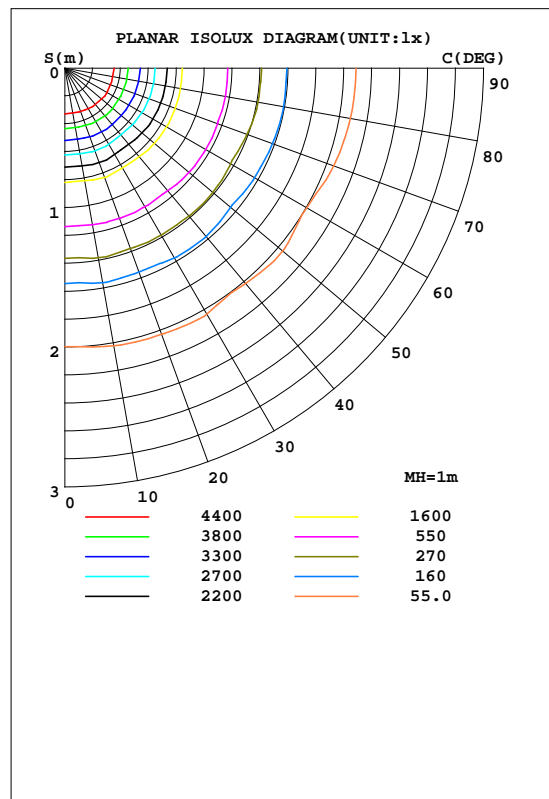
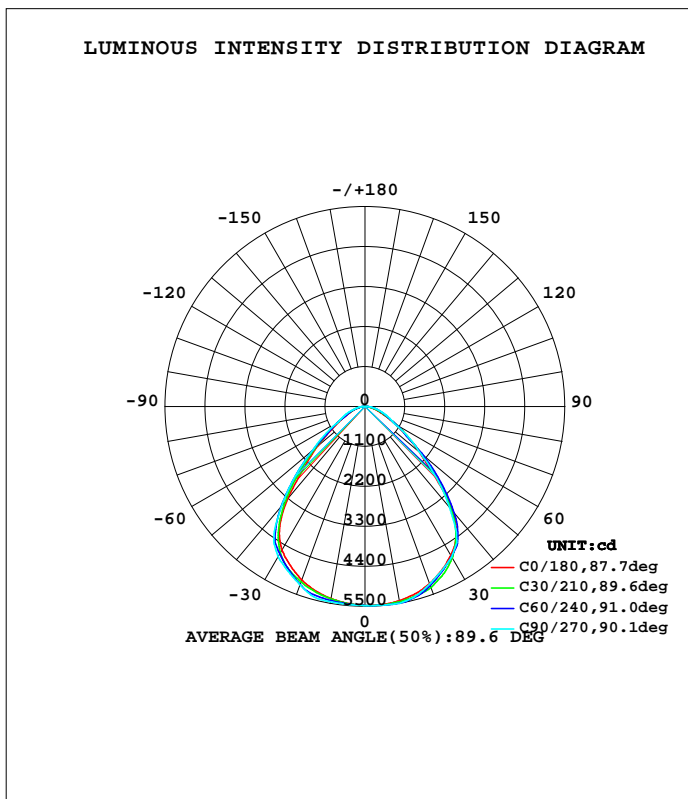


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.27 lm/W			
MODEL	Nichia757-5000K-Ra70	I <sub>max</sub> (cd)	5500	S/MH(C0/180)	1.28
NOMINAL POWER(W)	102	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	222	TOTAL FLUX(lm)	11488	h UP, DN(C0-180)	0.0, 49.5
NOMINAL FLUX(lm)	11487.7	CIE CLASS	DIRECT	h UP, DN(C180-360)	0.0, 50.5
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	221.1	h down(%)	100.0	CIBSE SHR MAX	1.35



