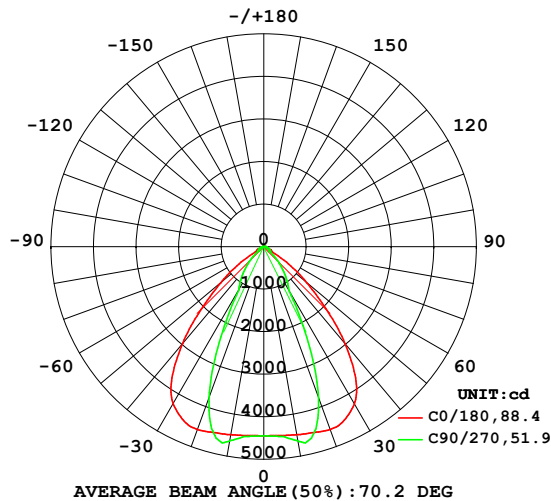


## LUMINAIRE PHOTOMETRIC TEST REPORT

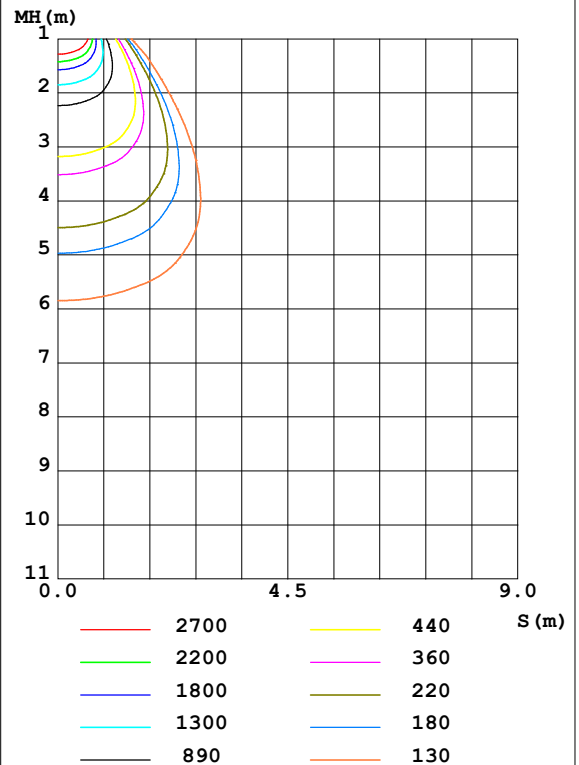
Test:U:230.0V I:0.2731A P:61.99W PF:0.9869 Lamp Flux:7389.14x1 lm		
NAME: LHB01-60	TYPE:60W	WEIGHT:
SPEC.:4000K Ra80 6090DEG L02802	DIM.: 0.486*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.466*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 119.19 lm/W			
MODEL	LHB01-60	Imax(cd)	5547	S/MH(C0/180)	1.26
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH(C90/270)	0.76
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	7389.1	$\eta$ UP,DN(C0-180)	0.0,49.7
NOMINAL FLUX(lm)	7389.14	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,50.3
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	$\eta$ 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:2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	4458	4471	4478	4471	4458	4472	4478	4472	0- 5	106.6	106.6	1.44,1.44
10	4488	4580	4639	4580	4488	4576	4639	4576	5- 10	323.1	429.7	5.82,5.82
15	4524	4883	4546	4883	4524	4870	4546	4870	10- 15	551.5	981.2	13.3,13.3
20	4574	5114	3771	5114	4574	5114	3771	5114	15- 20	769.4	1751	23.7,23.7
25	4496	4933	2488	4933	4496	4991	2488	4991	20- 25	929.6	2680	36.3,36.3
30	4265	4208	1188	4208	4265	4277	1188	4277	25- 30	984.3	3665	49.6,49.6
35	3770	3026	938.4	3026	3770	3033	938.4	3033	30- 35	946.0	4611	62.4,62.4
40	2971	1770	688.9	1770	2971	1778	688.9	1778	35- 40	861.6	5472	74.1,74.1
45	2083	1427	439.4	1427	2083	1441	439.4	1441	40- 45	711.3	6183	83.7,83.7
50	1323	999.3	189.9	999.3	1323	1032	189.9	1032	45- 50	505.8	6689	90.5,90.5
55	712.5	545.1	161.3	545.1	712.5	577.9	161.3	577.9	50- 55	304.4	6994	94.6,94.6
60	187.2	167.3	132.6	167.3	187.2	182.8	132.6	182.8	55- 60	159.0	7153	96.8,96.8
65	155.1	129.9	104.0	129.9	155.1	143.9	104.0	143.9	60- 65	87.97	7241	98,98
70	88.61	91.89	75.44	91.89	88.61	103.1	75.44	103.1	65- 70	58.61	7299	98.8,98.8
75	54.79	54.08	57.08	54.08	54.79	62.43	57.08	62.43	70- 75	40.15	7339	99.3,99.3
80	43.65	35.44	38.72	35.44	43.65	40.79	38.72	40.79	75- 80	27.03	7366	99.7,99.7
85	7.865	19.15	20.36	19.15	7.865	21.27	20.36	21.27	80- 85	16.52	7383	99.9,99.9
90	1.012	2.778	2.006	2.778	1.012	1.503	2.006	1.503	85- 90	6.178	7389	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): 6183.5 lm

