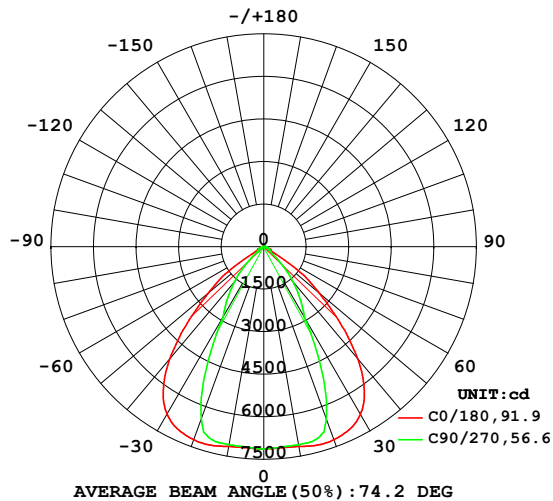


LUMINAIRE PHOTOMETRIC TEST REPORT

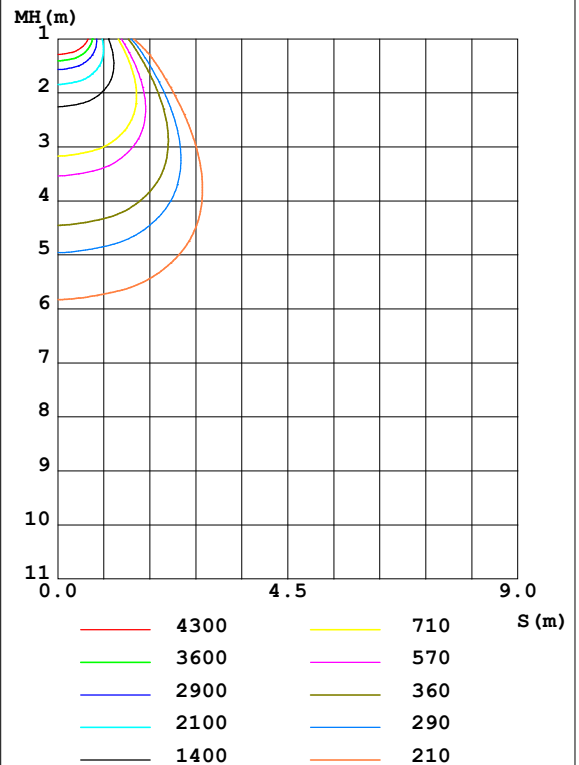
Test:U:230.1V I:0.4141A P:91.87W PF:0.9642 Lamp Flux:12755.9x1 lm		
NAME: LHB01-90	TYPE:90W	WEIGHT:
SPEC.:5000K Ra70 6090DEG L02802	DIM.: 0.718*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.7*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 138.85 lm/W			
MODEL	LHB01-90	I _{max} (cd)	8319	S/MH (C0/180)	1.30
NOMINAL POWER(W)	90	LOR(%)	100.0	S/MH (C90/270)	0.84
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	12756	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	12755.9	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	1.05

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-31

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [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	7119	7099	7094	7099	7119	7100	7094	7100	0- 5	170.0	170.0	1.33,1.33
10	7153	7117	7090	7117	7153	7119	7090	7119	5- 10	508.3	678.3	5.32,5.32
15	7245	7295	7047	7295	7245	7310	7047	7310	10- 15	850.4	1529	12,12
20	7243	7663	6452	7663	7243	7709	6452	7709	15- 20	1196	2724	21.4,21.4
25	7124	7895	4879	7895	7124	7957	4879	7957	20- 25	1485	4209	33,33
30	6826	7213	2874	7213	6826	7268	2874	7268	25- 30	1635	5844	45.8,45.8
35	6182	5751	2232	5751	6182	5782	2232	5782	30- 35	1637	7481	58.6,58.6
40	5149	3995	1590	3995	5149	3961	1590	3961	35- 40	1558	9039	70.9,70.9
45	3822	3153	948.6	3153	3822	3141	948.6	3141	40- 45	1358	10397	81.5,81.5
50	2565	2190	306.9	2190	2565	2187	306.9	2187	45- 50	1030	11428	89.6,89.6
55	1554	1159	256.4	1159	1554	1173	256.4	1173	50- 55	641.8	12069	94.6,94.6
60	275.0	277.1	205.9	277.1	275.0	297.7	205.9	297.7	55- 60	319.2	12389	97.1,97.1
65	234.5	212.3	155.3	212.3	234.5	227.4	155.3	227.4	60- 65	149.9	12539	98.3,98.3
70	126.9	145.6	104.8	145.6	126.9	154.1	104.8	154.1	65- 70	90.64	12629	99,99
75	76.90	78.77	79.60	78.77	76.90	80.48	79.60	80.48	70- 75	57.56	12687	99.5,99.5
80	38.67	50.81	54.37	50.81	38.67	51.63	54.37	51.63	75- 80	37.45	12724	99.8,99.8
85	4.135	27.51	29.15	27.51	4.135	28.09	29.15	28.09	80- 85	22.79	12747	99.9,99.9
90	1.825	3.942	3.917	3.942	1.825	4.233	3.917	4.233	85- 90	8.878	12756	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		

