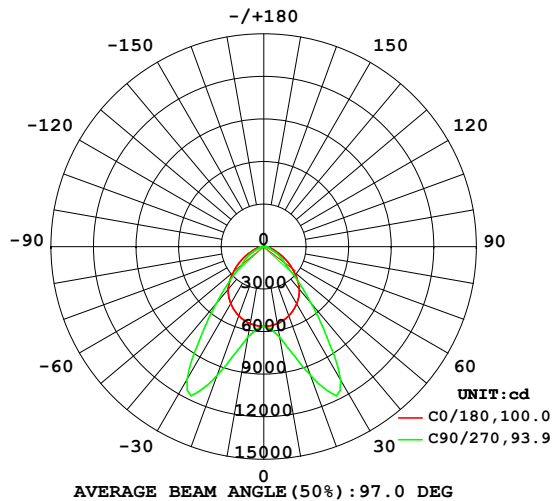


LUMINAIRE PHOTOMETRIC TEST REPORT

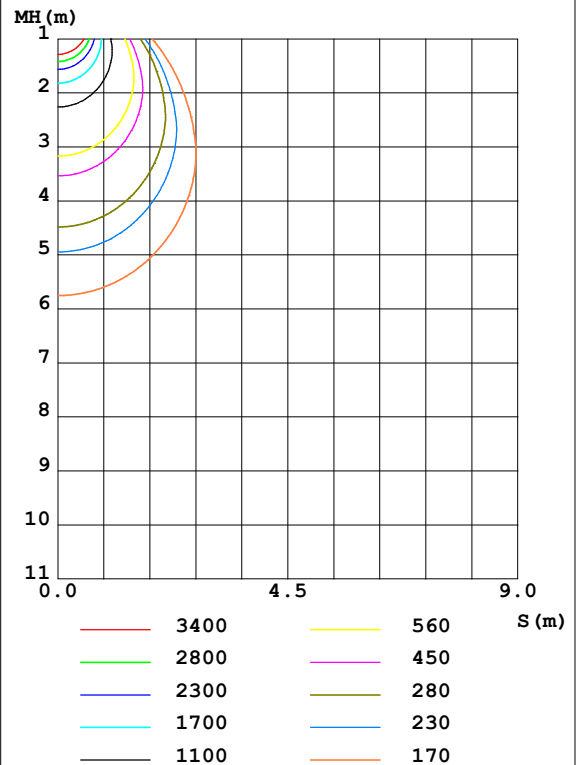
Test:U:230.0V I:0.6770A P:150.9W PF:0.9694 Lamp Flux:19823.7x1 lm		
NAME: LHB03-150	TYPE:150W	WEIGHT:
SPEC.:5000K Ra70 L00304	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 131.33 lm/W			
MODEL	LHB03-150	I _{max} (cd)	11704	S/MH (C0/180)	1.23
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH (C90/270)	1.36
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	19824	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	19823.7	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	0.80

