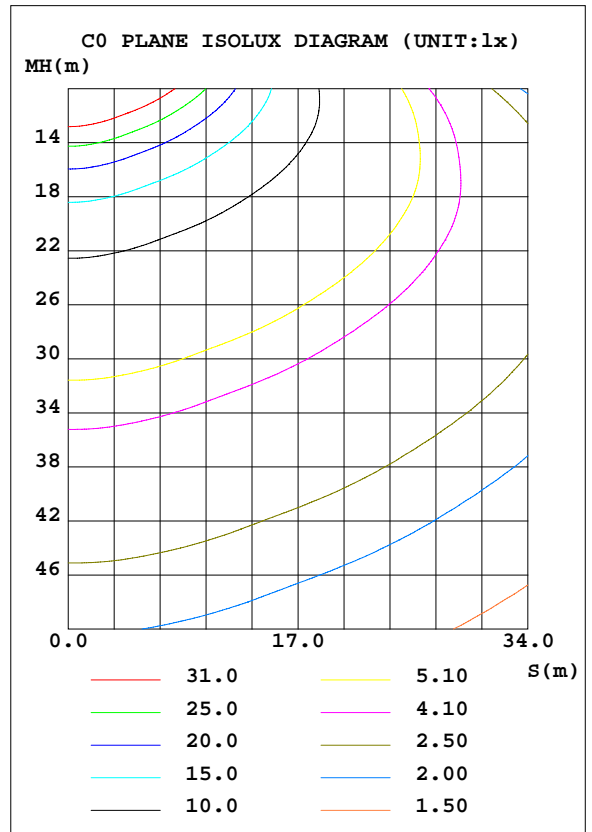
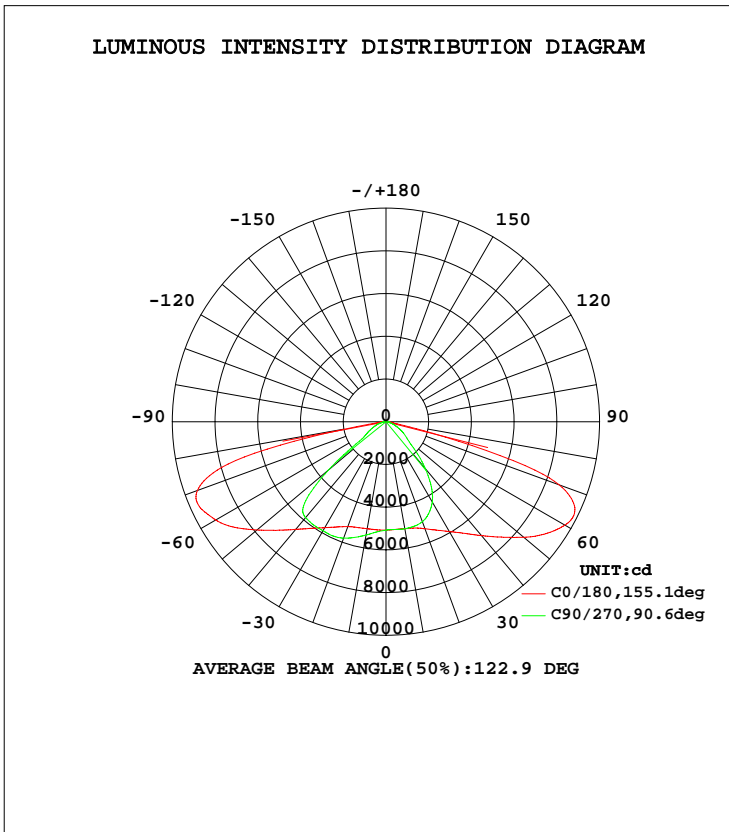


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 118.40 lm/W			
MODEL	QH-STL-LD120S-180W	Imax(cd)	11336	S/MH(C0/180)	2.01
NOMINAL POWER(W)	188	LOR(%)	100.0	S/MH(C90/270)	1.59
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	22307	η UP, DN(C0-180)	0.0, 58.9
NOMINAL FLUX(lm)	22307.5	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 41.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	219.8	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:2014-03-17

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: LED:XTE R5 5700K

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	ℓlum
5	508.1	514.9	518.3	511.9	506.1	505.2	506.4	507.0	0- 5	121.6	121.6	0.55
10	508.5	526.4	538.5	522.0	508.7	509.3	508.6	508.8	5- 10	367.2	488.8	2.19
15	512.9	541.2	560.5	540.9	515.4	513.7	507.0	510.7	10- 15	618.0	1107	4.96
20	522.6	560.6	580.2	567.8	533.2	520.5	498.1	512.7	15- 20	875.8	1983	8.89
25	543.7	588.8	589.7	602.9	560.0	528.5	473.5	516.6	20- 25	1142	3124	14
30	572.7	622.9	589.6	651.5	593.5	532.6	433.5	519.3	25- 30	1412	4537	20.3
35	609.6	665.9	590.7	705.4	638.0	523.6	369.8	515.8	30- 35	1684	6220	27.9
40	658.1	717.4	586.1	773.8	695.9	478.1	287.1	489.5	35- 40	1952	8173	36.6
45	718.8	796.8	538.8	886.8	763.8	394.1	202.5	431.0	40- 45	2219	10391	46.6
50	788.4	895.8	352.3	974.7	841.6	277.9	136.9	338.9	45- 50	2410	12801	57.4
55	862.8	783.4	130.7	767.0	913.9	147.6	108.6	212.3	50- 55	2367	15169	68
60	920.2	377.9	97.08	322.8	967.5	103.4	82.74	123.5	55- 60	2132	17301	77.6
65	957.2	110.7	70.26	87.54	976.0	74.39	56.63	95.90	60- 65	1830	19131	85.8
70	938.9	57.11	50.92	42.51	860.2	37.59	38.73	52.29	65- 70	1504	20636	92.5
75	765.1	33.27	30.83	27.75	350.8	24.26	21.46	29.20	70- 75	1044	21679	97.2
80	177.2	22.90	20.39	18.01	35.68	15.88	16.70	19.29	75- 80	432.3	22111	99.1
85	27.79	14.84	10.63	10.21	15.99	9.234	9.994	12.98	80- 85	135.3	22247	99.7
90	9.540	6.701	1.610	4.251	3.740	3.747	3.660	6.497	85- 90	60.76	22307	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:×10cd								UNIT:lm			