%lum = 83.7%

%lamp = 83.7%

Conical surface Flux(120deg): 7152.7 lm

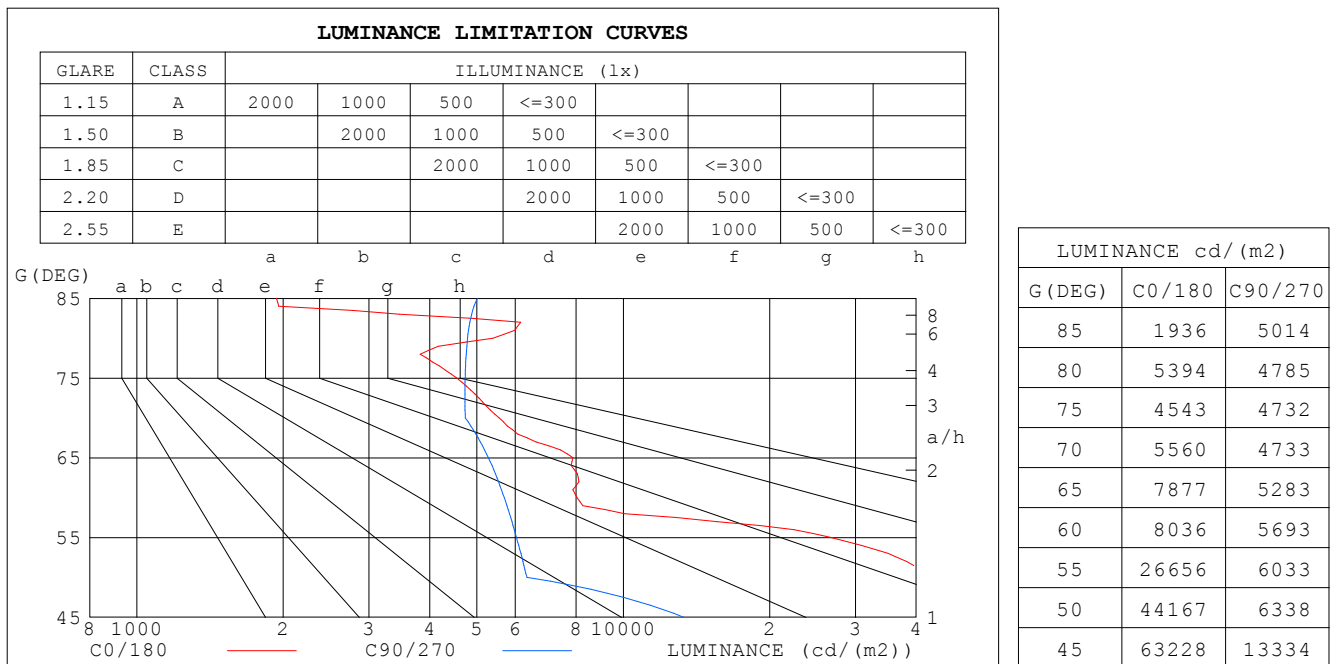
%lum = 96.8%

%lamp = 96.8%

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

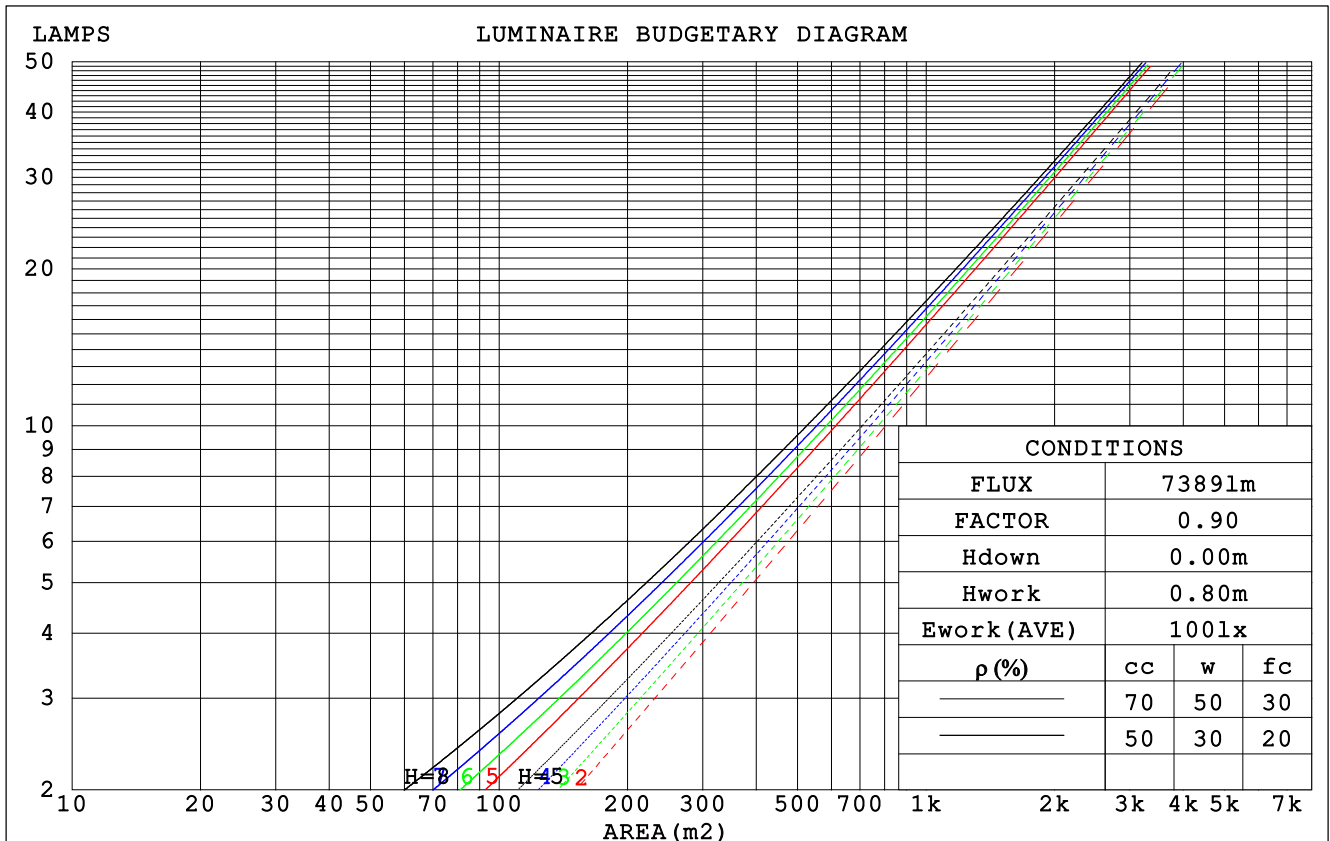


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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
p <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p <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	1.09	1.06	1.03	1.07	1.04	1.02	1.03	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	.82
3.0	.91	.85	.80	.89	.84	.79	.86	.82	.78	.84	.80	.77	.81	.78	.75	.74
4.0	.83	.76	.71	.82	.75	.71	.79	.74	.70	.77	.73	.69	.75	.71	.68	.66
5.0	.76	.69	.64	.75	.69	.64	.73	.67	.63	.71	.66	.62	.70	.65	.62	.60
6.0	.70	.63	.58	.69	.62	.58	.68	.62	.57	.66	.61	.57	.65	.60	.56	.55
7.0	.65	.58	.53	.64	.57	.52	.63	.57	.52	.61	.56	.52	.60	.55	.51	.50
8.0	.60	.53	.48	.59	.53	.48	.58	.52	.48	.57	.52	.48	.56	.51	.47	.46
9.0	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.52	.47	.44	.42
10.0	.52	.45	.41	.52	.45	.41	.51	.45	.41	.50	.44	.40	.49	.44	.40	.39



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2017-04-10

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	.214	.122	.039	.207	.118	.038	.195	.112	.036	.183	.106	.034	.172	.100	.032	
2.0	.207	.114	.035	.202	.111	.034	.191	.106	.033	.181	.101	.032	.171	.097	.031	
3.0	.198	.105	.032	.193	.103	.031	.184	.099	.030	.175	.096	.029	.167	.092	.029	
4.0	.188	.098	.029	.184	.096	.028	.176	.093	.028	.168	.090	.027	.161	.087	.027	
5.0	.179	.091	.026	.175	.090	.026	.168	.087	.026	.161	.085	.025	.154	.083	.025	
6.0	.170	.085	.024	.166	.084	.024	.160	.082	.024	.154	.080	.023	.148	.078	.023	
7.0	.161	.080	.023	.158	.079	.022	.152	.077	.022	.147	.075	.022	.142	.074	.022	
8.0	.153	.075	.021	.151	.074	.021	.146	.073	.021	.141	.071	.021	.136	.070	.020	
9.0	.146	.071	.020	.144	.070	.020	.139	.069	.019	.135	.067	.019	.130	.066	.019	
10.0	.139	.067	.019	.137	.066	.018	.133	.065	.018	.129	.064	.018	.125	.063	.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	.094	.094	.079	.065	.054	.046	.038	.017	.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	.059	.084	.060	.041	.048	.035	.024	.016	.011	.008	
5.0	.134	.089	.055	.115	.077	.048	.079	.054	.034	.046	.031	.020	.015	.010	.007	
6.0	.127	.080	.045	.109	.069	.040	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.121	.072	.038	.104	.063	.033	.072	.044	.024	.042	.026	.014	.014	.008	.005	
8.0	.116	.067	.033	.100	.058	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.111	.062	.028	.095	.053	.025	.066	.038	.018	.038	.022	.011	.012	.007	.003	
10.0	.106	.057	.025	.091	.050	.022	.063	.035	.016	.037	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-10

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	25.4	26.5	25.6	26.7	26.9	17.7	18.9	17.9	19.0	19.2
3H	25.2	26.3	25.5	26.5	26.7	17.8	18.9	18.1	19.1	19.3
4H	25.2	26.2	25.5	26.4	26.7	17.9	18.9	18.2	19.2	19.4
6H	25.1	26.0	25.4	26.3	26.6	18.0	19.0	18.3	19.2	19.5
8H	25.1	26.0	25.4	26.2	26.5	18.1	19.0	18.4	19.2	19.5
12H	25.0	25.9	25.3	26.2	26.4	18.1	19.0	18.4	19.2	19.5
4H 2H	25.1	26.1	25.4	26.4	26.6	18.1	19.1	18.4	19.3	19.5
3H	25.0	25.9	25.4	26.2	26.5	18.3	19.2	18.6	19.5	19.7
4H	25.0	25.8	25.3	26.1	26.4	18.5	19.3	18.8	19.6	19.9
6H	24.9	25.6	25.3	26.0	26.3	18.6	19.3	19.0	19.7	20.0
8H	24.9	25.5	25.3	25.9	26.3	18.7	19.4	19.1	19.7	20.1
12H	24.9	25.4	25.3	25.8	26.2	18.8	19.4	19.2	19.7	20.1
8H 4H	24.9	25.5	25.3	25.9	26.2	18.5	19.1	18.9	19.5	19.9
6H	24.8	25.4	25.3	25.8	26.2	18.8	19.3	19.2	19.7	20.1
8H	24.8	25.3	25.3	25.7	26.1	18.9	19.4	19.4	19.8	20.2
12H	24.8	25.2	25.3	25.6	26.1	19.0	19.4	19.5	19.9	20.3
12H 4H	24.8	25.4	25.2	25.8	26.2	18.5	19.0	18.9	19.4	19.8
6H	24.8	25.3	25.2	25.7	26.1	18.8	19.2	19.2	19.6	20.1
8H	24.8	25.2	25.3	25.6	26.1	18.9	19.3	19.4	19.8	20.2
Variations with the observer position at spacings:										
S = 1.0H	+ 2.5 / - 4.7					+ 1.7 / - 2.7				
1.5H	+ 2.9 / - 3.5					+ 3.2 / - 3.2				
2.0H	+ 5.4 / - 7.3					+ 3.2 / - 1.5				

CIE Pub.117 Corrected 7389 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.9)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-10

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:

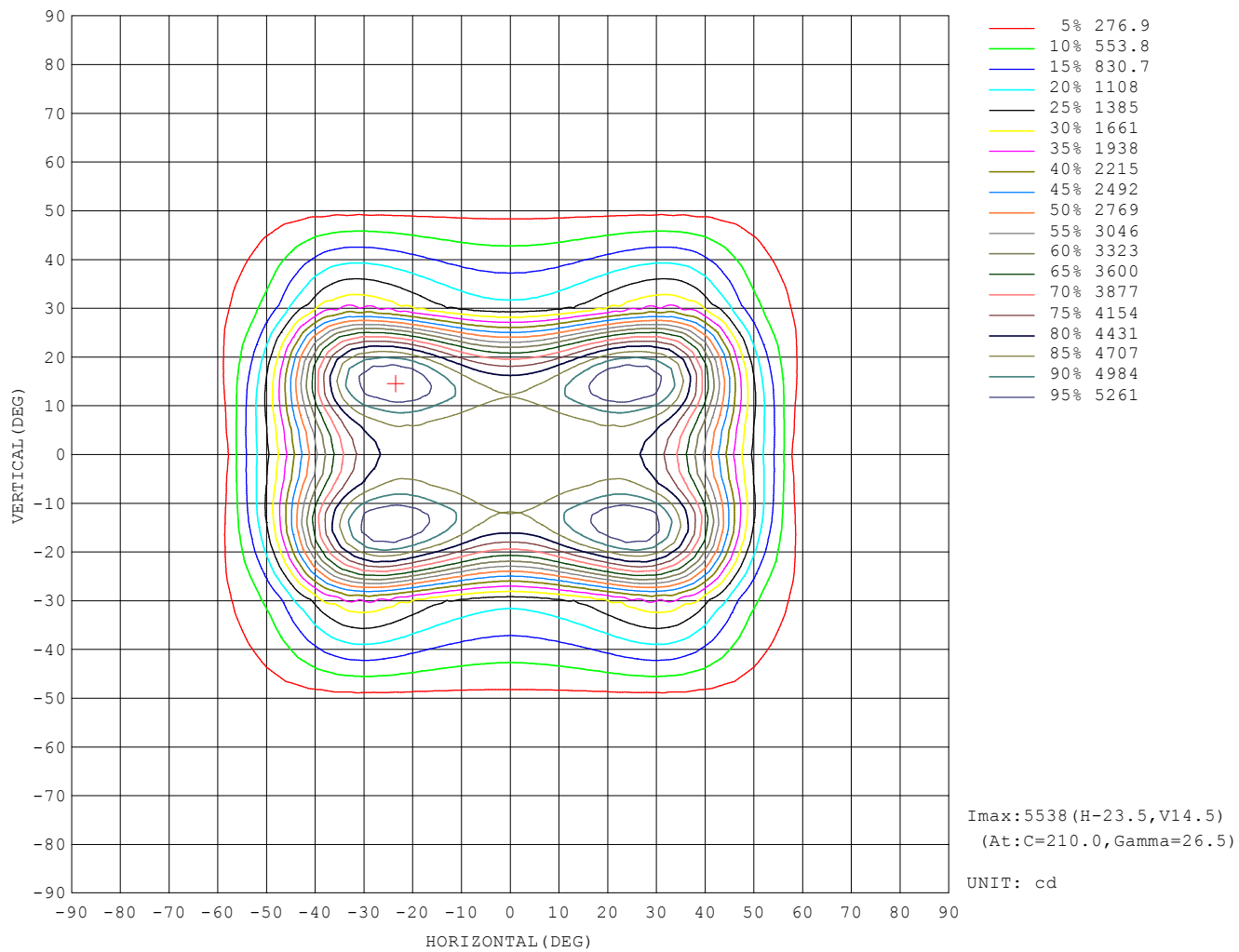
### UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	75	66	61	74	66	61	73	66	61	56
0.80	84	76	71	83	76	71	82	75	71	66
1.00	91	84	79	90	83	78	88	83	78	73
1.25	97	90	85	95	89	85	93	88	84	79
1.50	100	94	89	99	93	89	96	92	88	82
2.00	105	99	95	103	98	94	100	96	93	87
2.50	107	102	98	105	101	97	102	98	95	89
3.00	109	105	101	107	103	100	104	100	98	91
4.00	111	108	105	109	106	103	105	103	101	93
5.00	113	110	107	111	108	106	107	104	103	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: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

