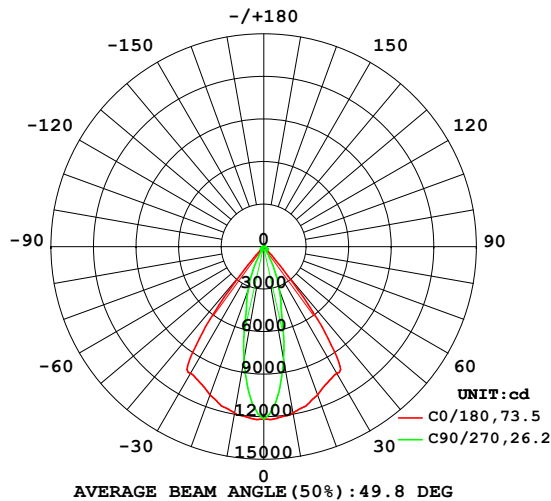


## LUMINAIRE PHOTOMETRIC TEST REPORT

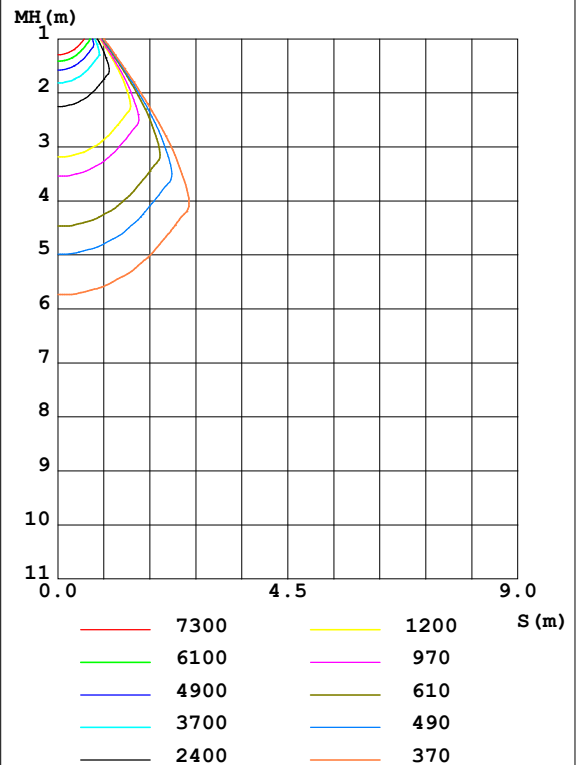
Test:U:230.0V I:0.2730A P:61.96W PF:0.9869 Lamp Flux:7444.36x1 lm		
NAME: LHB01-60	TYPE:60W	WEIGHT:
SPEC.:4000K Ra80 3070DEG L02801	DIM.: 0.486*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.466*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 120.14 lm/W			
MODEL	LHB01-60	Imax(cd)	12194	S/MH(C0/180)	1.06
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH(C90/270)	0.44
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	7444.4	$\eta$ UP,DN(C0-180)	0.0,49.4
NOMINAL FLUX(lm)	7444.36	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,50.6
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	230	$\eta$ down(%)	100.0	CIBSE SHR MAX	0.50

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:2017-04-08

$\gamma$  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	1211	1133	1074	1133	1211	1136	1074	1136	0- 5	279.9	279.9	3.76,3.76
10	1193	962.5	807.6	962.5	1193	967.8	807.6	967.8	5- 10	753.9	1034	13.9,13.9
15	1161	740.1	496.7	740.1	1161	752.5	496.7	752.5	10- 15	1039	2073	27.9,27.9
20	1113	482.8	328.6	482.8	1113	493.4	328.6	493.4	15- 20	1136	3209	43.1,43.1
25	1061	331.5	180.2	331.5	1061	339.7	180.2	339.7	20- 25	1134	4343	58.3,58.3
30	1032	221.0	31.84	221.0	1032	227.2	31.84	227.2	25- 30	1043	5387	72.4,72.4
35	791.3	116.2	31.51	116.2	791.3	118.6	31.51	118.6	30- 35	899.5	6286	84.4,84.4
40	211.5	28.66	31.17	28.66	211.5	29.99	31.17	29.99	35- 40	560.1	6846	92,92
45	24.31	23.43	30.84	23.43	24.31	25.59	30.84	25.59	40- 45	183.1	7029	94.4,94.4
50	17.45	18.05	30.50	18.05	17.45	19.95	30.50	19.95	45- 50	87.52	7117	95.6,95.6
55	13.76	14.25	25.85	14.25	13.76	15.06	25.85	15.06	50- 55	74.69	7191	96.6,96.6
60	11.28	12.09	21.20	12.09	11.28	12.38	21.20	12.38	55- 60	65.59	7257	97.5,97.5
65	9.207	9.665	16.54	9.665	9.207	9.994	16.54	9.994	60- 65	57.27	7314	98.3,98.3
70	7.130	7.313	11.89	7.313	7.130	7.683	11.89	7.683	65- 70	47.65	7362	98.9,98.9
75	4.668	4.920	8.988	4.920	4.668	5.370	8.988	5.370	70- 75	36.44	7398	99.4,99.4
80	2.197	3.314	6.085	3.314	2.197	3.586	6.085	3.586	75- 80	25.19	7424	99.7,99.7
85	0.4561	1.832	3.182	1.832	0.4561	1.887	3.182	1.887	80- 85	14.99	7439	99.9,99.9
90	0.0562	0.3612	0.2788	0.3612	0.0562	0.1949	0.2788	0.1949	85- 90	5.798	7444	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): 7029.2 lm