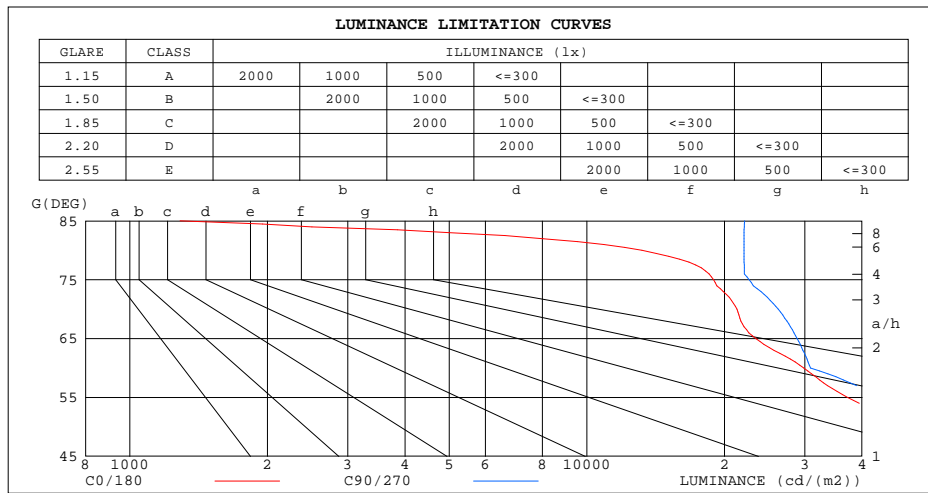
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
5	5441	5446	5465	5467	5471	5485	5486	5463	0- 5	130.8	130.8	1.14,1.14
10	5366	5393	5455	5435	5425	5471	5497	5431	5- 10	389.9	520.7	4.53,4.53
15	5252	5324	5423	5391	5337	5426	5399	5374	10- 15	640.9	1162	10.1,10.1
20	5081	5214	5224	5313	5190	5280	5200	5218	15- 20	872.2	2034	17.7,17.7
25	4845	4963	5005	5092	4983	5049	4989	4967	20- 25	1070	3104	27.27
30	4565	4616	4785	4800	4726	4752	4777	4657	25- 30	1231	4335	37.7,37.7
35	4107	4178	4371	4448	4376	4378	4401	4290	30- 35	1342	5677	49.4,49.4
40	3302	3556	3570	3965	3736	3851	3623	3777	35- 40	1349	7025	61.2,61.2
45	2361	2570	2722	3012	2722	2889	2795	2751	40- 45	1198	8223	71.6,71.6
50	1711	1847	1873	2154	1965	2110	1967	1964	45- 50	954.8	9178	79.9,79.9
55	1152	1259	1353	1483	1402	1467	1444	1375	50- 55	719.7	9897	86.2,86.2
60	806.1	827.6	833.5	973.1	929.2	954.0	921.0	933.3	55- 60	523.7	10421	90.7,90.7
65	534.6	576.4	658.9	672.0	618.5	668.6	734.0	653.4	60- 65	372.6	10794	94,94
70	393.8	385.8	484.3	468.1	411.5	458.6	547.0	468.8	65- 70	276.8	11070	96.4,96.4
75	264.7	261.2	316.8	316.9	263.2	330.9	366.7	333.8	70- 75	201.6	11272	98.1,98.1
80	123.8	144.3	206.9	174.9	123.0	211.0	240.4	205.2	75- 80	130.0	11402	99.3,99.3
85	6.066	72.09	104.2	86.70	5.868	105.0	120.8	103.0	80- 85	65.86	11468	99.8,99.8
90	0.8942	2.164	1.494	1.593	0.5323	2.021	1.258	3.258	85- 90	19.77	11488	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		