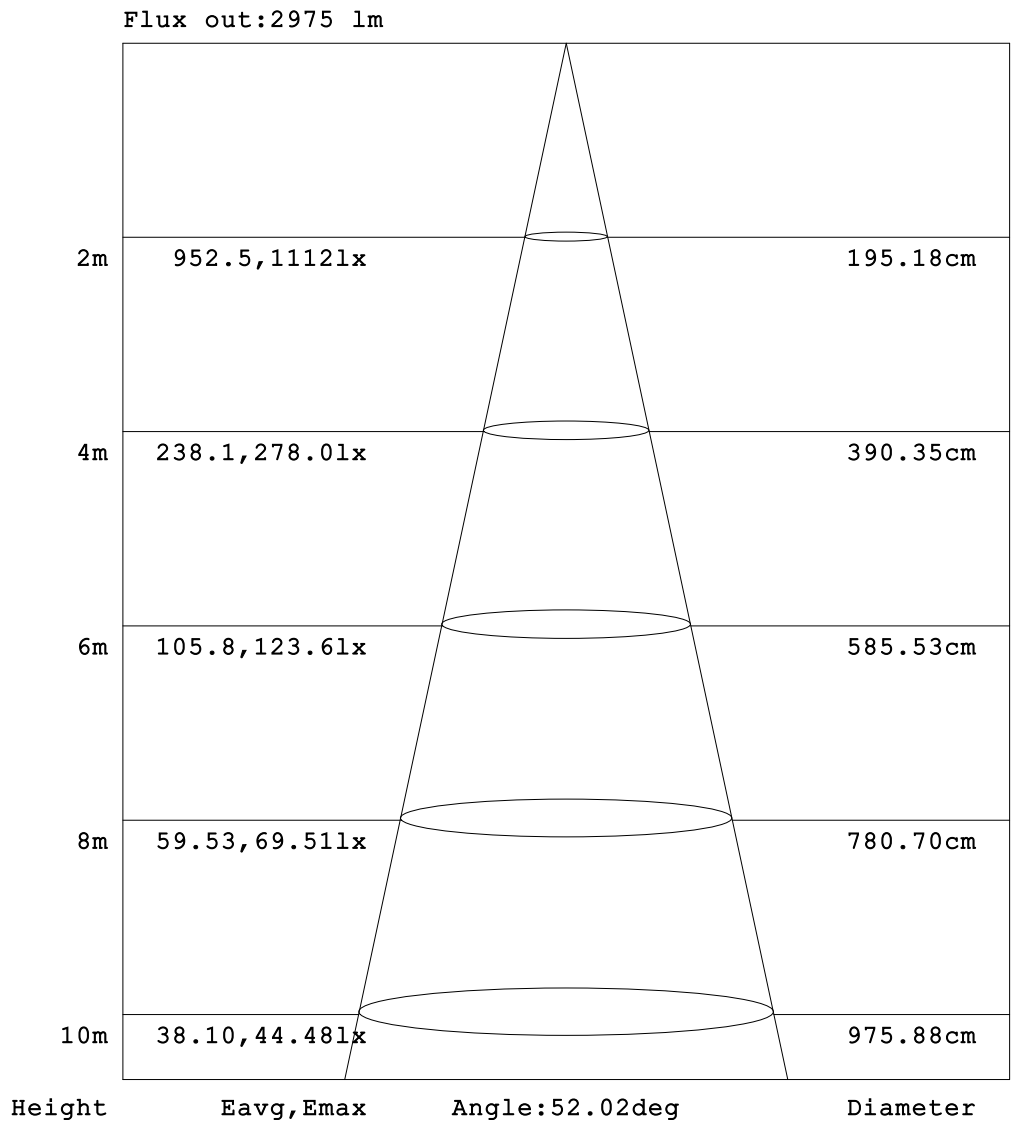


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

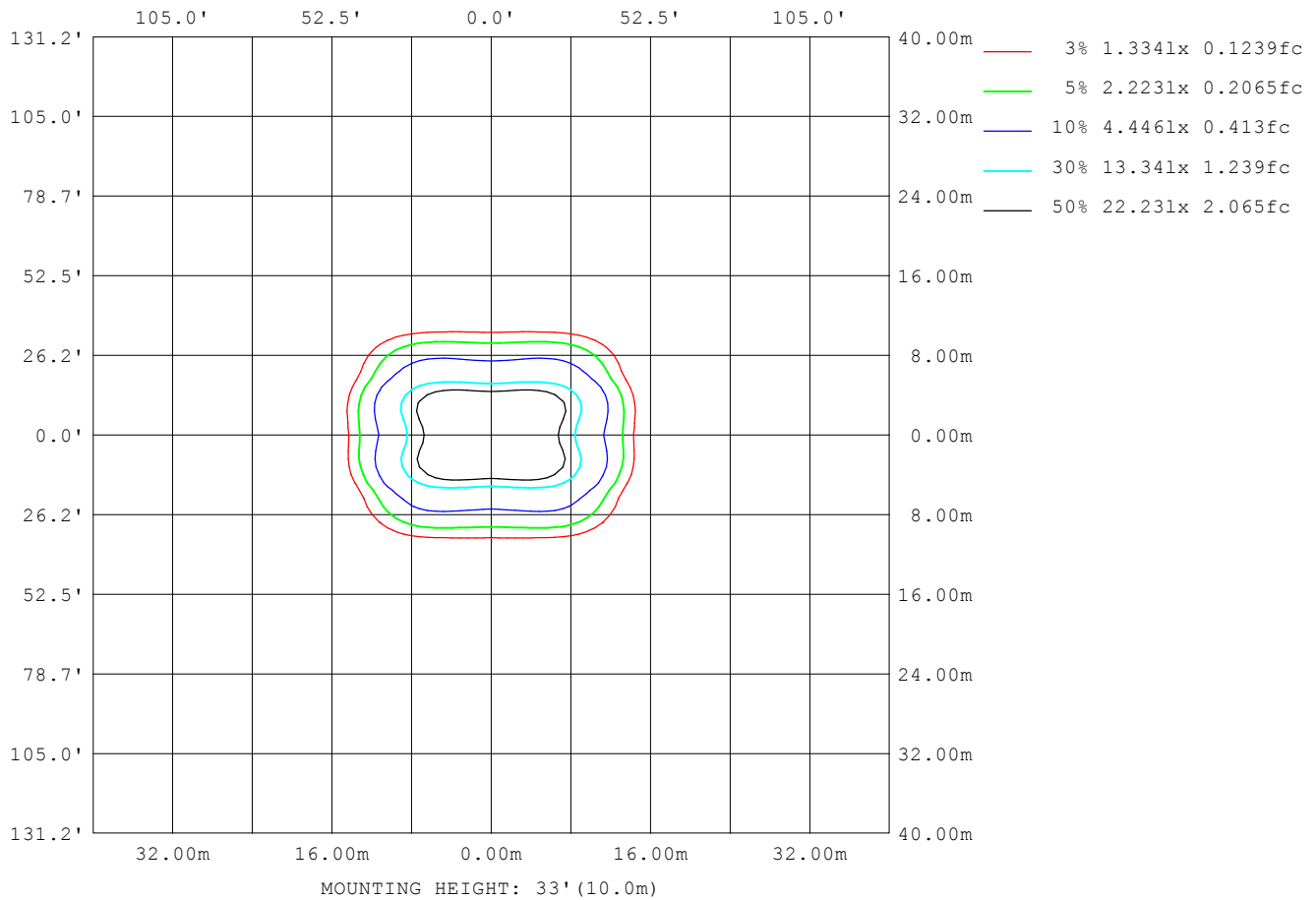


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:230.0V I:0.2731A P:61.99W PF:0.9869 Lamp Flux:7389.14x1 lm		
NAME: LHB01-60	TYPE:60W	WEIGHT:
SPEC.:4000K Ra80 6090DEG L02802	DIM.: 0.486*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.466*0.1	Shielding Angle:

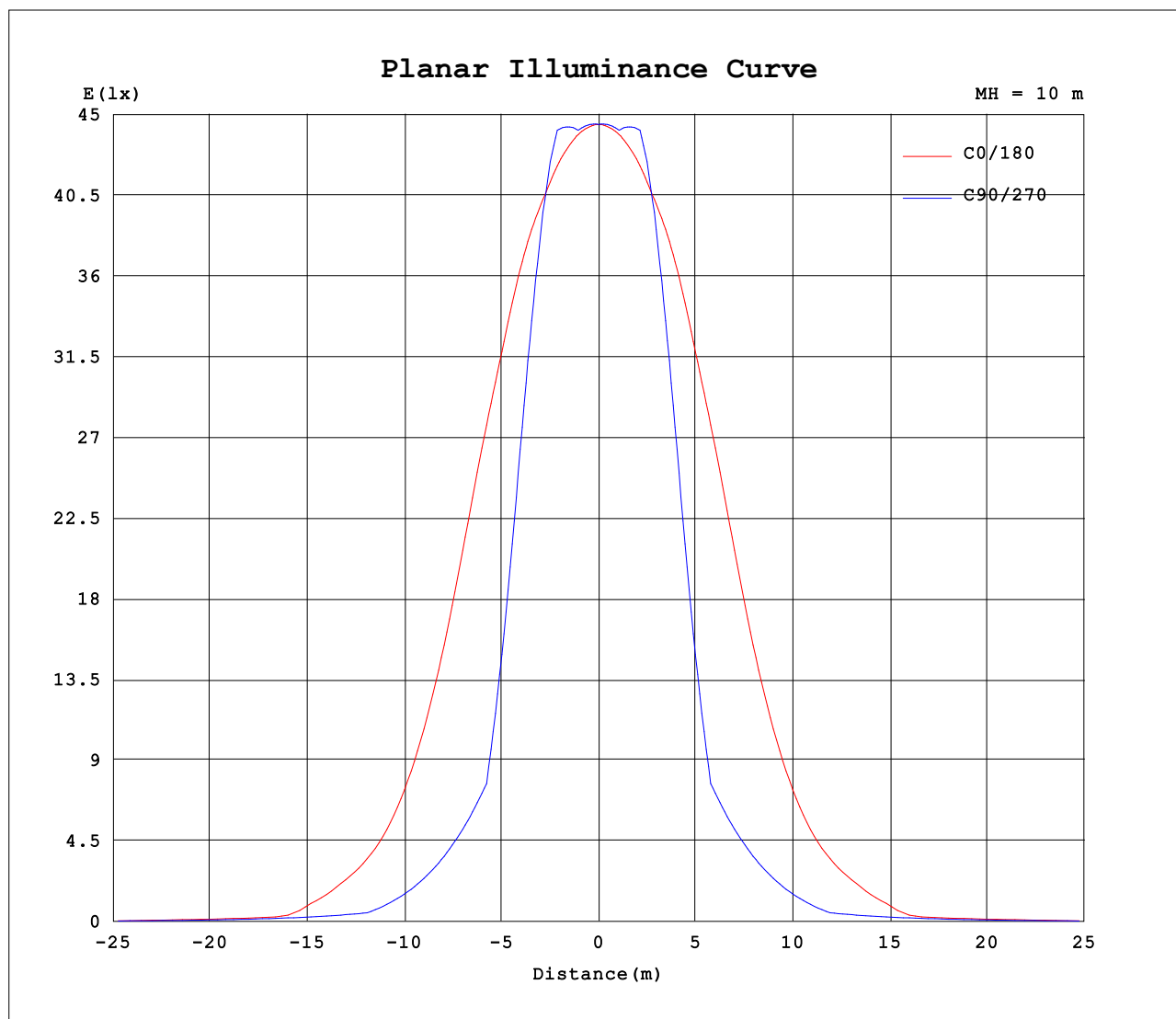
AvgL	cd/m2
L_0~180 (65) av	7877
L_0~180 (75) av	4543
L_0~180 (85) av	1936
L_90~270 (65) av	5283
L_90~270 (75) av	4732
L_90~270 (85) av	5014
L_45 (65) av	6952
L_45 (75) av	4830
L_45 (85) av	4975

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-10

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: 2017-04-10

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```

UNIT: 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:

```