%lum = 94.4%

%lamp = 94.4%

Conical surface Flux(120deg): 7257 lm

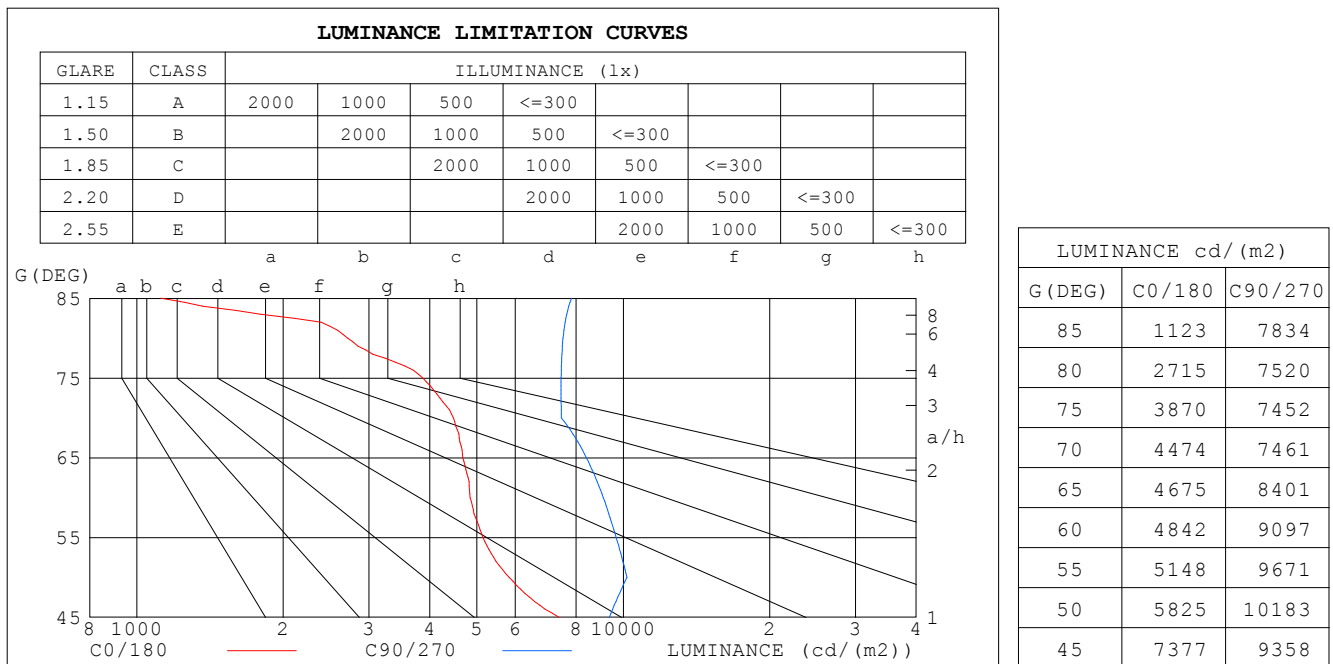
%lum = 97.5%

%lamp = 97.5%

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-08

$\gamma$  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

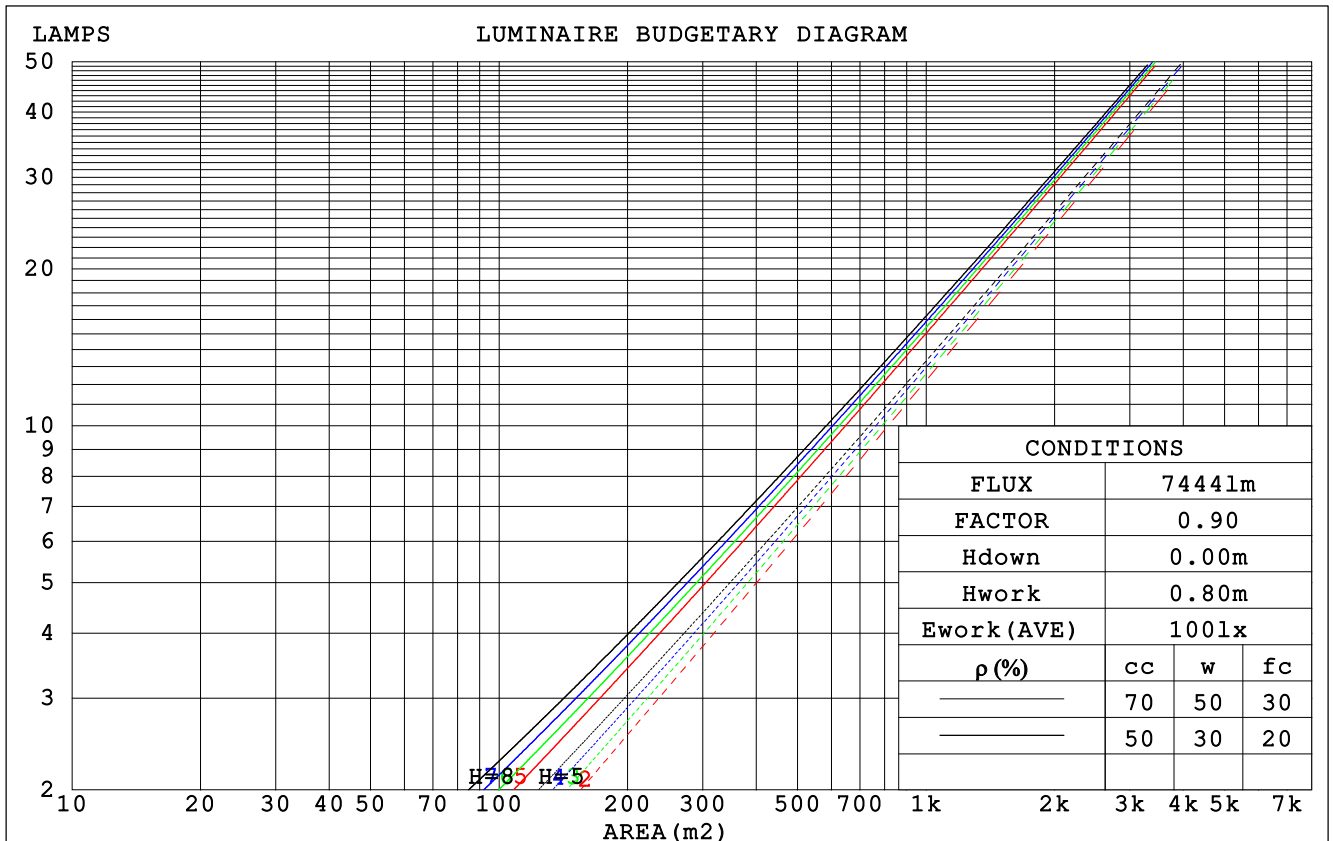


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2017-04-08

$\gamma$  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
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	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.01	.99	.98	.97	.96	.95	.93
2.0	1.03	.99	.95	1.01	.97	.94	.98	.95	.92	.95	.92	.90	.92	.90	.88	.87
3.0	.96	.91	.87	.95	.90	.86	.92	.88	.85	.90	.86	.84	.87	.85	.82	.81
4.0	.90	.84	.80	.89	.84	.80	.87	.82	.79	.85	.81	.78	.83	.80	.77	.75
5.0	.84	.79	.74	.83	.78	.74	.82	.77	.73	.80	.76	.73	.78	.75	.72	.71
6.0	.79	.74	.69	.79	.73	.69	.77	.72	.69	.76	.72	.68	.75	.71	.68	.66
7.0	.75	.69	.65	.74	.69	.65	.73	.68	.65	.72	.67	.64	.71	.67	.64	.62
8.0	.71	.65	.61	.70	.65	.61	.69	.64	.61	.68	.64	.61	.67	.63	.60	.59
9.0	.67	.62	.58	.67	.61	.58	.66	.61	.57	.65	.60	.57	.64	.60	.57	.56
10.0	.64	.58	.55	.64	.58	.55	.63	.58	.54	.62	.57	.54	.61	.57	.54	.53