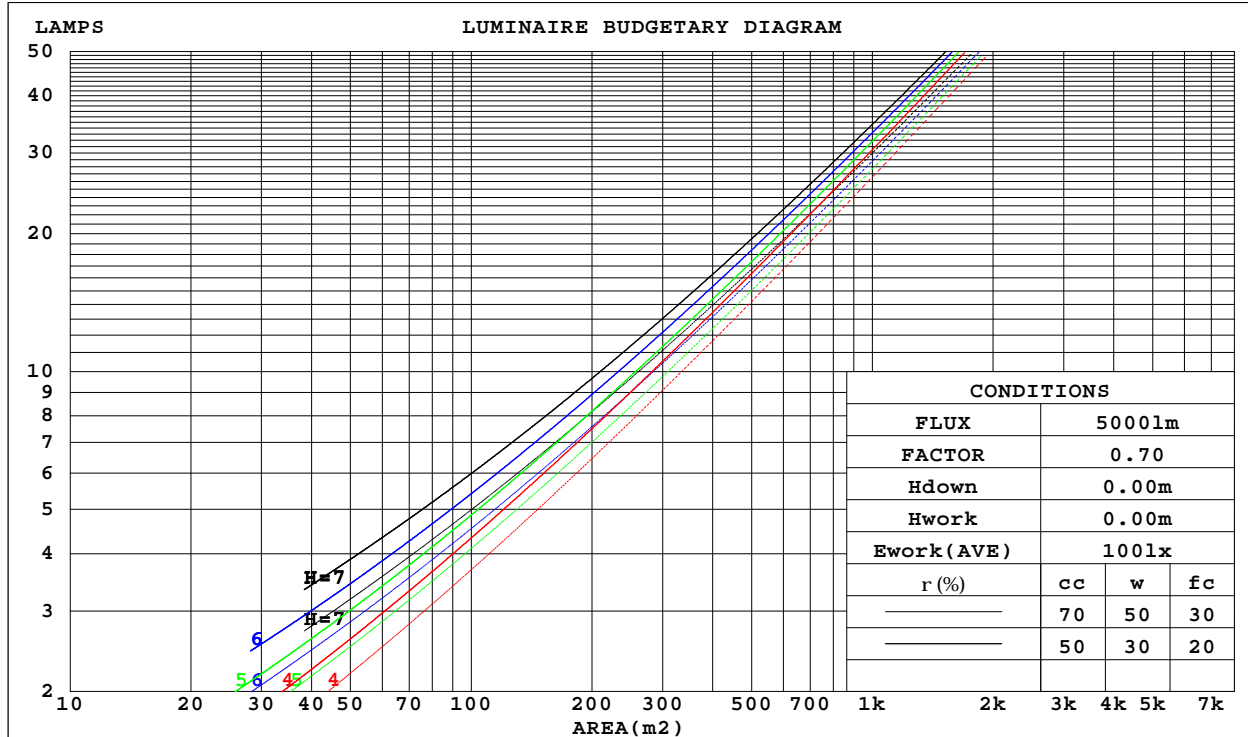
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:Ryan Chan  
Test Date:2015-07-14

G Range: 0 - 90DEG  
Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
Humidity:65.0%  
Test Distance:10.000m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

r <sub>cc</sub>	80%			70%			50%			30%			10%			0
r <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r <sub>fc</sub>	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	1.07	1.04	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.91	.86	.82	.87	.84	.81	.84	.81	.79	.77
3.0	.86	.79	.74	.84	.78	.73	.82	.76	.72	.79	.74	.70	.77	.73	.69	.67
4.0	.78	.70	.64	.76	.69	.64	.74	.68	.63	.72	.66	.62	.70	.65	.61	.59
5.0	.70	.62	.57	.69	.62	.56	.67	.61	.56	.65	.60	.55	.64	.59	.55	.53
6.0	.64	.56	.50	.63	.56	.50	.61	.55	.50	.60	.54	.49	.58	.53	.49	.47
7.0	.59	.51	.45	.58	.50	.45	.56	.50	.45	.55	.49	.44	.54	.48	.44	.42
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.38
9.0	.50	.42	.37	.49	.42	.37	.48	.41	.37	.47	.41	.37	.46	.41	.37	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.37	.33	.32



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.250	.142	.045	.243	.139	.044	.230	.132	.042	.218	.126	.040	.207	.120	.039	
2.0	.241	.132	.040	.235	.129	.040	.223	.124	.039	.213	.120	.037	.203	.115	.036	
3.0	.227	.121	.036	.222	.119	.036	.212	.115	.035	.203	.111	.034	.195	.108	.033	
4.0	.214	.111	.033	.209	.110	.032	.201	.106	.032	.193	.103	.031	.185	.101	.031	
5.0	.201	.102	.030	.197	.101	.029	.189	.099	.029	.182	.096	.029	.175	.094	.028	
6.0	.189	.095	.027	.185	.094	.027	.179	.092	.027	.172	.090	.026	.166	.088	.026	
7.0	.178	.088	.025	.175	.087	.025	.169	.085	.025	.163	.084	.024	.158	.082	.024	
8.0	.168	.082	.023	.165	.081	.023	.160	.080	.023	.155	.078	.023	.150	.077	.022	
9.0	.159	.077	.021	.157	.076	.021	.152	.075	.021	.147	.074	.021	.143	.072	.021	
10.0	.151	.072	.020	.148	.072	.020	.144	.071	.020	.140	.069	.020	.136	.068	.020	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	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	.176	.157	.139	.151	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.141	.089	.052	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.116	.063	.027	.100	.055	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.111	.059	.024	.096	.051	.021	.066	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