Conical surface Flux(90deg): 10397 lm

%lum = 81.5%

%lamp = 81.5%

Conical surface Flux(120deg): 12389 lm

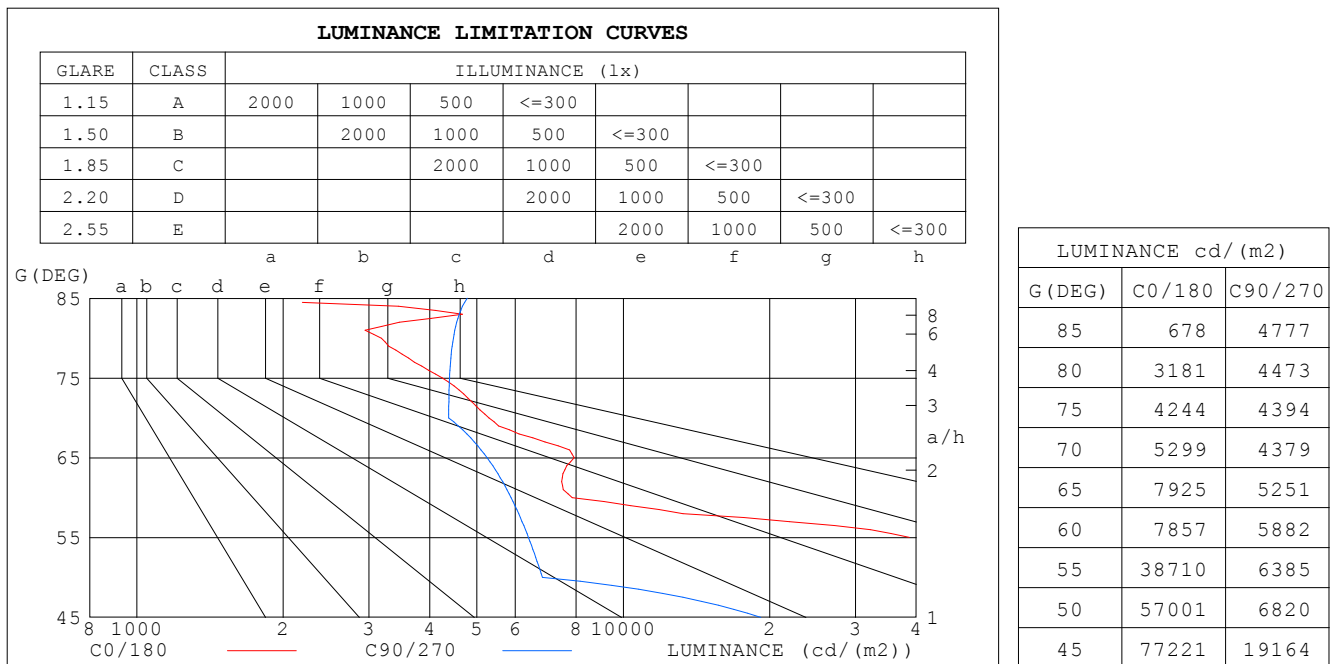
%lum = 97.1%

%lamp = 97.1%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.500m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

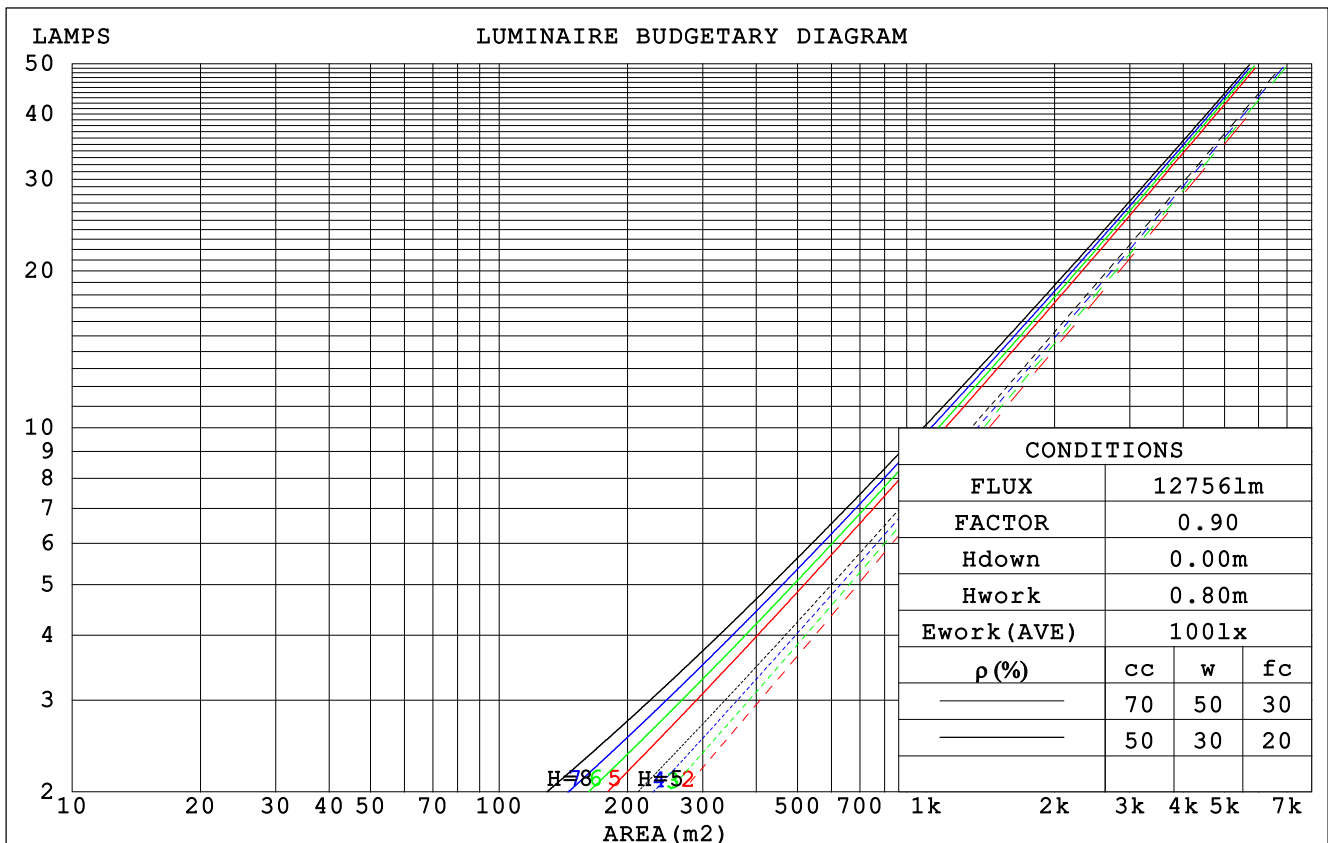


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	1.09	1.06	1.03	1.07	1.04	1.01	1.02	1.00	.98	.99	.97	.95	.95	.94	.92	.91
2.0	.99	.94	.90	.97	.92	.89	.94	.90	.87	.91	.87	.85	.88	.85	.83	.81
3.0	.90	.84	.79	.88	.83	.78	.86	.81	.77	.83	.79	.76	.81	.77	.74	.73
4.0	.82	.75	.70	.81	.74	.69	.78	.73	.69	.76	.72	.68	.74	.70	.67	.65
5.0	.75	.68	.62	.74	.67	.62	.72	.66	.62	.70	.65	.61	.69	.64	.60	.59
6.0	.69	.61	.56	.68	.61	.56	.66	.60	.56	.65	.59	.55	.63	.58	.55	.53
7.0	.63	.56	.51	.63	.56	.51	.61	.55	.50	.60	.54	.50	.59	.54	.50	.48
8.0	.59	.51	.46	.58	.51	.46	.57	.50	.46	.56	.50	.46	.54	.49	.45	.44
9.0	.54	.47	.42	.54	.47	.42	.53	.46	.42	.52	.46	.42	.51	.46	.42	.40
10.0	.50	.44	.39	.50	.43	.39	.49	.43	.39	.48	.43	.39	.47	.42	.38	.37