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-08

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	.182	.104	.033	.176	.100	.032	.163	.094	.030	.152	.087	.028	.141	.082	.026		
2.0	.173	.095	.029	.167	.092	.028	.157	.087	.027	.147	.082	.026	.138	.078	.025		
3.0	.164	.087	.026	.159	.085	.026	.150	.081	.025	.141	.077	.024	.133	.074	.023		
4.0	.155	.080	.024	.151	.079	.023	.143	.076	.023	.136	.073	.022	.129	.070	.021		
5.0	.147	.075	.022	.143	.073	.021	.136	.071	.021	.130	.069	.020	.124	.066	.020		
6.0	.139	.070	.020	.136	.069	.020	.130	.067	.019	.125	.065	.019	.120	.063	.019		
7.0	.133	.066	.019	.130	.065	.018	.125	.063	.018	.120	.061	.018	.115	.060	.018		
8.0	.127	.062	.017	.124	.061	.017	.120	.060	.017	.115	.058	.017	.111	.057	.017		
9.0	.121	.059	.016	.119	.058	.016	.115	.057	.016	.111	.056	.016	.107	.054	.016		
10.0	.116	.056	.015	.114	.055	.015	.110	.054	.015	.107	.053	.015	.103	.052	.015		

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	.171	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.156	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013		
3.0	.144	.114	.089	.123	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010		
4.0	.134	.099	.072	.115	.085	.063	.079	.060	.044	.046	.035	.026	.015	.011	.009		
5.0	.125	.087	.060	.107	.075	.052	.074	.053	.037	.043	.031	.022	.014	.010	.007		
6.0	.117	.078	.050	.101	.067	.043	.069	.047	.031	.040	.028	.018	.013	.009	.006		
7.0	.111	.070	.042	.095	.061	.037	.066	.043	.026	.038	.025	.016	.012	.008	.005		
8.0	.105	.064	.036	.090	.056	.032	.062	.039	.022	.036	.023	.013	.012	.008	.004		
9.0	.099	.059	.031	.086	.051	.027	.059	.036	.019	.035	.021	.012	.011	.007	.004		
10.0	.095	.054	.028	.082	.047	.024	.057	.033	.017	.033	.020	.010	.011	.006	.003		

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-08

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	23.3	24.2	23.5	24.4	24.5	12.8	13.7	13.0	13.9	14.1
3H	23.1	24.0	23.4	24.2	24.4	14.5	15.3	14.7	15.5	15.7
4H	23.1	23.9	23.4	24.1	24.4	15.3	16.1	15.5	16.3	16.5
6H	23.0	23.8	23.3	24.0	24.3	16.0	16.8	16.3	17.0	17.3
8H	23.0	23.7	23.3	24.0	24.2	16.3	17.0	16.6	17.3	17.6
12H	22.9	23.6	23.2	23.9	24.2	16.5	17.3	16.9	17.5	17.8
4H 2H	23.0	23.9	23.3	24.1	24.3	13.1	13.9	13.4	14.1	14.4
3H	22.9	23.7	23.3	23.9	24.2	14.9	15.6	15.2	15.9	16.1
4H	22.9	23.5	23.2	23.8	24.2	15.8	16.4	16.1	16.7	17.0
6H	22.8	23.4	23.2	23.7	24.1	16.6	17.2	17.0	17.5	17.9
8H	22.8	23.3	23.2	23.7	24.0	17.0	17.5	17.4	17.9	18.3
12H	22.7	23.2	23.2	23.6	24.0	17.3	17.8	17.7	18.2	18.6
8H 4H	22.8	23.3	23.2	23.7	24.0	15.9	16.4	16.3	16.8	17.1
6H	22.7	23.2	23.2	23.6	24.0	16.8	17.3	17.3	17.7	18.1
8H	22.7	23.1	23.2	23.5	23.9	17.3	17.7	17.8	18.1	18.6
12H	22.7	23.0	23.1	23.4	23.9	17.7	18.1	18.2	18.5	19.0
12H 4H	22.7	23.2	23.2	23.6	24.0	15.9	16.4	16.3	16.7	17.1
6H	22.7	23.1	23.1	23.5	23.9	16.9	17.3	17.3	17.7	18.1
8H	22.7	23.0	23.1	23.4	23.9	17.4	17.7	17.8	18.1	18.6
Variations with the observer position at spacings:										
S = 1.0H	+ 5.7 / - 7.7					+ 0.1 / - 0.2				
1.5H	+ 8.4 / - 7.6					+ 0.7 / - 0.3				
2.0H	+ 0.8 / - 0.3					+ 1.2 / - 0.9				