g Range: 0 - 90DEG  
 g Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm										
NAME: LED Highbay Light					TYPE:YHL-ID-100-HB-VD			WEIGHT:6.5Kg		
SPEC.:PMMA90					DIM.:			SERIAL No.:20150714		
MFR.:					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	24.7	26.0	25.0	26.2	26.4	25.1	26.4	25.4	26.6	26.8
3H	25.2	26.4	25.5	26.6	26.8	25.7	26.9	26.0	27.1	27.3
4H	25.4	26.5	25.7	26.8	27.0	25.9	27.1	26.2	27.3	27.6
6H	25.5	26.6	25.8	26.8	27.1	26.1	27.2	26.4	27.5	27.7
8H	25.4	26.5	25.8	26.8	27.0	26.2	27.2	26.5	27.5	27.8
12H	25.4	26.4	25.7	26.7	27.0	26.3	27.3	26.6	27.6	27.8
4H 2H	24.9	26.0	25.2	26.2	26.5	25.2	26.3	25.5	26.6	26.8
3H	25.5	26.5	25.8	26.8	27.1	25.9	26.9	26.3	27.2	27.5
4H	25.8	26.7	26.2	27.0	27.3	26.3	27.2	26.7	27.5	27.8
6H	26.0	26.8	26.4	27.1	27.5	26.6	27.4	27.0	27.8	28.1
8H	26.0	26.7	26.4	27.1	27.4	26.8	27.5	27.2	27.9	28.2
12H	25.9	26.6	26.3	27.0	27.4	26.9	27.6	27.3	27.9	28.3
8H 4H	25.9	26.6	26.3	27.0	27.4	26.3	27.1	26.7	27.4	27.8
6H	26.1	26.7	26.5	27.1	27.5	26.8	27.4	27.2	27.8	28.2
8H	26.1	26.6	26.5	27.0	27.5	27.0	27.5	27.5	28.0	28.4
12H	26.1	26.5	26.5	27.0	27.4	27.2	27.7	27.7	28.1	28.6
12H 4H	25.9	26.5	26.3	26.9	27.3	26.3	27.0	26.7	27.4	27.8
6H	26.1	26.6	26.6	27.1	27.5	26.8	27.3	27.2	27.7	28.2
8H	26.1	26.6	26.6	27.0	27.5	27.0	27.5	27.5	27.9	28.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 1.1					+ 0.7 / - 0.8				
1.5H	+ 0.8 / - 0.7					+ 0.6 / - 0.7				
2.0H	+ 1.6 / - 1.3					+ 1.7 / - 1.4				

CIE Pub.117 Corrected 11488 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.5)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

g Range: 0 - 90DEG  
 g Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	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) x RCR = 5									
k = 0.60	67	57	51	66	57	51	65	57	51	45
0.80	77	67	61	76	67	61	74	66	61	55
1.00	85	76	70	84	75	70	82	76	69	63
1.25	91	83	77	90	82	77	87	81	76	70
1.50	95	88	82	94	87	82	91	85	80	74
2.00	101	94	89	99	93	88	96	91	87	80
2.50	104	98	93	102	96	92	98	94	90	83
3.00	106	101	97	104	99	96	101	97	93	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	105	103	105	102	100	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

g Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

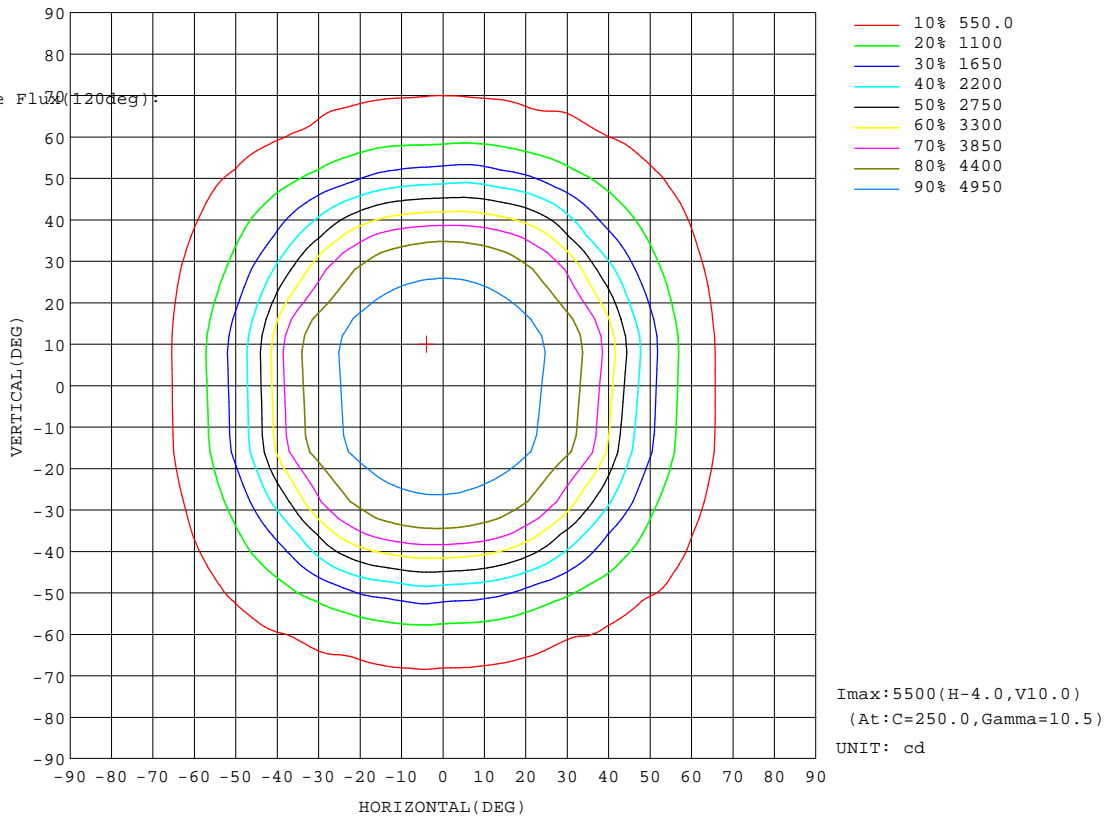
Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

8222.9 lm  
 %lum = 71.6%  
 %lamp = 71.6%

Conical surface Flux(120deg):

