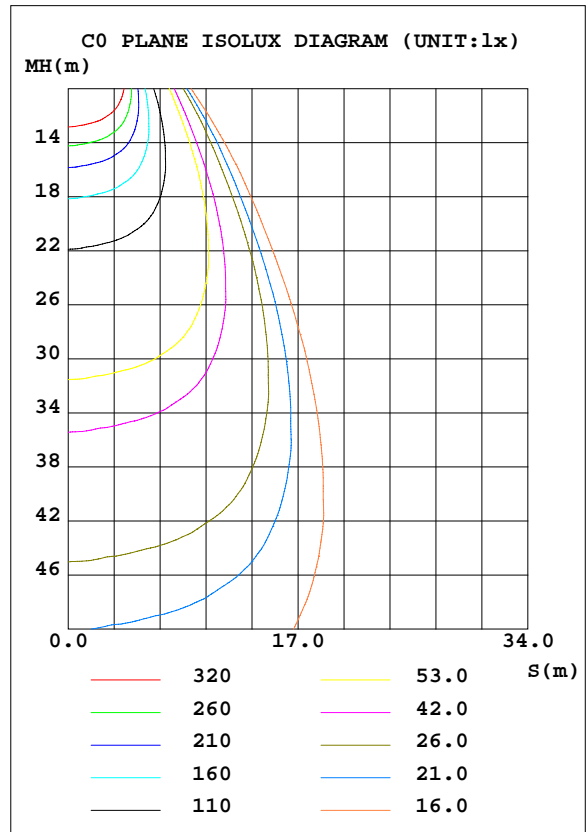
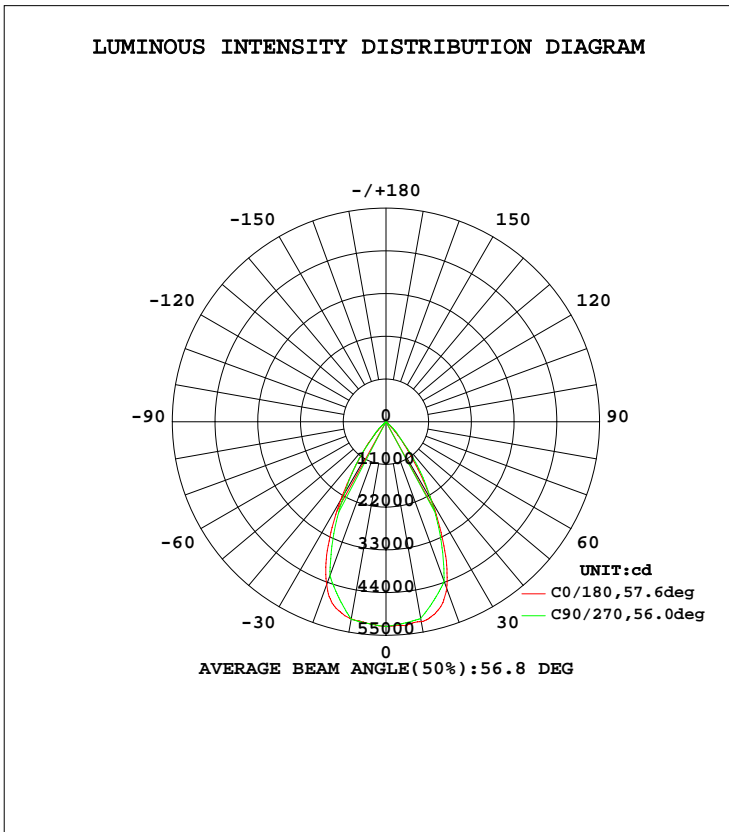


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	QH-HBZSL-500W	Imax(cd)	52750	S/MH(C0/180)	0.86
NOMINAL POWER(W)	480	LOR(%)	100.0	S/MH(C90/270)	0.83
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	44380	η UP, DN(C0-180)	0.0, 48.9
NOMINAL FLUX(lm)	44380.4	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 51.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	219.6	η down(%)	100.0	CIBSE SHR MAX	0.90