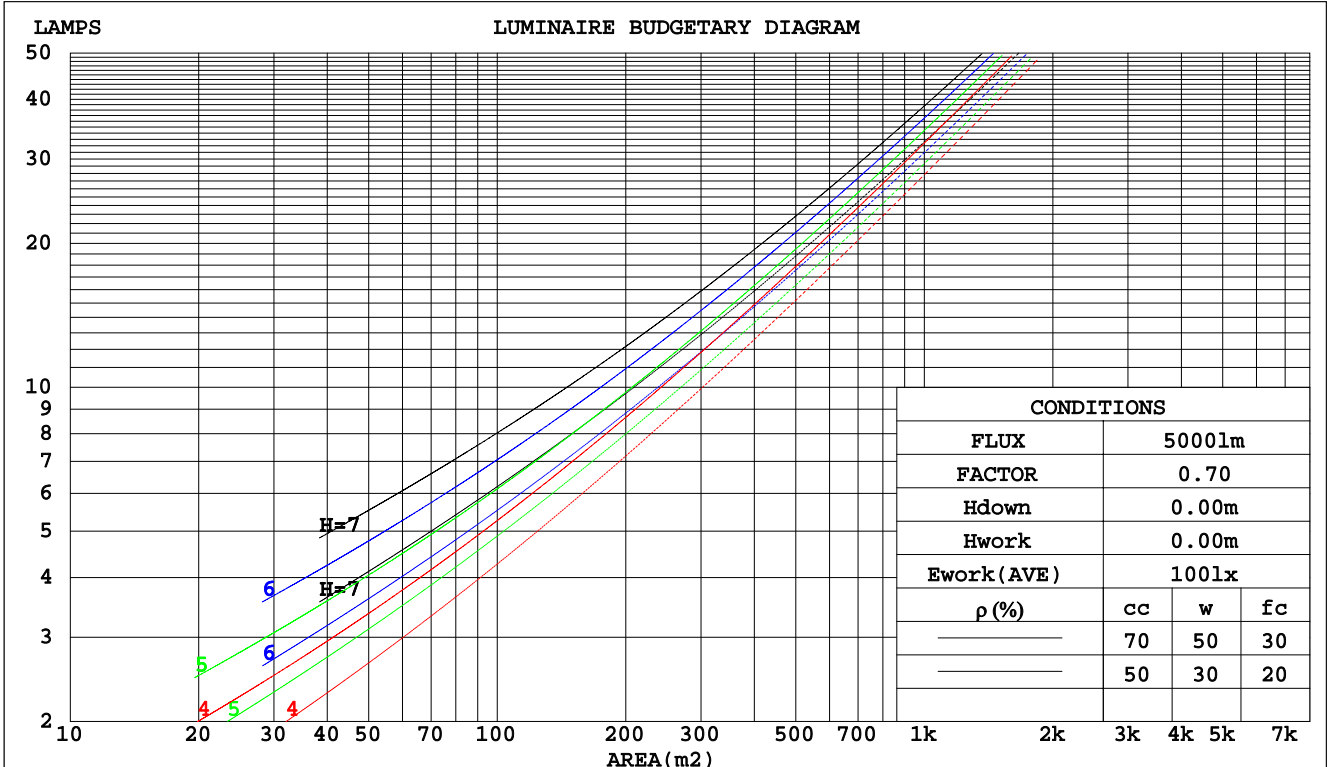
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
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	.00
1.0	1.04	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.91	.88	.90	.87	.85	.83
2.0	.89	.82	.76	.87	.81	.75	.84	.78	.74	.81	.76	.72	.78	.74	.70	.68
3.0	.78	.69	.62	.76	.68	.62	.73	.66	.60	.70	.64	.59	.67	.63	.58	.56
4.0	.68	.59	.51	.66	.58	.51	.64	.56	.50	.61	.55	.50	.59	.54	.49	.47
5.0	.60	.50	.43	.59	.50	.43	.56	.49	.43	.54	.48	.42	.53	.46	.42	.39
6.0	.53	.44	.37	.52	.43	.37	.50	.42	.36	.49	.42	.36	.47	.41	.36	.34
7.0	.48	.39	.32	.47	.38	.32	.45	.37	.32	.44	.37	.31	.42	.36	.31	.29
8.0	.43	.34	.28	.42	.34	.28	.41	.33	.28	.40	.33	.28	.39	.32	.27	.25
9.0	.39	.31	.25	.39	.30	.25	.37	.30	.25	.36	.29	.24	.35	.29	.24	.22
10.0	.36	.28	.22	.35	.27	.22	.34	.27	.22	.33	.27	.22	.33	.26	.22	.20

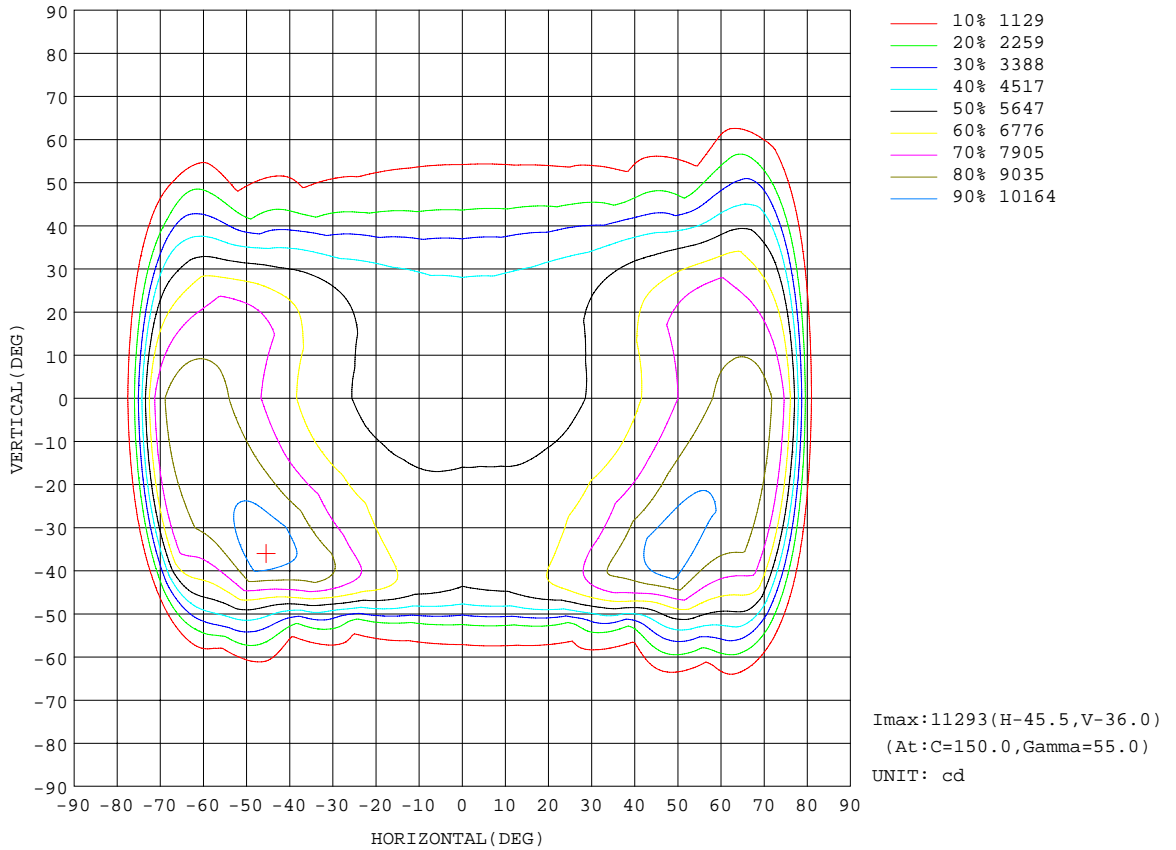


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2014-03-17

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: LED:XTE R5 5700K

ISOCANDELA DIAGRAM

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

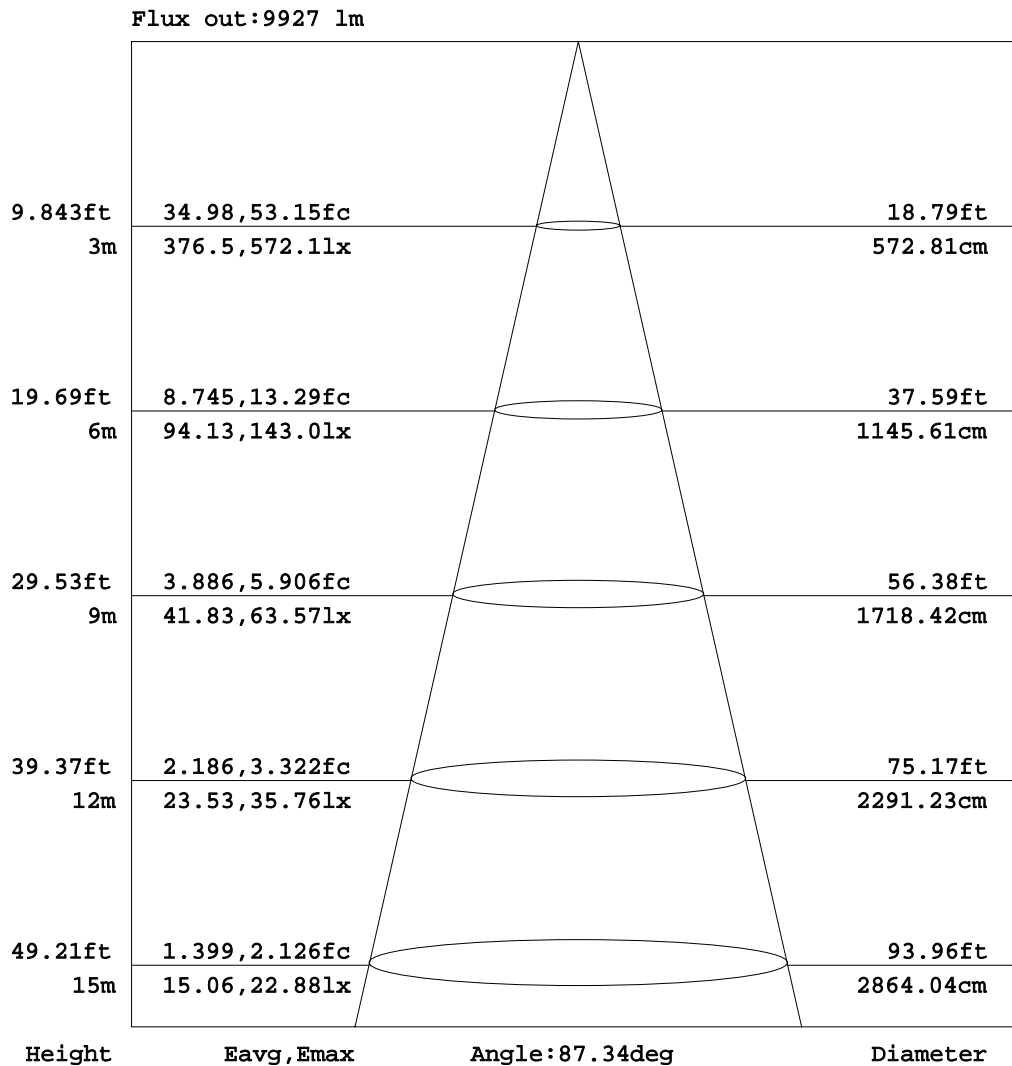


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K

AAI Figure

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



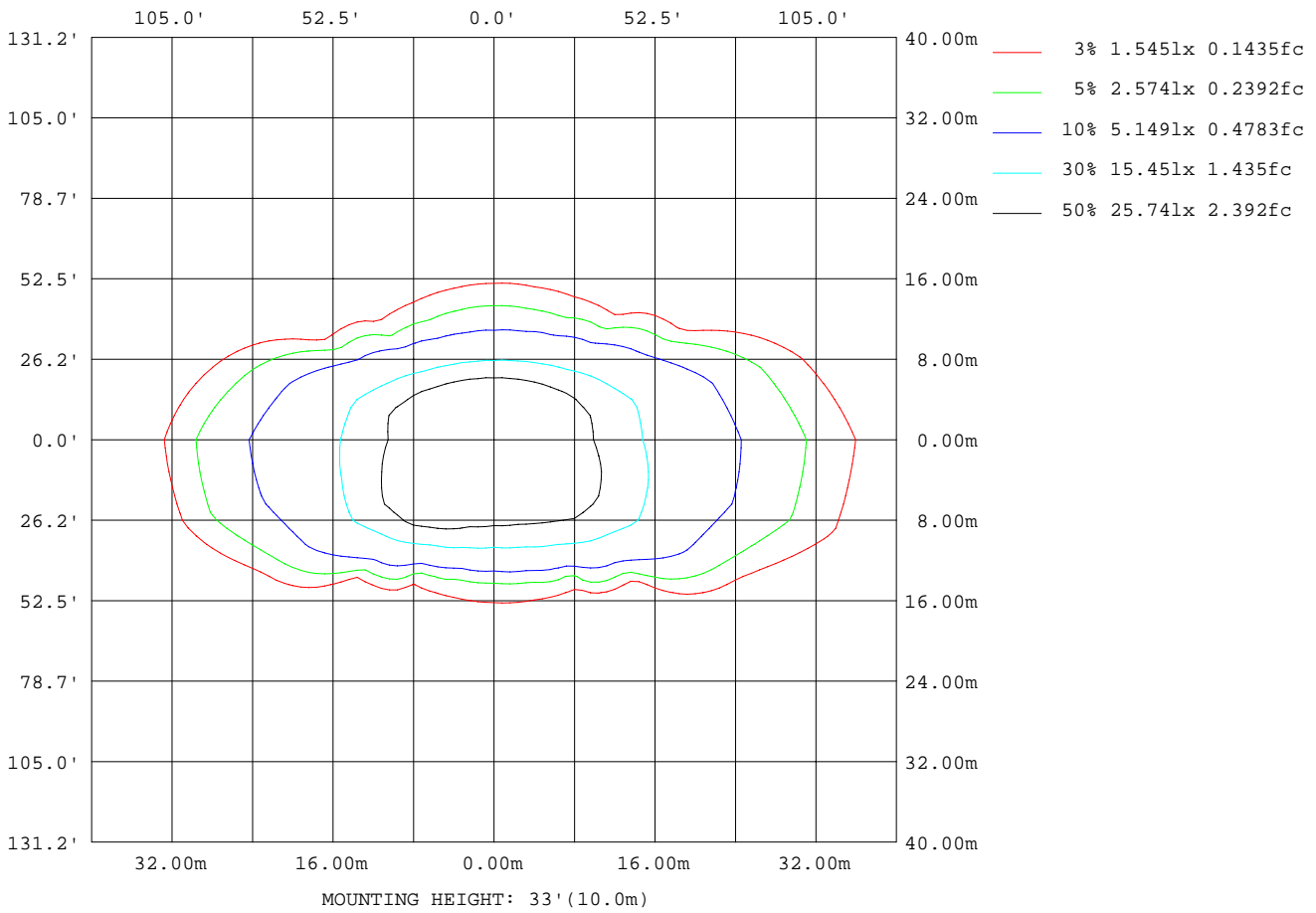
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K

ISOLUX DIAGRAM

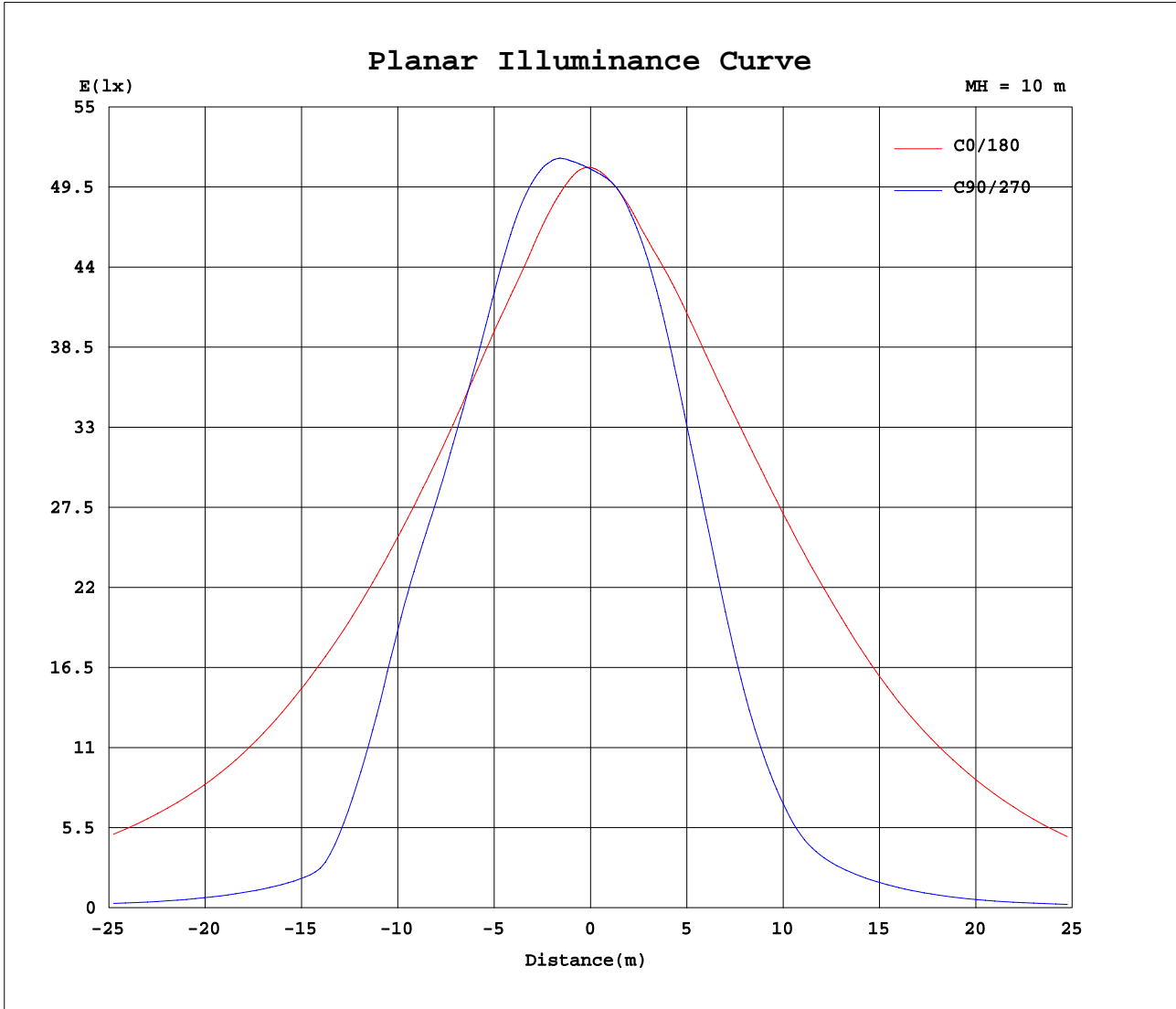
Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2014-03-17

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: LED:XTE R5 5700K

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: x10cd

C( DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	507	507	507	507	507	507	507	507	507	507	507	507	507	507	507	507	507	507	507
5	508	510	512	515	517	518	518	517	515	512	510	508	506	505	505	505	505	506	506
10	509	512	519	526	534	538	538	535	529	522	516	512	509	507	508	509	509	509	509
15	513	520	530	541	552	559	560	555	548	541	532	522	515	514	515	514	510	508	507
20	523	534	551	561	571	579	580	574	571	568	558	544	533	532	528	520	511	502	498
25	544	561	579	589	588	591	590	587	596	603	598	579	560	559	547	528	503	481	474
30	573	597	623	623	602	594	590	592	621	652	649	621	593	593	573	533	483	445	434
35	610	642	677	666	619	598	591	603	651	705	714	675	638	637	605	524	441	384	370
40	658	704	751	717	649	599	586	616	699	774	805	745	696	700	634	478	362	300	287
45	719	791	850	797	689	579	539	603	756	887	919	839	764	782	619	394	268	212	202
50	788	899	966	896	604	413	352	409	619	975	1045	934	842	843	550	278	165	140	137
55	863	990	1102	783	299	154	131	133	235	767	1134	989	914	843	425	148	114	109	109
60	920	1025	1056	378	113	103	97.1	95.7	99.5	323	987	980	967	780	244	103	89.8	83.4	82.7
65	957	992	780	111	81.1	73.7	70.3	67.6	63.4	87.5	663	927	976	653	123	74.4	59.3	56.9	56.6
70	939	909	410	57.1	52.4	51.8	50.9	49.8	42.3	42.5	297	808	860	464	59.3	37.6	37.1	38.5	38.7
75	765	671	94.4	33.3	36.6	36.9	30.8	35.6	31.0	27.8	39.5	268	351	159	26.2	24.3	24.5	24.5	21.5
80	177	114	27.2	22.9	23.8	22.7	20.4	21.3	20.6	18.0	20.4	61.6	35.7	37.4	17.4	15.9	17.7	17.7	16.7
85	27.8	44.4	16.1	14.8	15.2	14.7	10.6	15.6	10.5	10.2	10.5	22.6	16.0	21.7	10.4	9.23	9.46	11.2	9.99
90	9.54	15.1	7.71	6.70	6.79	4.97	1.61	4.44	4.21	4.25	4.17	5.15	3.74	5.33	4.51	3.75	4.19	4.41	3.66

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K



LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.8V I:0.8770A P:188.4W PF:0.9770 Lamp Flux:22307.5x1 lm		
NAME: LED STREET LIGHT	TYPE:IP66	WEIGHT:5
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: x10cd

C( DEG) γ (DEG)	285	300	315	330	345															
0	507	507	507	507	507															
5	507	507	507	507	508															
10	509	509	509	508	508															
15	507	508	511	512	511															
20	500	506	513	519	520															
25	480	498	517	531	540															
30	445	479	519	551	568															
35	389	445	516	578	604															
40	310	381	490	609	652															
45	224	296	431	624	720															
50	145	195	339	595	797															
55	113	125	212	520	847															
60	86.9	101	123	384	841															
65	56.4	70.5	95.9	212	777															
70	38.6	38.5	52.3	111	649															
75	26.9	27.1	29.2	44.3	457															
80	18.3	19.4	19.3	21.8	135															
85	12.0	11.7	13.0	15.8	45.5															
90	6.65	5.66	6.50	8.73	17.4															

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2014-03-17

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: LED:XTE R5 5700K