10421 lm  
 %lum = 90.7%  
 %lamp = 90.7%



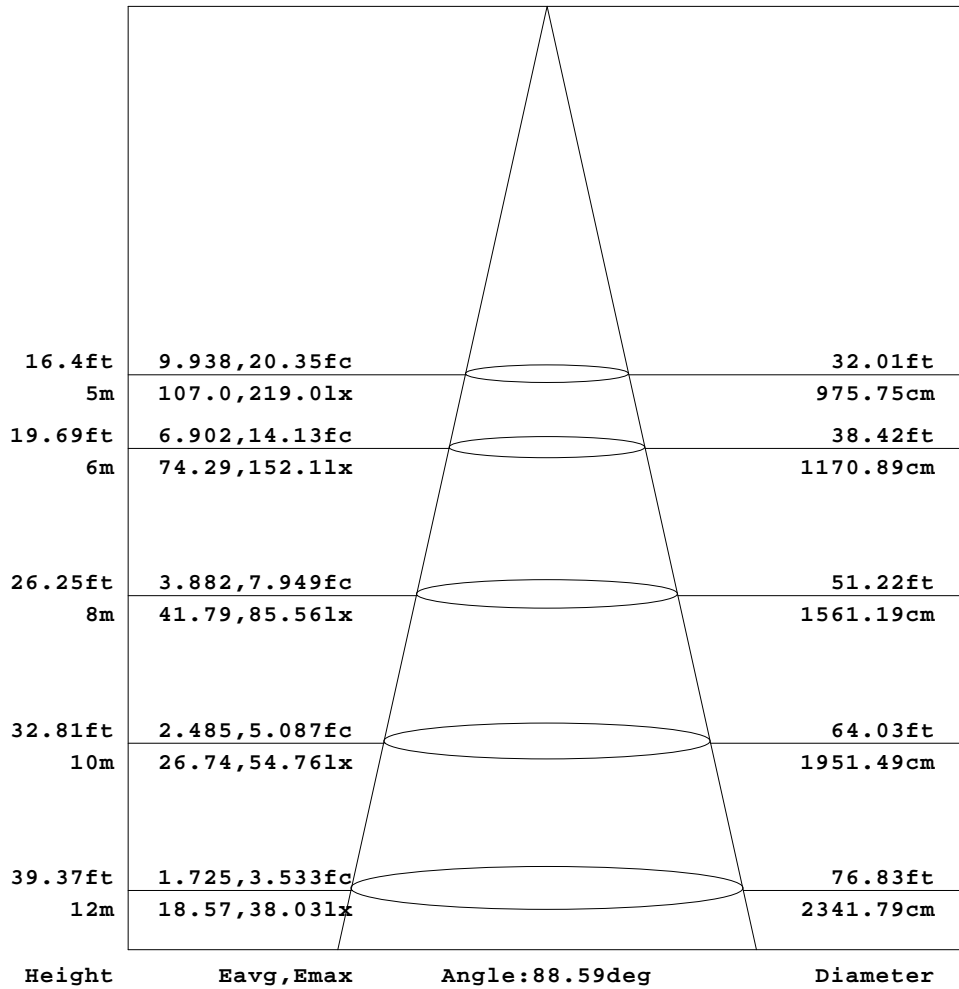
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

**AAI Figure**

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

Flux out:8114 lm



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

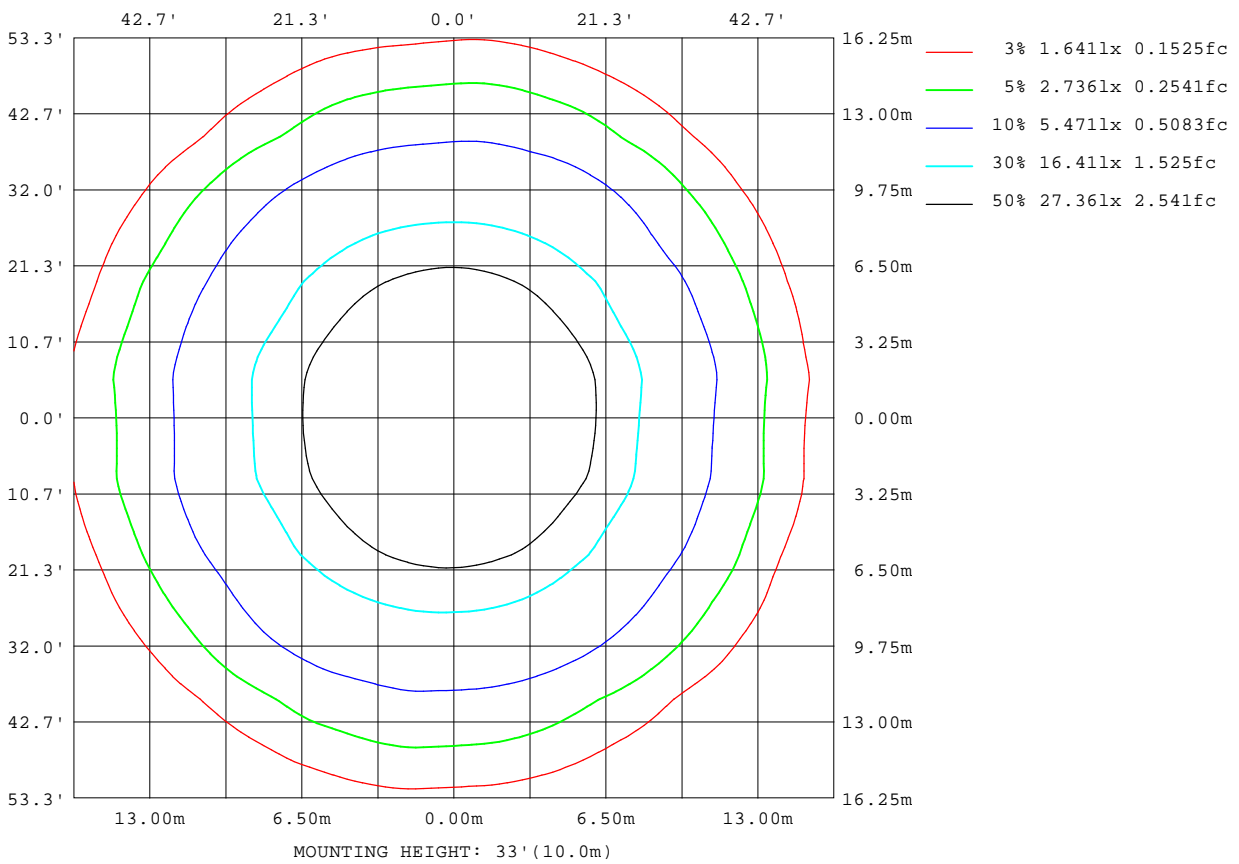
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

g Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:



ISOLUX DIAGRAM

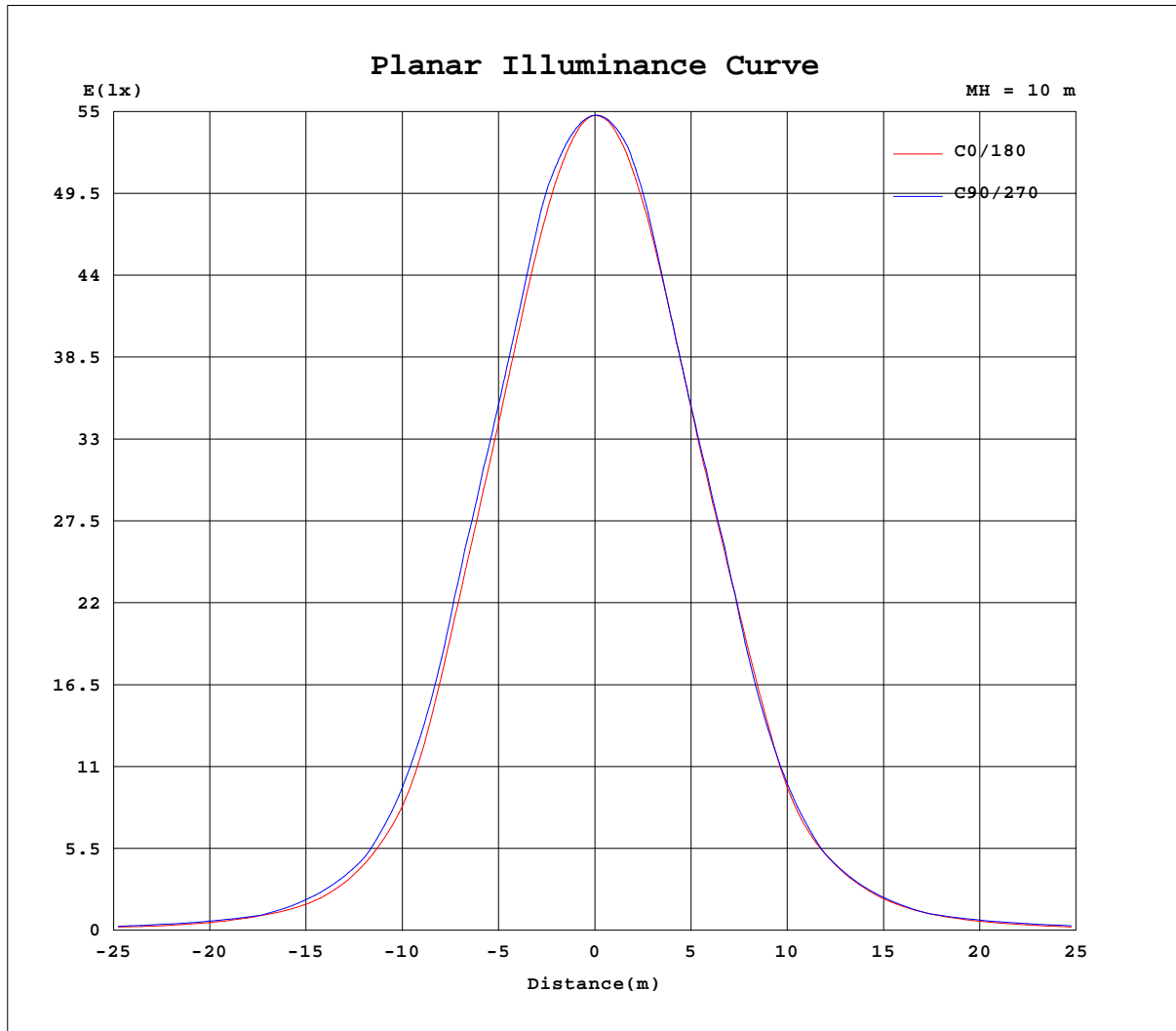
Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators: Ryan Chan  
 Test Date: 2015-07-14