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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	ℓlum
5	5214	5182	5218	5232	5268	5212	5209	5194	0- 5	1251	1251	2.82
10	5153	5065	5163	5201	5227	5126	5145	5149	5- 10	3706	4957	11.2
15	4972	4775	4693	5009	5059	4911	4762	4972	10- 15	5956	10913	24.6
20	4469	4023	4222	4351	4567	4204	4379	4441	15- 20	7588	18501	41.7
25	3520	3089	3180	3422	3529	3310	3349	3611	20- 25	8094	26596	59.9
30	2352	2073	2137	2316	2360	2287	2318	2524	25- 30	7095	33691	75.9
35	1301	1194	1345	1293	1285	1330	1476	1472	30- 35	5181	38872	87.6
40	629.4	556.3	552.7	540.0	615.9	634.8	634.4	665.4	35- 40	3141	42013	94.7
45	190.6	225.0	298.6	220.0	191.1	257.3	339.3	274.8	40- 45	1475	43489	98
50	46.23	38.20	44.47	49.49	44.38	40.31	44.09	53.68	45- 50	512.8	44001	99.1
55	25.22	23.78	29.59	28.43	24.28	24.87	29.37	31.03	50- 55	164.6	44166	99.5
60	14.57	13.12	14.71	14.81	14.02	13.64	14.64	16.06	55- 60	93.29	44259	99.7
65	8.333	7.787	9.746	9.091	8.048	7.964	9.549	9.617	60- 65	55.21	44314	99.9
70	4.685	4.318	4.783	5.153	4.579	4.309	4.460	5.343	65- 70	33.22	44348	99.9
75	2.466	2.246	3.163	2.708	2.426	2.193	2.700	2.734	70- 75	18.68	44366	100
80	1.038	1.335	1.543	1.591	1.012	1.032	0.9387	1.290	75- 80	9.923	44376	100
85	0.2765	0.3727	0	0.4354	0.2780	0.1839	0	0.2261	80- 85	3.765	44380	100
90	0.0877	0	0	0	0.0762	0	0	0	85- 90	0.3973	44380	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			

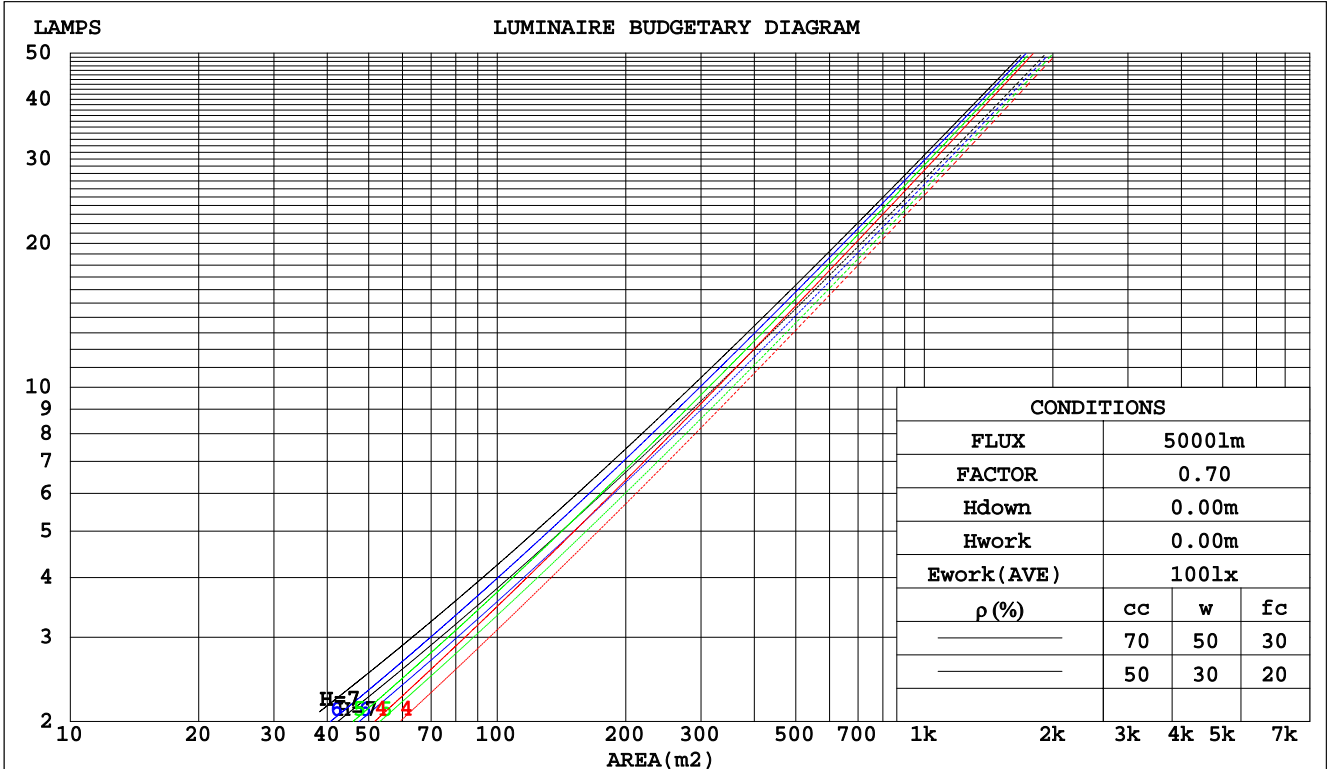
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
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	1.11	1.09	1.06	1.09	1.07	1.05	1.05	1.03	1.02	1.01	.00	.99	.98	.97	.96	.94
2.0	1.04	.00	.96	1.02	.98	.95	.99	.96	.93	.96	.93	.91	.93	.91	.89	.88
3.0	.97	.92	.88	.96	.91	.88	.93	.89	.86	.91	.87	.85	.88	.86	.84	.82
4.0	.91	.86	.81	.90	.85	.81	.88	.83	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.85	.80	.76	.84	.79	.75	.83	.78	.75	.81	.77	.74	.79	.76	.73	.72
6.0	.80	.75	.70	.80	.74	.70	.78	.73	.70	.77	.72	.69	.75	.72	.69	.67
7.0	.76	.70	.66	.75	.70	.66	.74	.69	.65	.73	.68	.65	.72	.68	.65	.63
8.0	.72	.66	.62	.71	.66	.62	.70	.65	.61	.69	.64	.61	.68	.64	.61	.60
9.0	.68	.62	.58	.67	.62	.58	.66	.61	.58	.65	.61	.58	.65	.60	.57	.56
10.0	.64	.59	.55	.64	.58	.55	.63	.58	.55	.62	.58	.54	.61	.57	.54	.53

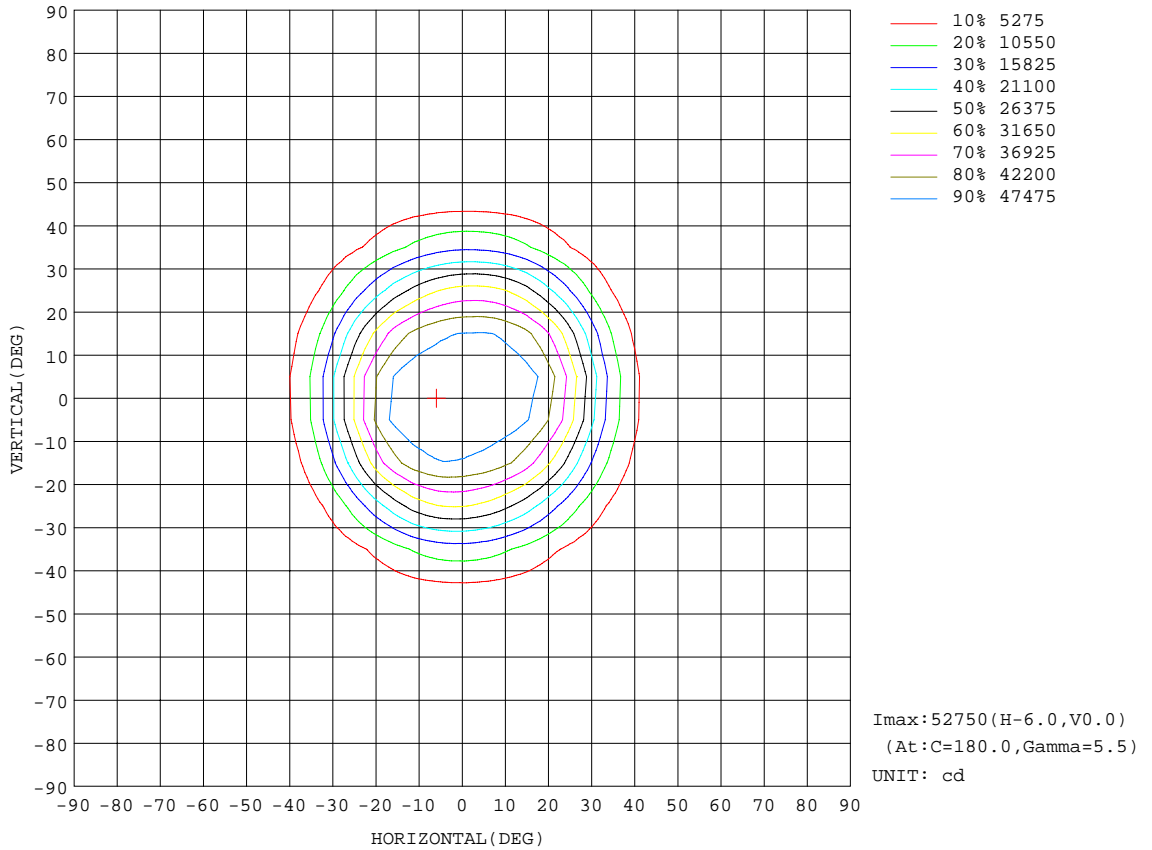


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

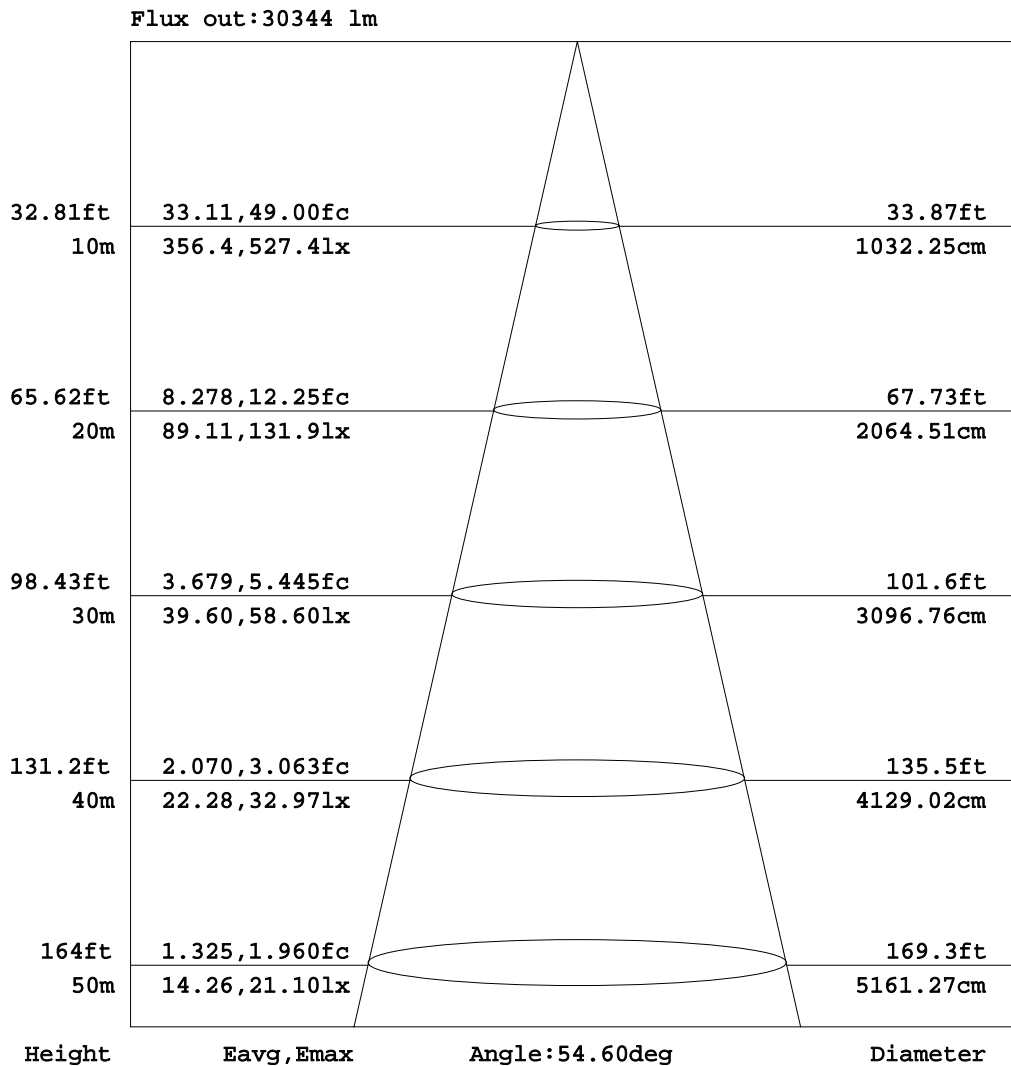


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



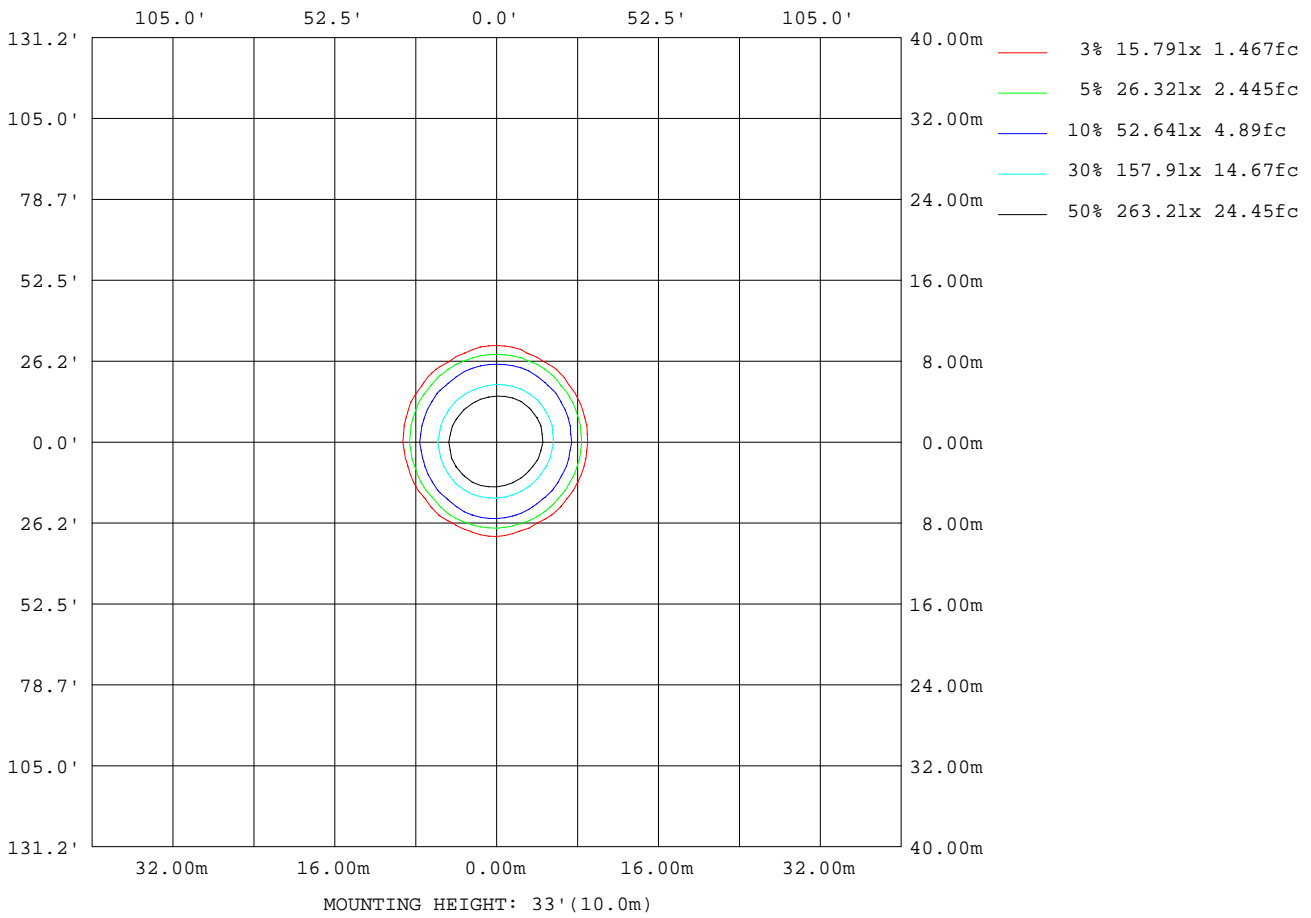
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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

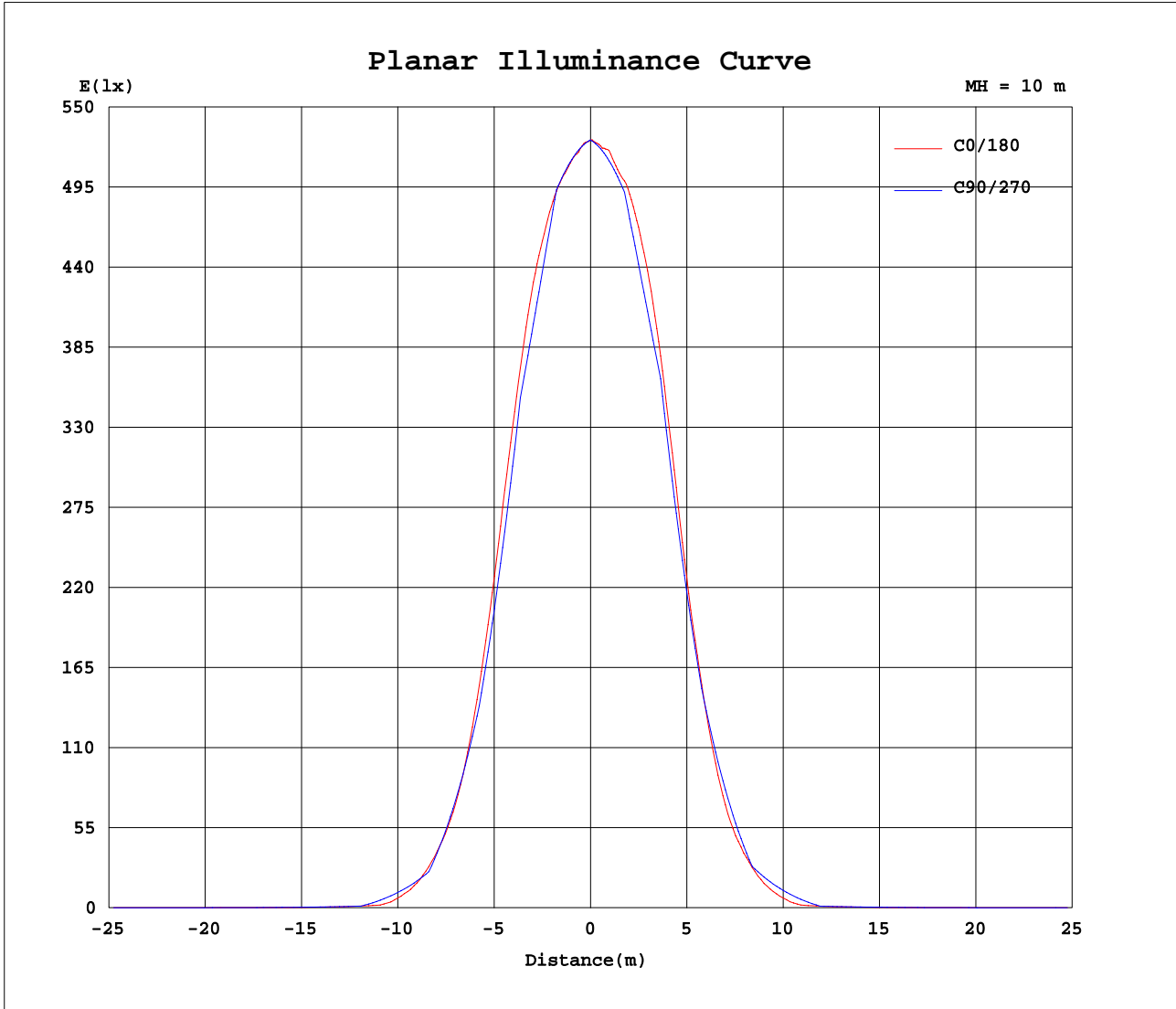
Test:U:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: x10cd

C(DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273
5	5214	5208	5203	5199	5195	5193	5188	5184	5182	5182	5185	5188	5190	5194	5197	5198	5200	5205	5218
10	5153	5131	5111	5094	5080	5070	5065	5062	5060	5065	5079	5088	5100	5112	5119	5120	5127	5134	5163
15	4972	4912	4861	4821	4796	4784	4786	4800	4822	4775	4716	4683	4654	4646	4639	4643	4647	4663	4693
20	4469	4361	4278	4222	4193	4185	4173	4096	4051	4023	3994	3984	3982	4007	4042	4082	4123	4177	4222
25	3520	3407	3338	3299	3298	3273	3172	3112	3082	3089	3095	3123	3095	3081	3088	3101	3118	3143	3180
30	2352	2247	2194	2193	2169	2118	2079	2058	2056	2073	2066	2062	2058	2043	2041	2066	2091	2112	2137
35	1301	1242	1222	1237	1203	1181	1153	1169	1186	1194	1166	1125	1162	1208	1240	1278	1309	1326	1345
40	629	605	608	602	585	576	573	566	567	556	576	586	592	600	593	580	563	553	553
45	191	177	185	176	166	186	180	162	213	225	192	157	164	215	256	275	284	294	299
50	46.2	44.2	43.6	41.8	41.0	40.7	39.7	40.9	55.2	38.2	40.8	49.4	75.6	86.0	86.5	74.3	59.4	48.2	44.5
55	25.2	24.7	24.3	23.6	23.4	23.2	23.3	22.6	23.1	23.8	24.0	23.4	23.6	24.8	25.9	26.8	27.9	28.9	29.6
60	14.6	14.3	13.9	13.6	13.5	13.3	13.0	13.4	13.2	13.1	13.9	14.3	14.5	14.6	14.6	14.5	14.5	14.6	14.7
65	8.33	8.21	7.84	7.66	7.56	7.43	7.48	7.27	7.60	7.79	7.66	7.30	7.78	8.16	8.58	8.93	9.29	9.55	9.75
70	4.69	4.57	4.44	4.34	4.26	4.22	4.26	4.25	4.14	4.32	4.43	4.56	4.67	4.71	4.77	4.77	4.75	4.74	4.78
75	2.47	2.36	2.30	2.22	2.20	2.20	2.19	2.29	2.29	2.25	2.28	2.45	2.60	2.72	2.86	2.97	3.05	3.12	3.16
80	1.04	0.98	0.94	0.95	0.97	1.01	1.02	1.15	1.25	1.34	1.38	1.42	1.45	1.47	1.49	1.51	1.53	1.54	1.54
85	0.28	0.23	0.27	0.40	0.57	0.63	0.66	0.55	0.46	0.37	0.30	0.23	0.18	0.13	0.08	0.05	0.02	0.01	0.00
90	0.09	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	0.00	0.00

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: x10cd

C(DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273
5	5255	5248	5240	5233	5227	5222	5217	5212	5213	5213	5212	5211	5208	5207	5209	5211	5209	5205	5203
10	5189	5172	5157	5145	5138	5131	5127	5126	5132	5145	5148	5147	5156	5155	5150	5148	5145	5141	5132
15	4978	4954	4936	4925	4930	4939	4962	4911	4852	4806	4766	4750	4746	4743	4749	4756	4762	4770	4789
20	4403	4361	4345	4361	4379	4318	4253	4204	4170	4163	4165	4190	4223	4261	4304	4348	4379	4408	4430
25	3394	3388	3430	3399	3338	3316	3303	3310	3342	3309	3289	3283	3285	3291	3301	3326	3349	3379	3418
30	2262	2275	2304	2261	2265	2266	2298	2287	2264	2263	2229	2231	2242	2251	2270	2298	2318	2337	2357
35	1245	1271	1261	1270	1279	1312	1330	1330	1296	1256	1312	1348	1397	1423	1446	1464	1476	1486	1499
40	612	626	623	638	632	639	640	635	657	667	684	692	689	663	655	642	634	639	661
45	190	191	197	227	217	200	247	257	237	204	218	270	308	316	330	339	339	337	335
50	42.5	42.3	42.4	46.5	40.9	45.8	67.9	40.3	43.0	69.1	94.2	104	98.6	82.2	62.7	48.8	44.1	50.7	66.7
55	23.6	24.1	23.7	23.7	24.1	23.9	24.2	24.9	25.1	24.8	24.5	25.3	26.1	27.0	27.8	28.7	29.4	29.9	30.3
60	13.8	13.8	13.6	13.8	13.8	14.0	13.8	13.6	14.3	14.7	14.8	14.8	14.6	14.6	14.5	14.5	14.6	15.0	15.6
65	7.88	7.71	7.74	7.74	7.77	7.55	7.85	7.96	7.73	7.35	7.70	8.11	8.42	8.81	9.13	9.37	9.55	9.70	9.80
70	4.42	4.40	4.39	4.30	4.35	4.35	4.18	4.31	4.39	4.46	4.53	4.54	4.52	4.48	4.43	4.41	4.46	4.58	4.76
75	2.31	2.31	2.27	2.28	2.27	2.29	2.26	2.19	2.16	2.26	2.33	2.39	2.47	2.53	2.59	2.65	2.70	2.75	2.79
80	0.95	0.95	0.95	0.96	0.92	0.98	1.01	1.03	1.03	1.02	0.99	0.97	0.95	0.93	0.93	0.93	0.94	0.96	1.00
85	0.24	0.25	0.25	0.24	0.24	0.23	0.21	0.18	0.16	0.13	0.10	0.07	0.05	0.03	0.01	0.00	0.00	0.00	0.01
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2014-02-28

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:219.6V I:2.211A P:480.0W PF:0.9820 Lamp Flux:44380.4x1 lm		
NAME: LED HIGH BAY LIGHT	TYPE:	WEIGHT:13
SPEC.:CREE XTE	DIM.:	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:	PROTECTION ANGLE:

Table--4

UNIT: x10cd

C (DEG) \ γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273	5273				
5	5201	5199	5199	5199	5198	5196	5194	5195	5197	5201	5205	5206	5207	5209	5211				
10	5139	5147	5157	5158	5154	5153	5149	5143	5142	5139	5134	5134	5136	5140	5145				
15	4813	4834	4855	4881	4909	4934	4972	5018	5002	4984	4969	4959	4950	4948	4957				
20	4437	4436	4426	4416	4408	4419	4441	4461	4518	4611	4581	4519	4471	4446	4445				
25	3460	3509	3561	3612	3659	3645	3611	3585	3600	3629	3671	3649	3548	3496	3483				
30	2391	2419	2441	2481	2483	2499	2524	2532	2500	2461	2453	2474	2439	2352	2324				
35	1509	1503	1492	1445	1396	1430	1472	1478	1456	1411	1386	1385	1399	1312	1283				
40	689	726	740	743	727	708	665	671	675	664	650	644	650	639	619				
45	332	307	277	226	219	249	275	259	216	223	223	197	199	197	183				
50	87.8	103	108	98.5	76.9	57.6	53.7	77.9	58.0	55.4	54.6	52.7	50.7	50.1	47.3				
55	30.5	30.2	29.6	28.7	29.0	31.1	31.0	29.6	28.6	29.3	28.2	27.6	27.0	26.5	25.8				
60	16.3	16.9	17.4	17.6	17.4	16.8	16.1	16.5	16.5	15.7	15.8	15.5	15.2	15.0	14.9				
65	9.81	9.70	9.59	9.31	9.00	9.36	9.62	9.60	9.28	9.32	9.16	9.09	8.96	8.75	8.68				
70	4.98	5.19	5.37	5.45	5.50	5.44	5.34	5.17	5.33	5.39	5.23	5.19	5.09	4.96	4.84				
75	2.83	2.84	2.83	2.80	2.77	2.70	2.73	2.83	2.83	2.77	2.75	2.73	2.68	2.64	2.54				
80	1.05	1.10	1.16	1.21	1.25	1.28	1.29	1.28	1.24	1.14	1.17	1.14	1.12	1.09	1.06				
85	0.03	0.06	0.09	0.12	0.16	0.19	0.23	0.26	0.27	0.27	0.29	0.29	0.30	0.27	0.27				
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	0.00	0.00	0.00				

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 5.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.279
Temperature:25.3DEG	Humidity:65.0%
Operators:	Test Distance:8.000m [K=1.0000]
Test Date:2014-02-28	Remarks