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

WEC AND CCEC

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						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.217	.124	.039	.211	.120	.038	.198	.113	.036	.186	.107	.034	.175	.102	.033		
2.0	.212	.116	.036	.206	.113	.035	.195	.108	.034	.185	.104	.032	.175	.099	.031		
3.0	.203	.108	.032	.197	.106	.032	.188	.102	.031	.179	.098	.030	.171	.095	.029		
4.0	.193	.100	.029	.188	.099	.029	.180	.095	.029	.172	.092	.028	.165	.090	.027		
5.0	.183	.093	.027	.179	.092	.027	.172	.089	.026	.165	.087	.026	.159	.085	.025		
6.0	.174	.087	.025	.170	.086	.025	.164	.084	.024	.158	.082	.024	.152	.080	.024		
7.0	.165	.082	.023	.162	.081	.023	.156	.079	.023	.151	.077	.022	.146	.076	.022		
8.0	.157	.077	.022	.154	.076	.021	.149	.074	.021	.144	.073	.021	.139	.072	.021		
9.0	.149	.072	.020	.147	.072	.020	.142	.070	.020	.138	.069	.020	.134	.068	.020		
10.0	.142	.068	.019	.140	.068	.019	.136	.067	.019	.132	.065	.019	.128	.064	.018		

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						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.174	.157	.142	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.108	.138	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.151	.114	.084	.130	.098	.073	.089	.068	.051	.051	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.007	
6.0	.129	.080	.045	.111	.069	.039	.076	.048	.028	.044	.029	.016	.014	.009	.005	
7.0	.123	.073	.038	.106	.063	.033	.073	.044	.023	.042	.026	.014	.014	.009	.005	
8.0	.117	.067	.032	.101	.058	.028	.070	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.112	.062	.028	.096	.054	.025	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.107	.058	.025	.092	.050	.022	.064	.035	.015	.037	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-31

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

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	26.5	27.7	26.7	27.9	28.0	19.8	21.0	20.1	21.2	21.4
3H	26.3	27.4	26.6	27.6	27.9	19.8	20.9	20.0	21.1	21.3
4H	26.2	27.3	26.5	27.5	27.8	19.8	20.8	20.0	21.0	21.3
6H	26.2	27.1	26.5	27.4	27.6	19.7	20.7	20.1	21.0	21.2
8H	26.1	27.0	26.4	27.3	27.6	19.7	20.7	20.1	20.9	21.2
12H	26.1	27.0	26.4	27.2	27.5	19.7	20.6	20.1	20.9	21.2
4H 2H	26.2	27.3	26.5	27.5	27.7	20.1	21.2	20.4	21.4	21.6
3H	26.1	27.0	26.4	27.3	27.6	20.1	21.0	20.5	21.3	21.6
4H	26.0	26.8	26.4	27.1	27.5	20.2	21.0	20.5	21.3	21.6
6H	26.0	26.7	26.4	27.0	27.4	20.2	20.9	20.6	21.2	21.6
8H	25.9	26.6	26.3	26.9	27.3	20.2	20.9	20.6	21.2	21.6
12H	25.9	26.5	26.3	26.9	27.3	20.2	20.8	20.6	21.2	21.6
8H 4H	25.9	26.6	26.3	26.9	27.3	20.1	20.8	20.5	21.1	21.5
6H	25.9	26.4	26.3	26.8	27.2	20.2	20.7	20.6	21.1	21.5
8H	25.8	26.3	26.3	26.7	27.2	20.2	20.7	20.7	21.1	21.6
12H	25.8	26.2	26.3	26.6	27.1	20.3	20.7	20.8	21.1	21.6
12H 4H	25.9	26.5	26.3	26.8	27.2	20.1	20.7	20.5	21.0	21.4
6H	25.8	26.3	26.3	26.7	27.1	20.2	20.6	20.6	21.1	21.5
8H	25.8	26.2	26.3	26.6	27.1	20.2	20.6	20.7	21.1	21.6
Variations with the observer position at spacings:										
S = 1.0H	+ 2.1 / - 4.0					+ 2.2 / - 4.6				
1.5H	+ 1.7 / - 2.6					+ 3.5 / - 5.3				
2.0H	+ 4.8 / - 9.5					+ 4.2 / - 2.7				

CIE Pub.117 Corrected 12756 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.8)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-31

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

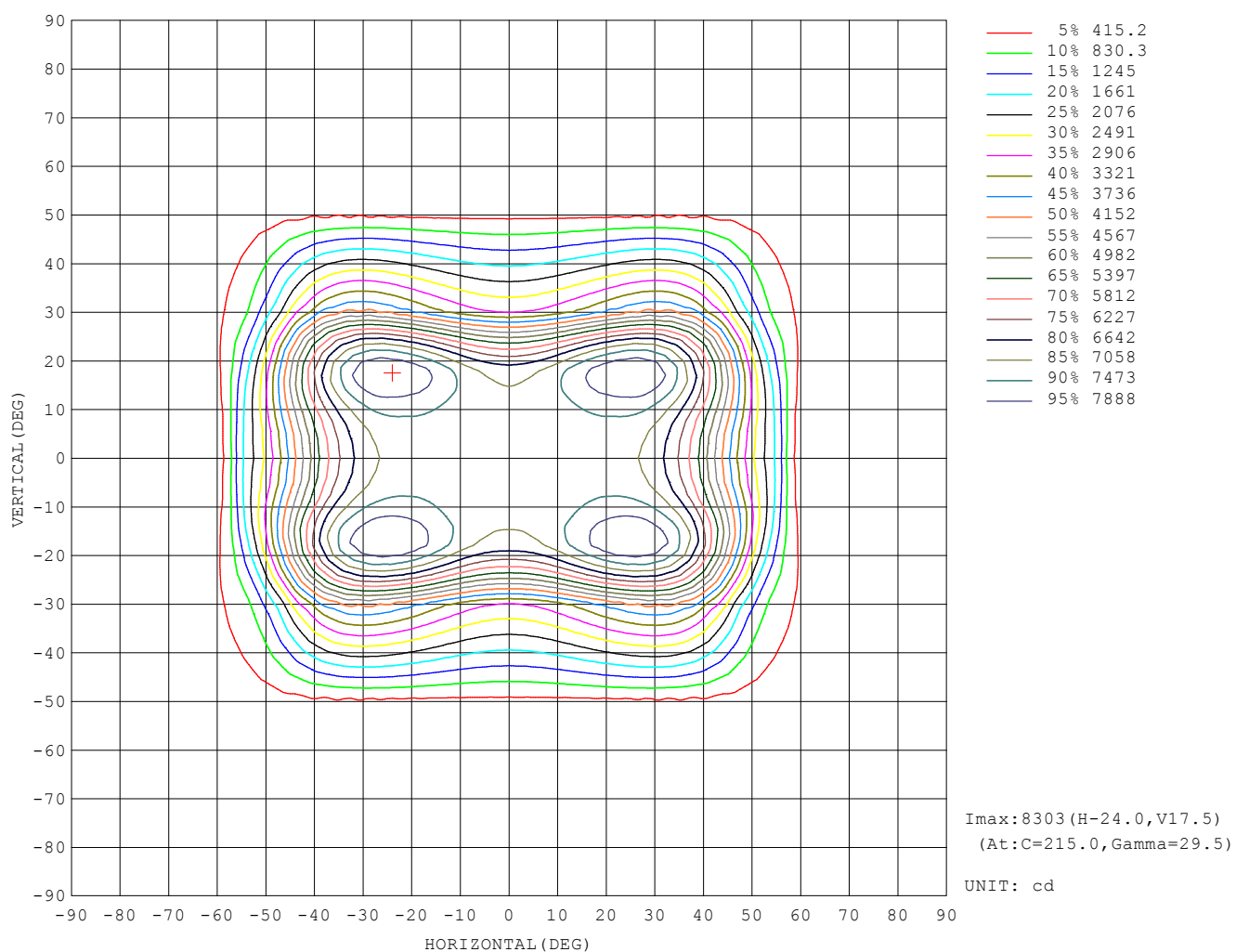
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	72	64	58	71	63	58	53
0.80	82	74	69	82	74	69	80	73	68	63
1.00	90	82	77	89	82	77	87	82	76	71
1.25	96	88	84	94	88	83	92	87	82	77
1.50	99	93	88	98	92	88	96	90	87	81
2.00	104	98	94	103	97	93	100	95	92	86
2.50	106	101	97	105	100	96	101	98	94	88
3.00	109	104	100	107	103	99	103	100	97	90
4.00	111	107	104	109	106	103	105	102	100	92
5.00	113	109	107	110	107	105	106	104	102	94
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: 25.3DEG
 Operators:
 Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

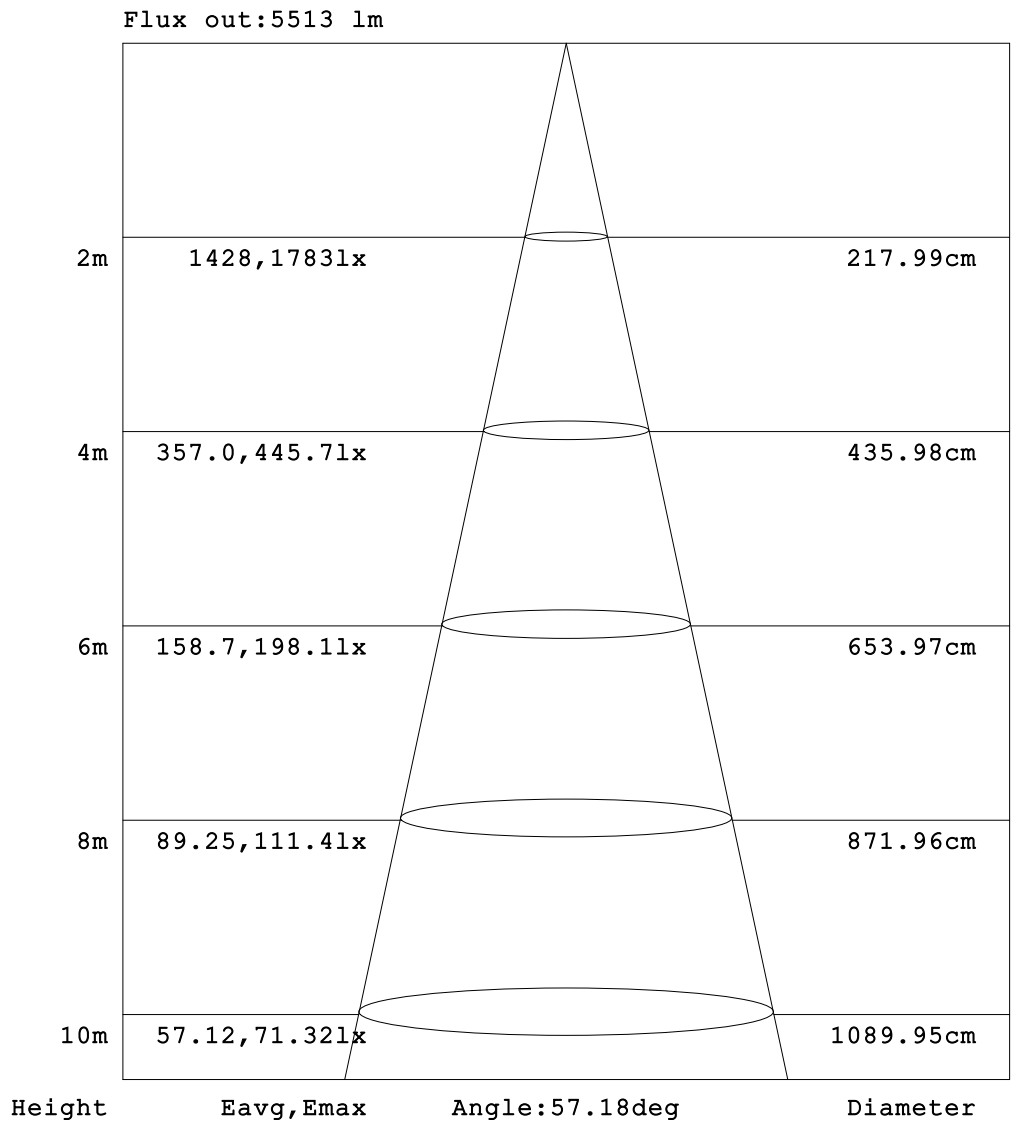
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

AAI Figure

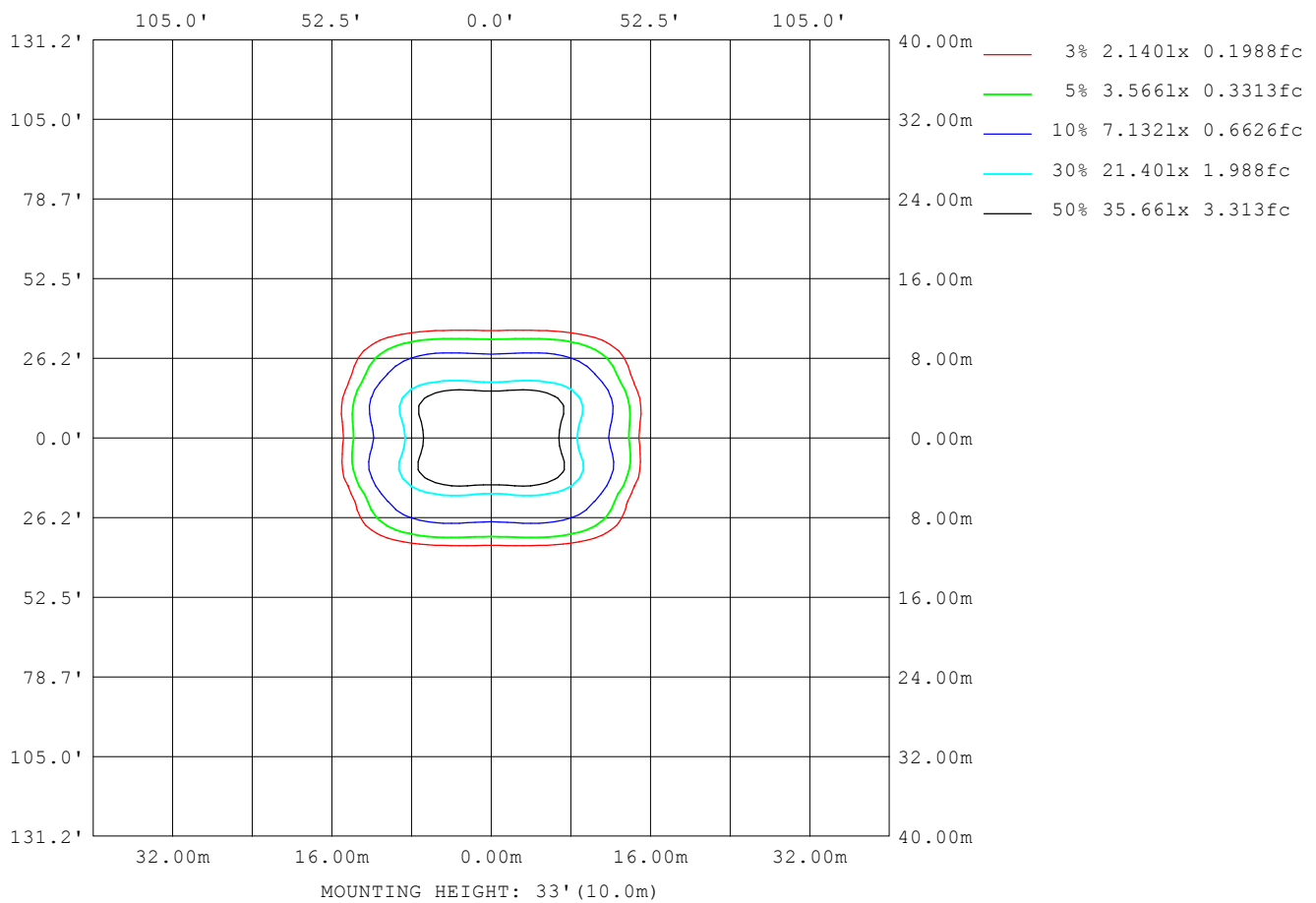


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-31

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.1V I:0.4141A P:91.87W PF:0.9642 Lamp Flux:12755.9x1 lm		
NAME: LHB01-90	TYPE:90W	WEIGHT:
SPEC.:5000K Ra70 6090DEG L02802	DIM.: 0.718*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.7*0.1	Shielding Angle:

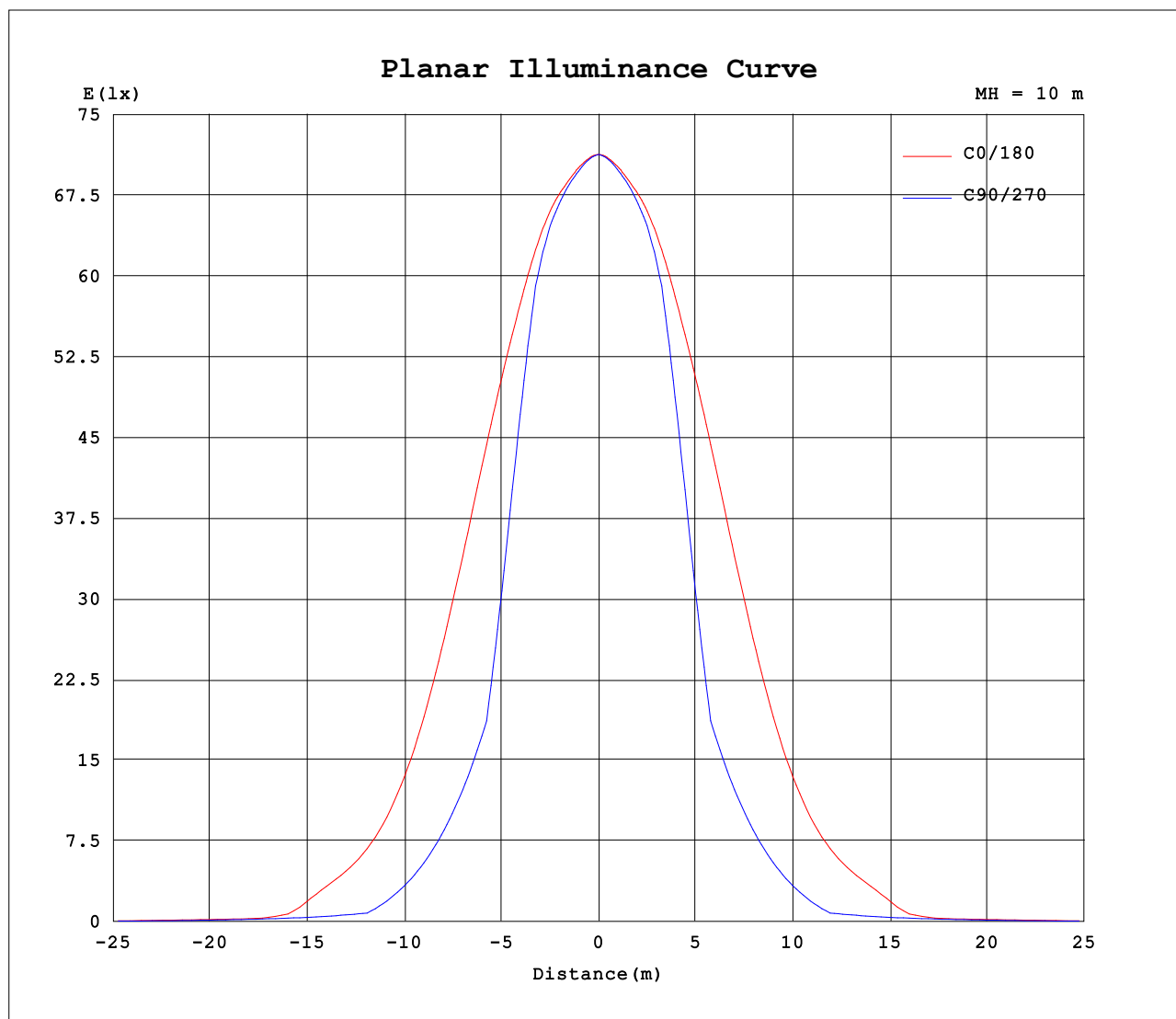
AvgL	cd/m2
L_0~180 (65) av	7925
L_0~180 (75) av	4244
L_0~180 (85) av	678
L_90~270 (65) av	5251
L_90~270 (75) av	4394
L_90~270 (85) av	4777
L_45 (65) av	7432
L_45 (75) av	4395
L_45 (85) av	4556

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-31

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-31

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```