Page Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity: 65.0%  
 Test Distance: 10.000m [K=1.0000]  
 Remarks:





LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:221.1V I:0.4611A P:100.5W PF:0.9859 Lamp Flux:11487.7x1 lm		
NAME: LED Highbay Light	TYPE:YHL-ID-100-HB-VD	WEIGHT:6.5Kg
SPEC.:PMMA90	DIM.:	SERIAL No.:20150714
MFR.:	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: cd

C(DEG) g (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476
5	5474	5475	5477	5479	5481	5483	5484	5485	5485	5486	5486	5487	5487	5487	5486	5486	5486	5485	5483
10	5432	5437	5443	5450	5455	5461	5466	5471	5479	5486	5492	5498	5499	5499	5499	5498	5497	5495	5492
15	5349	5357	5368	5380	5393	5407	5424	5426	5426	5422	5417	5416	5418	5412	5407	5404	5399	5395	5392
20	5210	5227	5249	5278	5301	5294	5287	5280	5269	5261	5249	5233	5221	5216	5207	5205	5200	5195	5196
25	5012	5038	5071	5092	5097	5084	5063	5049	5032	5020	5014	5008	4999	4998	4991	4991	4989	4983	4983
30	4767	4806	4830	4830	4809	4766	4754	4752	4757	4767	4767	4774	4774	4774	4775	4775	4777	4772	4768
35	4454	4518	4509	4452	4367	4336	4346	4378	4428	4477	4452	4437	4436	4436	4421	4409	4401	4398	4404
40	3903	3944	3914	3782	3710	3721	3796	3851	3821	3829	3826	3789	3743	3692	3654	3628	3623	3638	3659
45	2953	2946	2929	2902	2870	2888	2897	2889	2940	2970	2959	2935	2900	2855	2817	2790	2795	2828	2850
50	2064	2045	2036	2039	2038	2057	2095	2110	2133	2138	2102	2080	2056	2018	1981	1952	1967	2019	2038
55	1494	1446	1436	1456	1431	1446	1475	1467	1439	1394	1373	1414	1455	1456	1444	1427	1444	1484	1486
60	972	956	945	965	998	1001	986	954	960	983	994	993	993	971	937	910	921	953	964
65	661	651	662	671	662	650	668	669	643	629	686	708	725	734	726	725	734	743	735
70	442	460	466	463	472	474	444	459	475	486	523	525	539	546	539	546	547	538	530
75	292	309	313	316	317	331	327	331	340	355	373	346	358	360	358	372	367	342	334
80	138	146	161	167	176	193	210	211	217	230	245	220	231	233	233	244	240	222	216
85	18.8	24.1	24.1	48.3	71.5	88.3	105	105	110	115	124	111	116	117	117	123	121	112	109
90	1.44	1.59	1.66	1.66	1.74	1.92	2.00	2.02	1.95	1.87	1.78	1.69	1.57	1.46	1.35	1.26	1.26	1.50	1.80

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Ryan Chan  
 Test Date:2015-07-14

g Range: 0 - 90DEG  
 Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:10.000m [K=1.0000]  
 Remarks:

