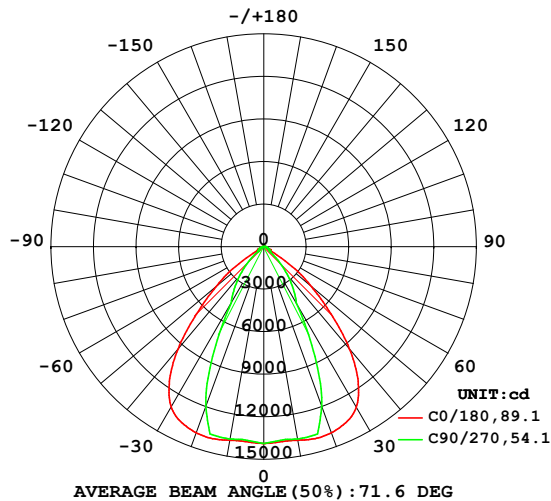


LUMINAIRE PHOTOMETRIC TEST REPORT

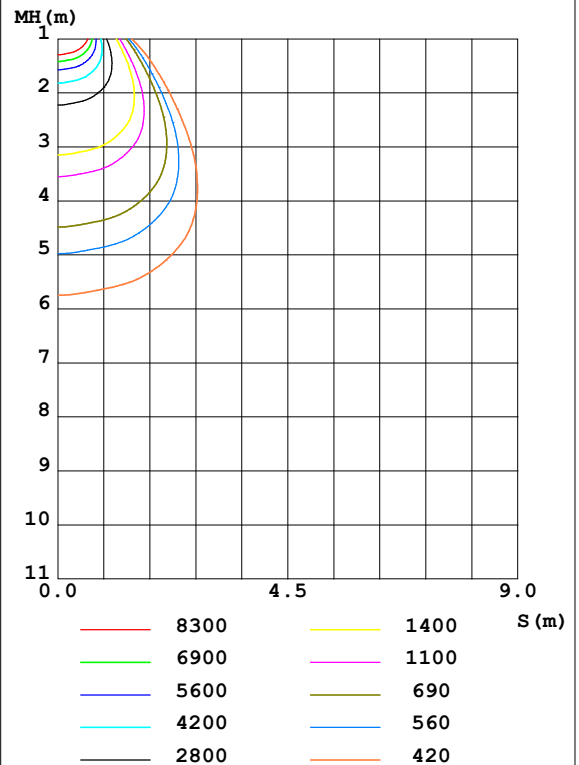
Test:U:229.8V I:0.8189A P:181.8W PF:0.9658 Lamp Flux:23438x1 lm		
NAME: LHB01-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra80 6090DEG L02802	DIM.: 0.718*0.275*0.102	SERIAL No.:
MFR.:	SUR.:0.255*0.69	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.96 lm/W			
MODEL	LHB01-180	Imax(cd)	16680	S/MH(C0/180)	1.27
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	0.79
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	23438	η UP,DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	23438	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.95

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:2017-06-16

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	1381	1374	1371	1374	1381	1373	1371	1373	0- 5	329.7	329.7	1.41,1.41
10	1386	1377	1377	1377	1386	1375	1377	1375	5- 10	982.8	1313	5.6,5.6
15	1401	1426	1376	1426	1401	1435	1376	1435	10- 15	1652	2964	12.6,12.6
20	1396	1503	1198	1503	1396	1533	1198	1533	15- 20	2322	5286	22.6,22.6
25	1369	1492	855.5	1492	1369	1518	855.5	1518	20- 25	2842	8129	34.7,34.7
30	1306	1344	463.3	1344	1306	1359	463.3	1359	25- 30	3072	11201	47.8,47.8
35	1161	1017	362.0	1017	1161	1031	362.0	1031	30- 35	3017	14217	60.7,60.7
40	940.1	670.0	260.6	670.0	940.1	655.7	260.6	655.7	35- 40	2815	17032	72.7,72.7
45	670.3	530.1	159.2	530.1	670.3	525.4	159.2	525.4	40- 45	2388	19420	82.9,82.9
50	442.2	368.9	57.85	368.9	442.2	367.7	57.85	367.7	45- 50	1753	21173	90.3,90.3
55	244.6	197.1	48.68	197.1	244.6	198.2	48.68	198.2	50- 55	1050	22222	94.8,94.8
60	52.10	52.59	39.51	52.59	52.10	53.77	39.51	53.77	55- 60	516.0	22739	97,97
65	47.17	40.64	30.34	40.64	47.17	41.66	30.34	41.66	60- 65	268.8	23007	98.2,98.2
70	26.01	28.36	21.17	28.36	26.01	29.01	21.17	29.01	65- 70	172.6	23180	98.9,98.9
75	17.06	16.19	16.21	16.19	17.06	16.26	16.21	16.26	70- 75	115.0	23295	99.4,99.4
80	9.845	10.60	11.24	10.60	9.845	10.57	11.24	10.57	75- 80	76.94	23372	99.7,99.7
85	3.268	5.762	6.279	5.762	3.268	5.743	6.279	5.743	80- 85	47.62	23420	99.9,99.9
90	0.2982	0.8599	1.314	0.8599	0.2982	0.8693	1.314	0.8693	85- 90	18.53	23438	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 19420 lm

%lum = 82.9%

%lamp = 82.9%

Conical surface Flux(120deg): 22739 lm

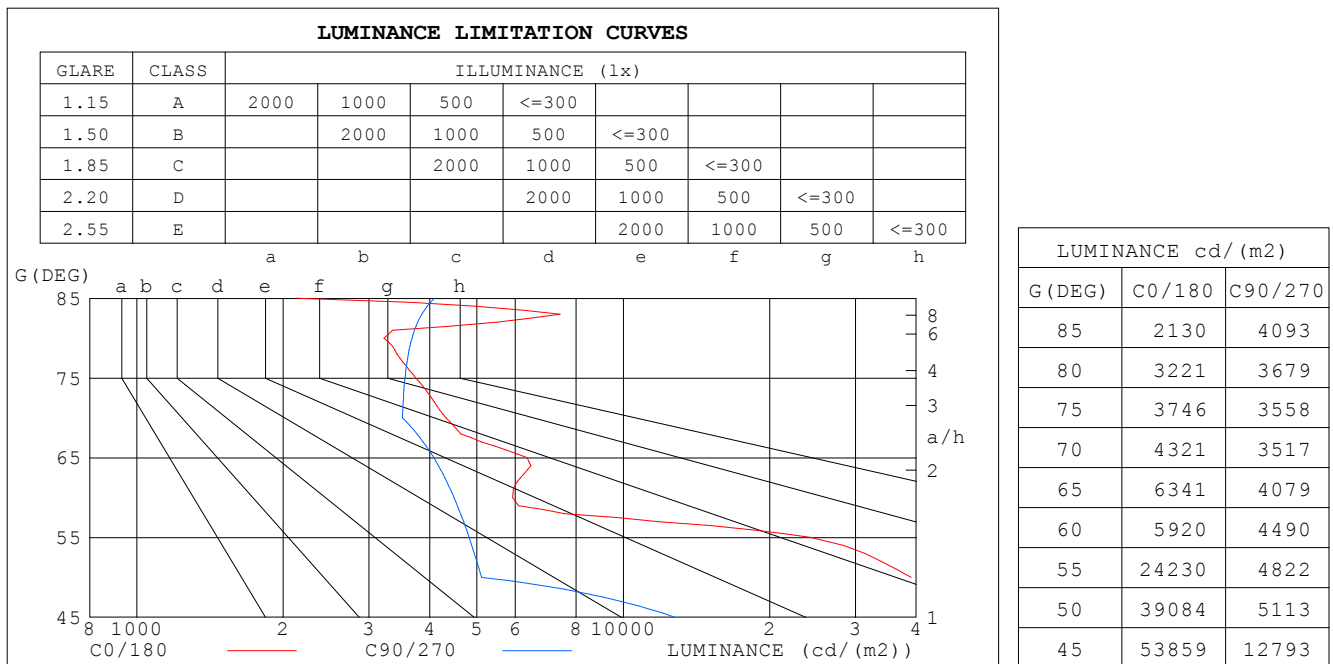
%lum = 97.0%

%lamp = 97.0%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-06-16

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

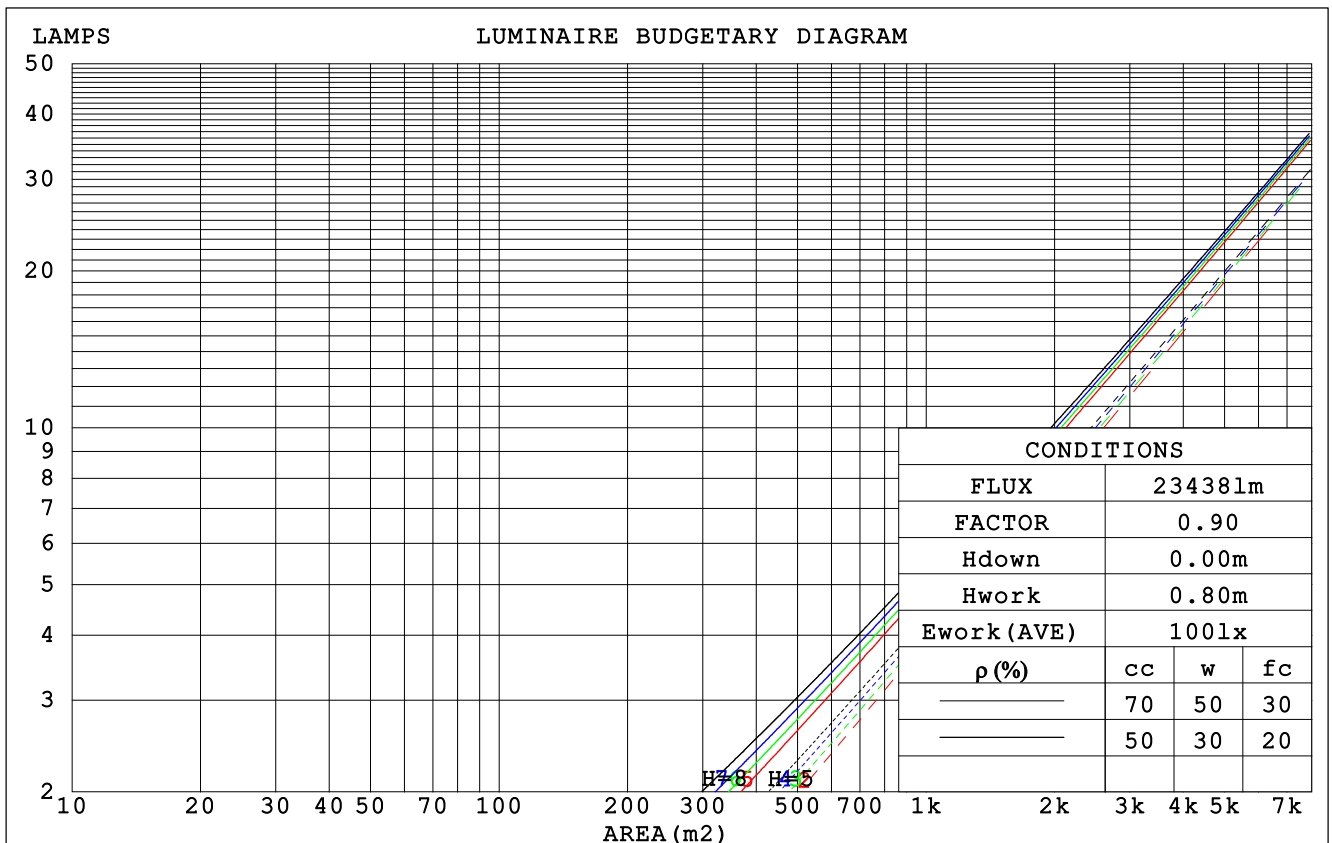


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-16

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	.93	.91
2.0	.99	.94	.90	.97	.93	.89	.94	.90	.87	.91	.88	.85	.88	.86	.83	.81
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.84	.80	.76	.81	.78	.75	.73
4.0	.83	.76	.71	.81	.75	.70	.79	.74	.69	.77	.72	.68	.75	.71	.68	.66
5.0	.76	.69	.63	.75	.68	.63	.73	.67	.62	.71	.66	.62	.69	.65	.61	.59
6.0	.70	.62	.57	.69	.62	.57	.67	.61	.56	.66	.60	.56	.64	.59	.56	.54
7.0	.64	.57	.52	.63	.57	.52	.62	.56	.51	.61	.55	.51	.59	.55	.51	.49
8.0	.59	.52	.47	.59	.52	.47	.58	.51	.47	.56	.51	.47	.55	.50	.46	.45
9.0	.55	.48	.43	.55	.48	.43	.54	.47	.43	.53	.47	.43	.52	.46	.43	.41
10.0	.51	.44	.40	.51	.44	.40	.50	.44	.40	.49	.44	.40	.48	.43	.39	.38



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-06-16

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

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	.215	.123	.039	.209	.119	.038	.196	.112	.036	.184	.106	.034	.173	.100	.032	
2.0	.209	.115	.035	.203	.112	.034	.192	.107	.033	.182	.102	.032	.173	.098	.031	
3.0	.200	.106	.032	.195	.104	.031	.185	.100	.031	.177	.097	.030	.168	.093	.029	
4.0	.190	.099	.029	.186	.097	.029	.177	.094	.028	.170	.091	.027	.163	.088	.027	
5.0	.181	.092	.027	.177	.091	.026	.169	.088	.026	.163	.086	.026	.156	.083	.025	
6.0	.172	.086	.025	.168	.085	.024	.162	.083	.024	.156	.081	.024	.150	.079	.023	
7.0	.163	.081	.023	.160	.080	.023	.154	.078	.022	.149	.076	.022	.144	.075	.022	
8.0	.155	.076	.021	.152	.075	.021	.147	.073	.021	.142	.072	.021	.138	.071	.021	
9.0	.148	.071	.020	.145	.071	.020	.140	.069	.020	.136	.068	.020	.132	.067	.019	
10.0	.141	.067	.019	.139	.067	.019	.134	.066	.019	.130	.065	.018	.126	.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	.161	.132	.108	.138	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.151	.114	.084	.129	.098	.073	.089	.068	.051	.051	.040	.030	.016	.013	.010	
4.0	.142	.100	.067	.122	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.055	.116	.077	.047	.080	.054	.034	.046	.031	.020	.015	.010	.007	
6.0	.128	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.122	.073	.038	.105	.063	.033	.072	.044	.024	.042	.026	.014	.014	.009	.005	
8.0	.116	.067	.033	.100	.058	.028	.069	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.111	.062	.028	.096	.054	.025	.066	.038	.018	.039	.022	.010	.013	.007	.003	
10.0	.106	.057	.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:2017-06-16

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	24.9	26.1	25.2	26.3	26.5	18.2	19.4	18.4	19.6	19.7
3H	24.8	25.9	25.1	26.1	26.3	18.2	19.3	18.5	19.5	19.7
4H	24.7	25.8	25.0	26.0	26.2	18.2	19.2	18.5	19.5	19.7
6H	24.7	25.6	25.0	25.9	26.1	18.2	19.2	18.6	19.5	19.7
8H	24.6	25.5	24.9	25.8	26.1	18.3	19.2	18.6	19.4	19.7
12H	24.6	25.5	24.9	25.7	26.0	18.3	19.1	18.6	19.4	19.7
4H 2H	24.7	25.7	25.0	26.0	26.2	18.5	19.5	18.7	19.7	19.9
3H	24.6	25.5	24.9	25.8	26.0	18.5	19.4	18.9	19.7	20.0
4H	24.5	25.3	24.9	25.6	26.0	18.6	19.4	19.0	19.7	20.0
6H	24.5	25.2	24.9	25.5	25.9	18.7	19.4	19.1	19.7	20.1
8H	24.5	25.1	24.9	25.5	25.8	18.7	19.4	19.1	19.7	20.1
12H	24.4	25.0	24.8	25.4	25.8	18.8	19.4	19.2	19.7	20.1
8H 4H	24.4	25.1	24.8	25.4	25.8	18.6	19.2	19.0	19.6	20.0
6H	24.4	24.9	24.8	25.3	25.7	18.7	19.3	19.2	19.7	20.1
8H	24.4	24.8	24.8	25.2	25.7	18.8	19.3	19.3	19.7	20.2
12H	24.3	24.7	24.8	25.2	25.7	18.9	19.3	19.4	19.8	20.2
12H 4H	24.4	25.0	24.8	25.3	25.7	18.6	19.2	19.0	19.5	19.9
6H	24.3	24.8	24.8	25.2	25.7	18.7	19.2	19.2	19.6	20.1
8H	24.3	24.7	24.8	25.2	25.6	18.9	19.2	19.3	19.7	20.2
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 4.9					+ 2.1 / - 3.7				
1.5H	+ 2.5 / - 3.3					+ 3.4 / - 4.4				
2.0H	+ 5.3 / - 8.0					+ 3.7 / - 2.2				

CIE Pub.117 Corrected 23438 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-16

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:

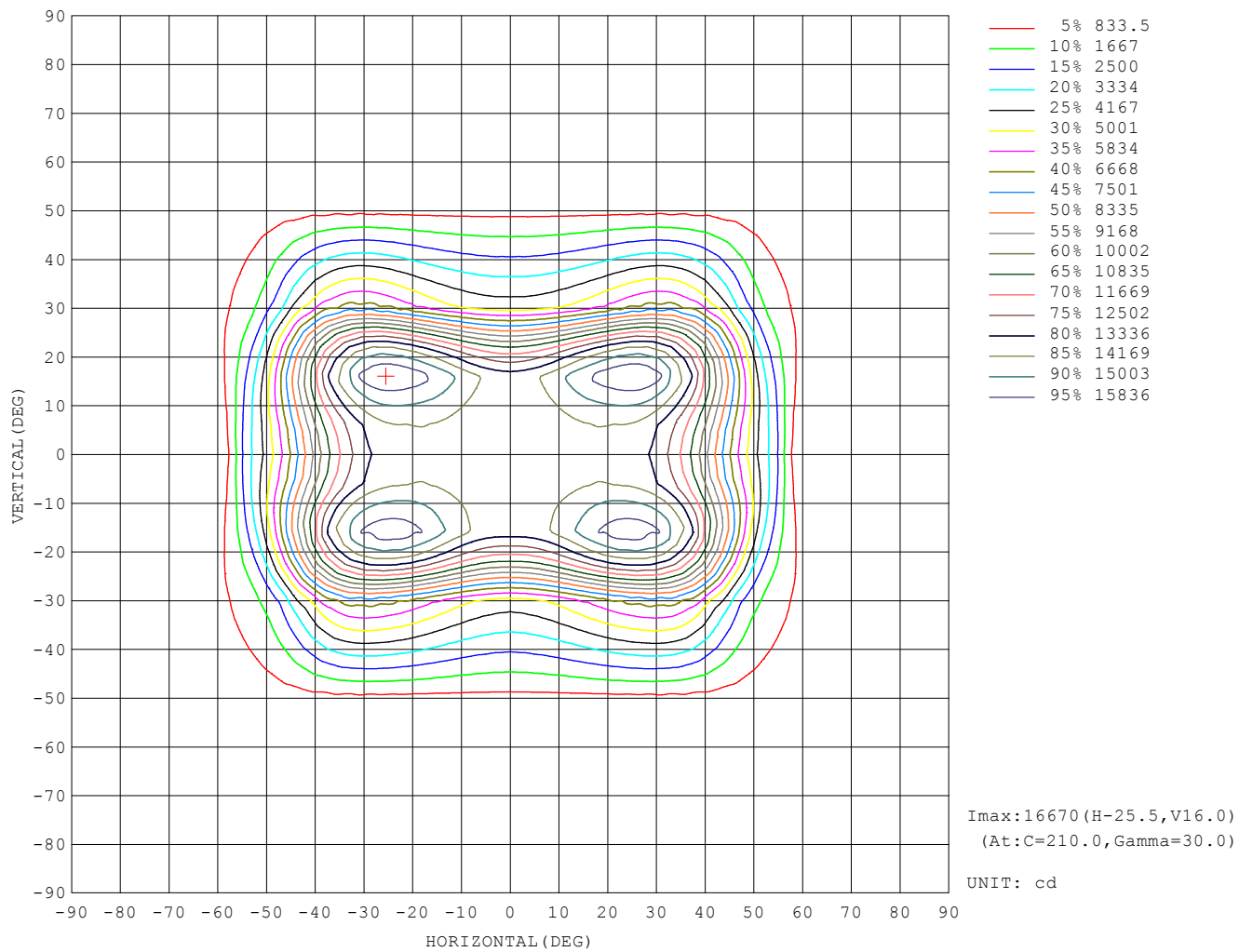
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	74	65	60	73	65	60	72	65	60	55
0.80	84	75	70	83	75	70	81	74	69	64
1.00	91	83	78	90	82	78	88	83	77	72
1.25	96	89	84	95	89	84	93	87	83	78
1.50	100	93	89	99	93	88	96	91	87	82
2.00	104	99	95	103	98	94	100	96	92	86
2.50	107	102	98	105	100	97	102	98	95	88
3.00	109	104	101	107	103	100	103	100	98	90
4.00	111	108	105	109	106	103	105	103	100	93
5.00	113	110	107	111	108	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: 2017-06-16

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:

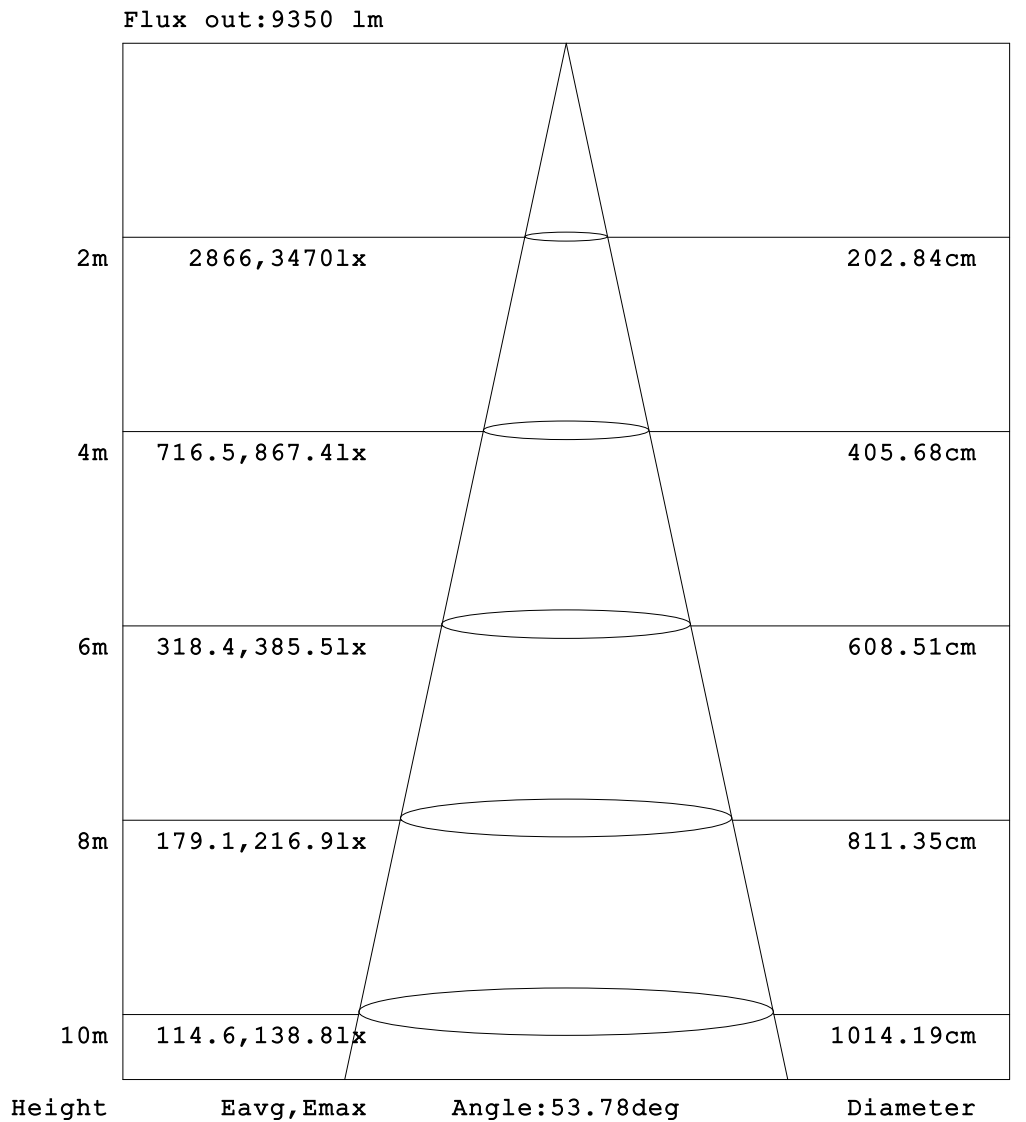
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-16

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

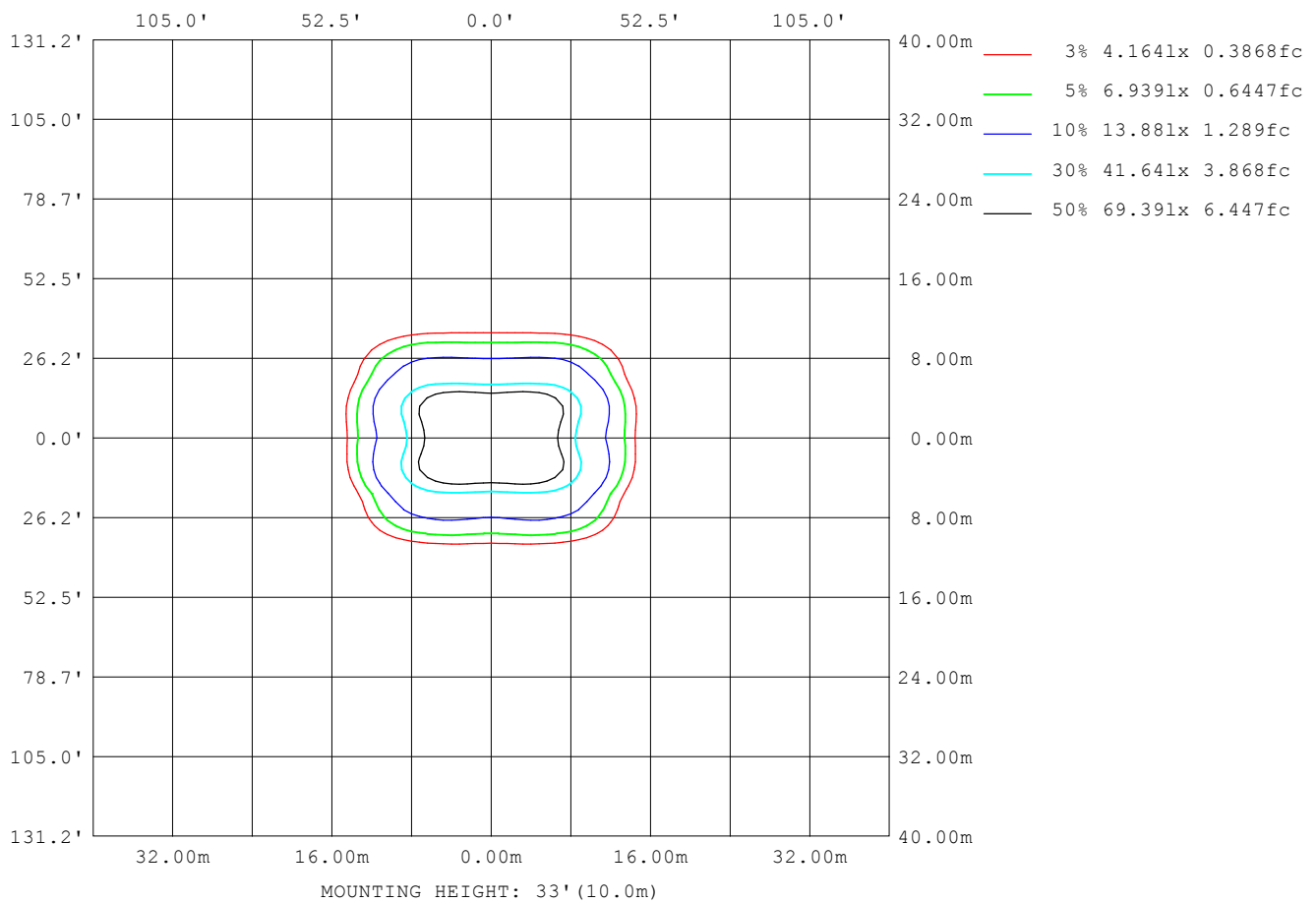


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-16

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: 2017-06-16

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:229.8V I:0.8189A P:181.8W PF:0.9658 Lamp Flux:23438x1 lm		
NAME: LHB01-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra80 6090DEG L02802	DIM.: 0.718*0.275*0.102	SERIAL No.:
MFR.:	SUR.:0.255*0.69	Shielding Angle:

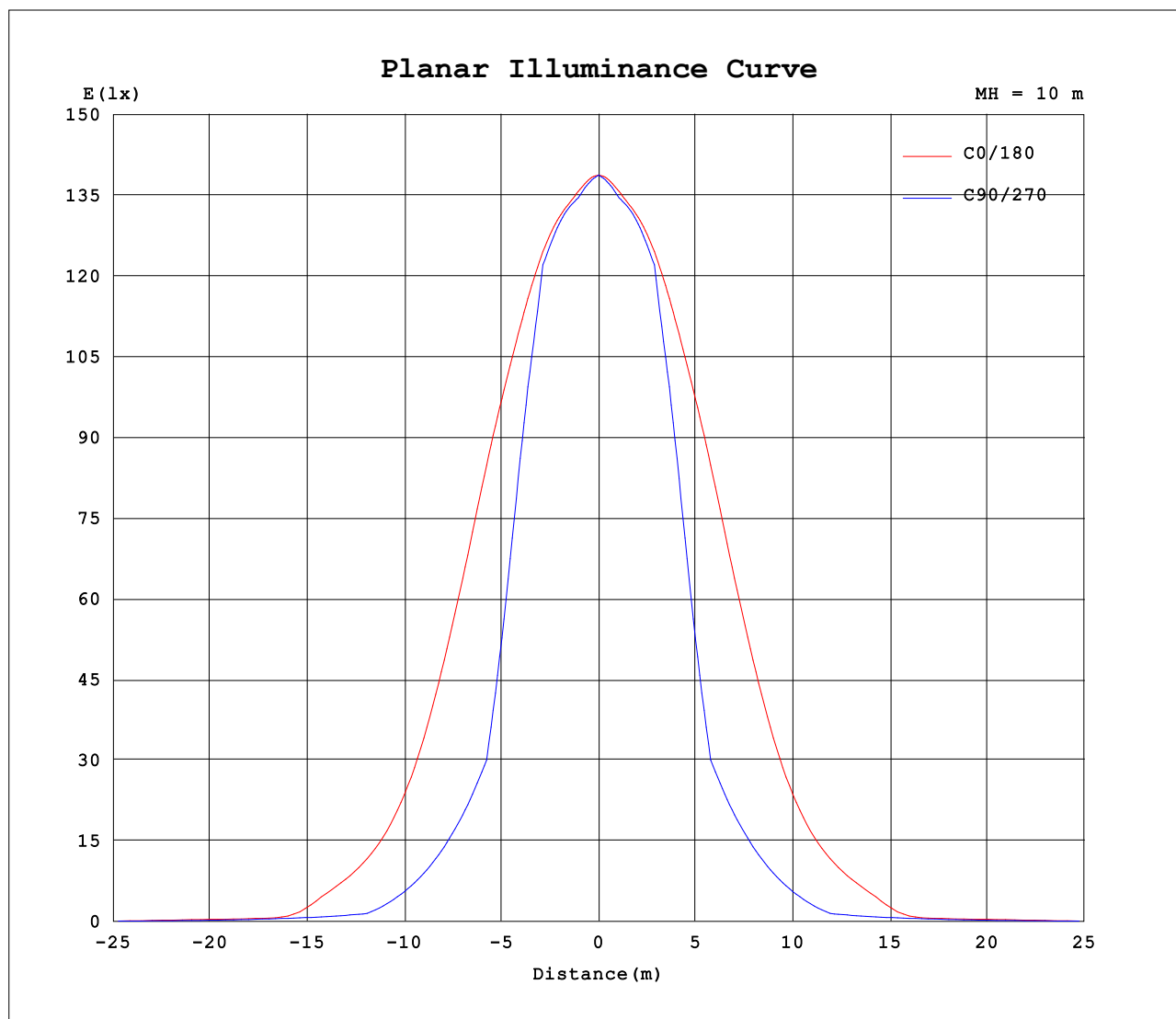
AvgL	cd/m2
L_0~180 (65) av	6341
L_0~180 (75) av	3746
L_0~180 (85) av	2130
L_90~270 (65) av	4079
L_90~270 (75) av	3558
L_90~270 (85) av	4093
L_45 (65) av	5532
L_45 (75) av	3562
L_45 (85) av	3750

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-16

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: 2017-06-16

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:

```

Range: 0 - 90DEG
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:

```

```

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

```

UNIT: $\times 10 \text{cd}$

```

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:

```