CIE Pub.117 Corrected 7444 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.0)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-08

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:

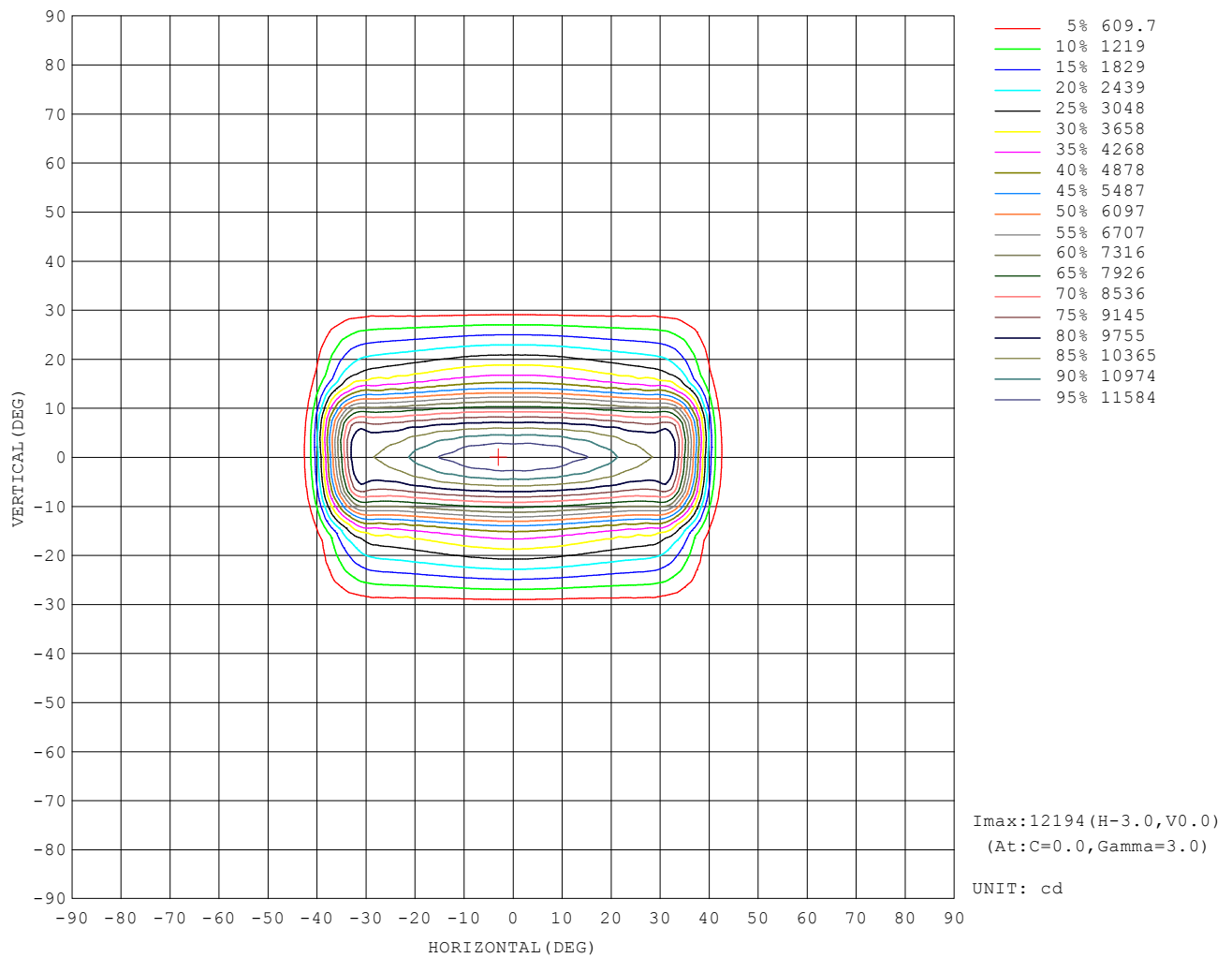
### UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	76	86	80	76	85	80	76	72
0.80	94	88	84	93	88	84	92	87	84	80
1.00	98	93	89	98	92	89	96	92	88	84
1.25	102	97	93	101	96	93	99	95	92	88
1.50	105	100	97	104	100	96	102	98	95	91
2.00	108	104	100	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	106	104	106	104	102	95
4.00	113	111	108	111	109	107	108	106	104	97
5.00	115	112	110	113	111	109	109	107	106	98
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: 2017-04-08

$\gamma$  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

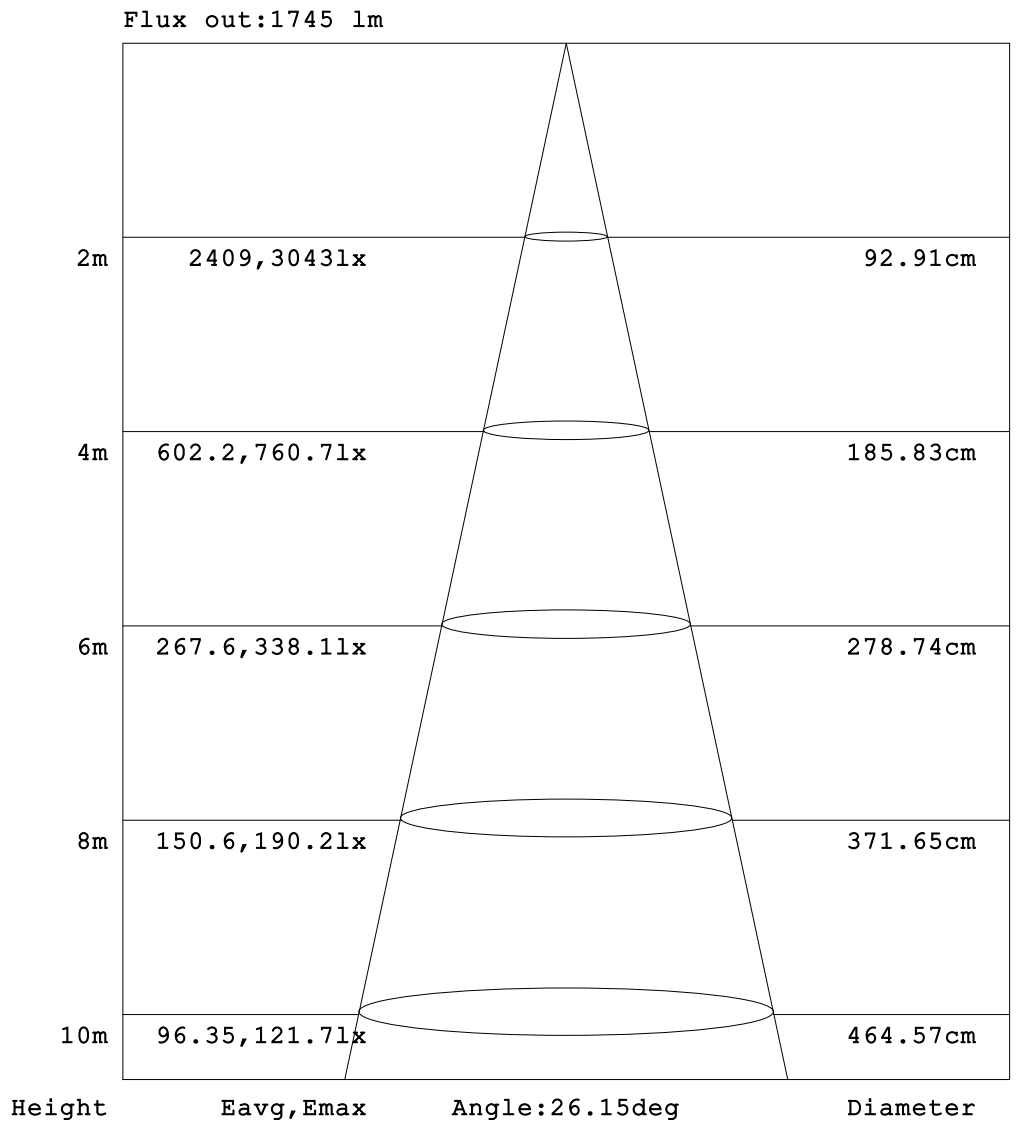


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-08

$\gamma$  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

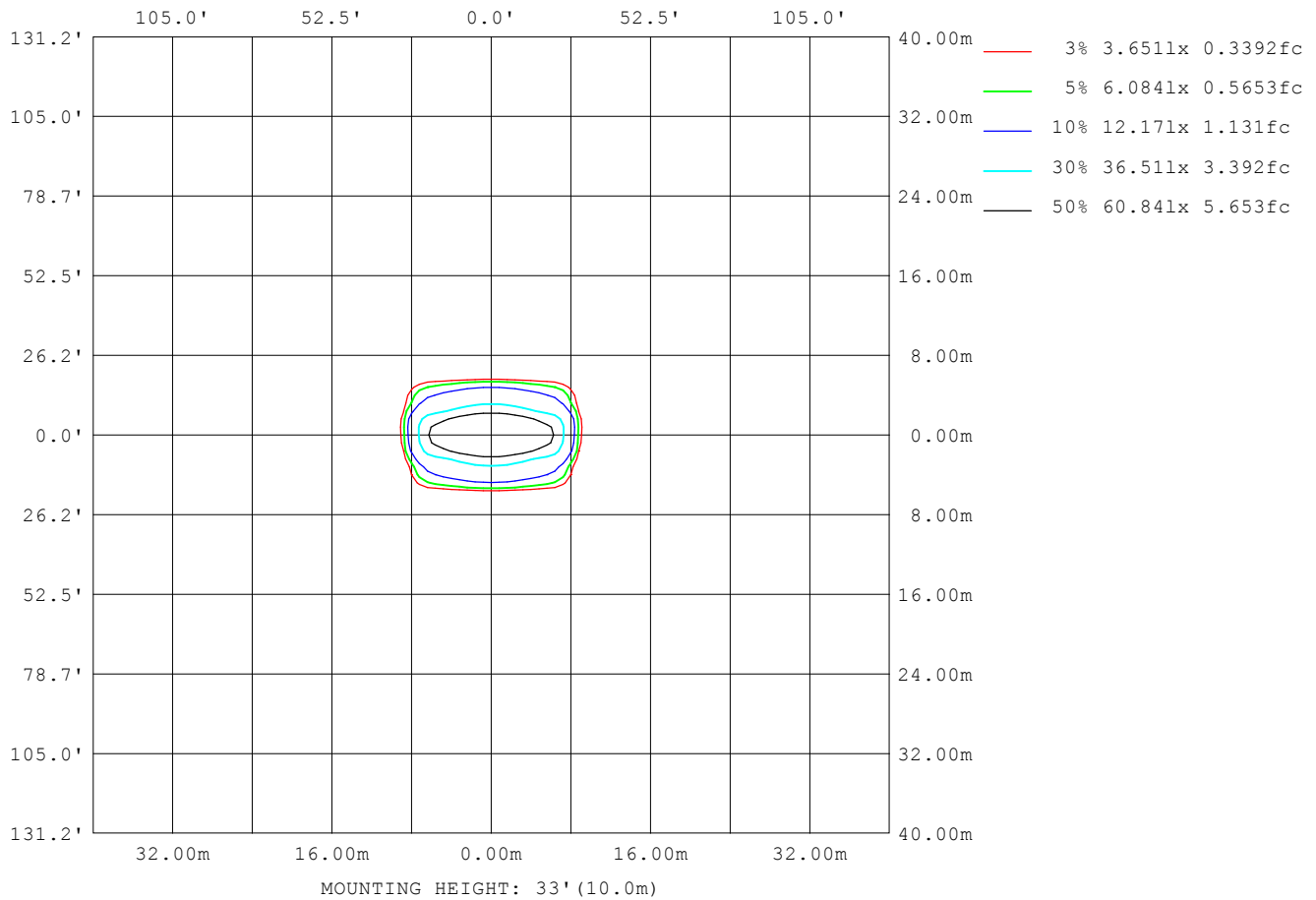


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2017-04-08

$\gamma$  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: 2017-04-08

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:230.0V I:0.2730A P:61.96W PF:0.9869 Lamp Flux:7444.36x1 lm		
NAME: LHB01-60	TYPE:60W	WEIGHT:
SPEC.:4000K Ra80 3070DEG L02801	DIM.: 0.486*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.466*0.1	Shielding Angle:

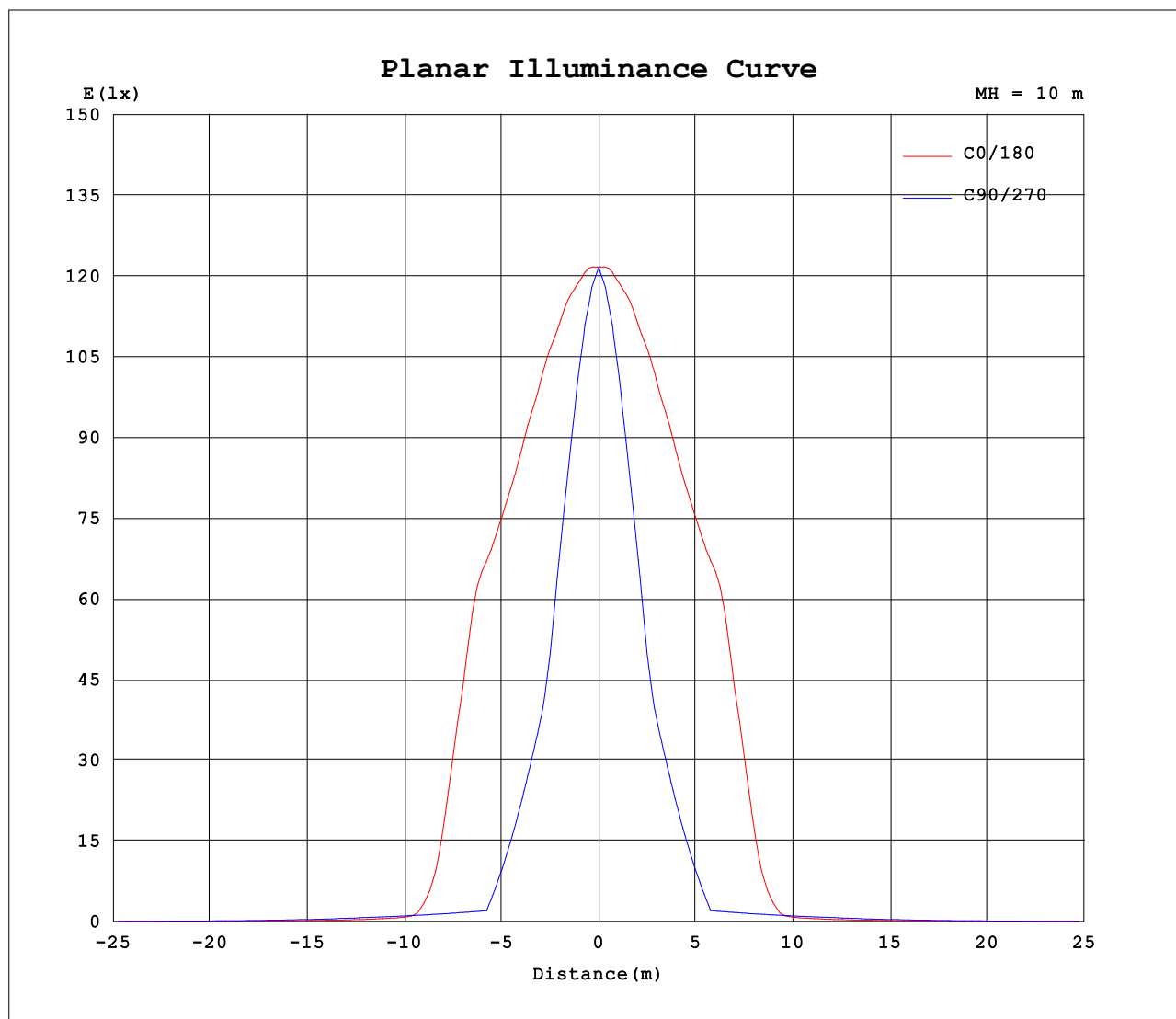
AvgL	cd/m2
L_0~180 (65) av	4675
L_0~180 (75) av	3870
L_0~180 (85) av	1123
L_90~270 (65) av	8401
L_90~270 (75) av	7452
L_90~270 (85) av	7834
L_45 (65) av	4991
L_45 (75) av	4266
L_45 (85) av	4579

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-08

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: 2017-04-08

$\gamma$  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:

```

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

```

γ Range: 0 - 90DEG
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Humidity:65.0%
Test Distance:9.500m [K=1.0000]
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