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: 2017-08-05

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	559.7	575.2	586.7	575.2	559.7	575.1	586.7	575.1	0- 5	136.4	136.4	0.69,0.69
10	551.5	603.2	645.7	603.2	551.5	603.0	645.7	603.0	5- 10	421.1	557.5	2.81,2.81
15	537.8	649.4	778.6	649.4	537.8	649.1	778.6	649.1	10- 15	745.3	1303	6.57,6.57
20	518.6	727.2	966.3	727.2	518.6	726.5	966.3	726.5	15- 20	1147	2450	12.4,12.4
25	494.4	828.4	1143	828.4	494.4	828.6	1143	828.6	20- 25	1643	4093	20.6,20.6
30	465.4	930.4	1084	930.4	465.4	933.5	1084	933.5	25- 30	2154	6248	31.5,31.5
35	431.7	1001	778.3	1001	431.7	1012	778.3	1012	30- 35	2440	8688	43.8,43.8
40	391.6	973.1	513.5	973.1	391.6	984.4	513.5	984.4	35- 40	2419	11106	56,56
45	338.1	799.1	337.3	799.1	338.1	799.0	337.3	799.0	40- 45	2199	13305	67.1,67.1
50	281.2	537.3	203.6	537.3	281.2	523.9	203.6	523.9	45- 50	1848	15153	76.4,76.4
55	226.6	294.1	162.6	294.1	226.6	289.1	162.6	289.1	50- 55	1450	16604	83.8,83.8
60	173.1	158.0	121.6	158.0	173.1	158.0	121.6	158.0	55- 60	1111	17715	89.4,89.4
65	122.5	122.7	80.60	122.7	122.5	122.6	80.60	122.6	60- 65	821.5	18536	93.5,93.5
70	82.96	83.89	39.60	83.89	82.96	83.90	39.60	83.90	65- 70	570.4	19107	96.4,96.4
75	51.82	40.46	30.13	40.46	51.82	40.43	30.13	40.43	70- 75	359.4	19466	98.2,98.2
80	27.92	25.26	20.67	25.26	27.92	25.26	20.67	25.26	75- 80	207.3	19673	99.2,99.2
85	8.216	13.57	11.20	13.57	8.216	13.61	11.20	13.61	80- 85	111.0	19784	99.8,99.8
90	0.5983	1.607	1.734	1.607	0.5983	1.670	1.734	1.670	85- 90	39.27	19824	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): 13305 lm

%lum = 67.1%

%lamp = 67.1%

Conical surface Flux(120deg): 17715 lm

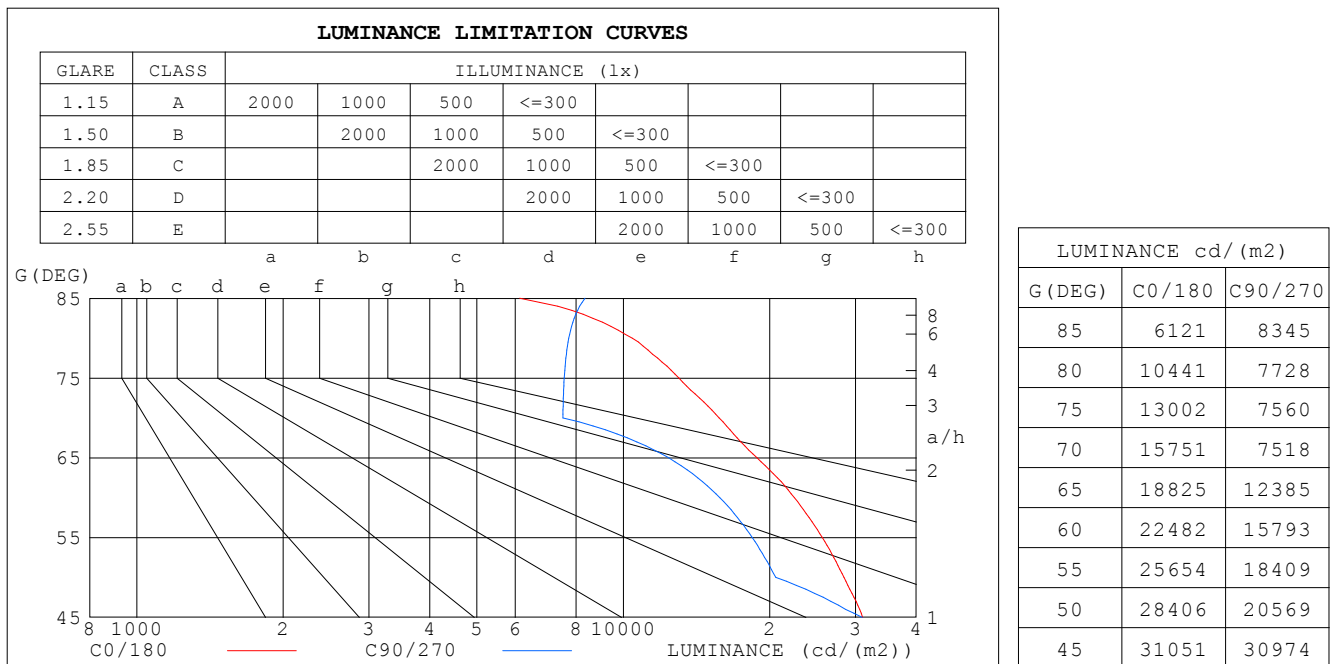
%lum = 89.4%

%lamp = 89.4%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-08-05

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

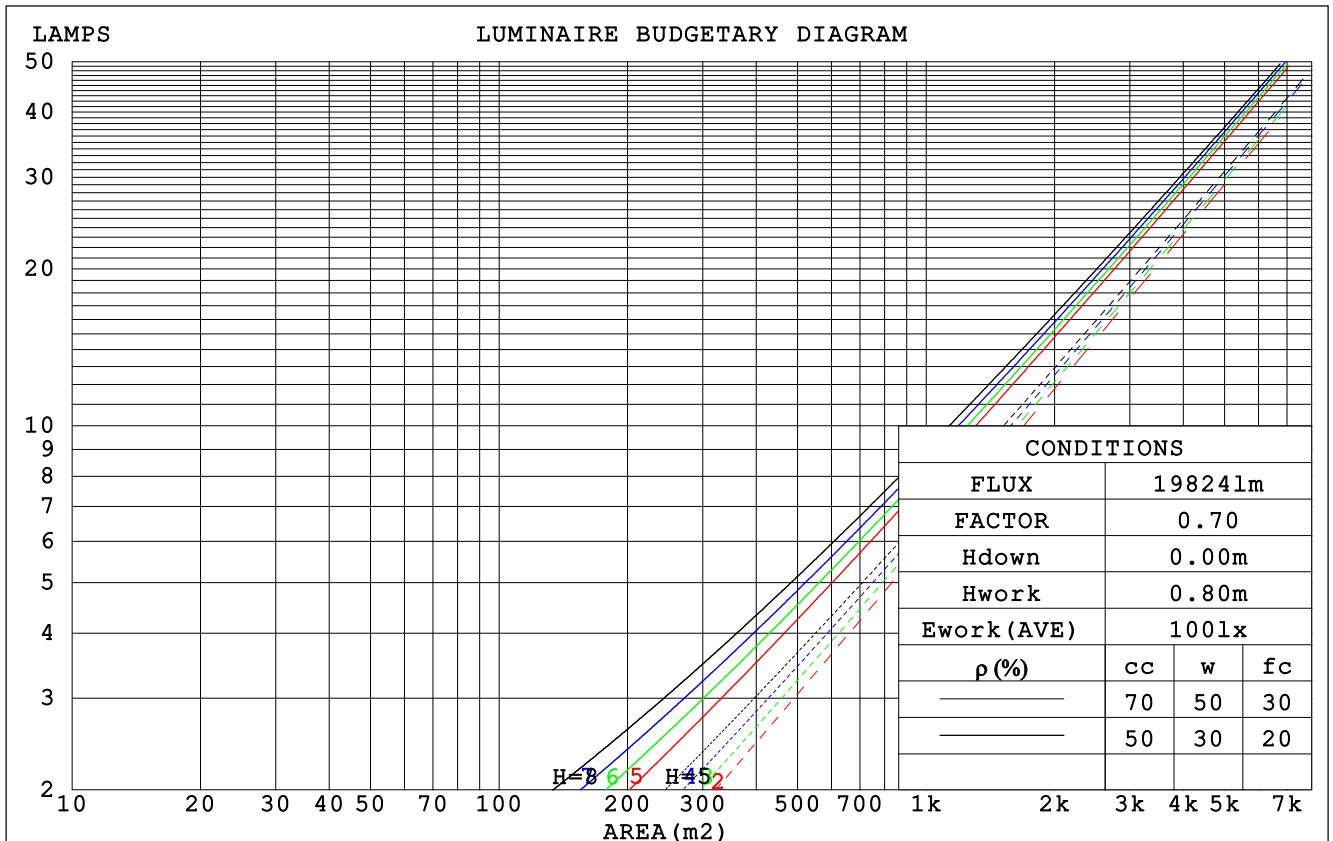


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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	1.06	1.03	.99	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.93	.91	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.84	.77	.71	.83	.76	.70	.80	.74	.69	.77	.72	.68	.75	.70	.67	.65
4.0	.75	.67	.61	.74	.67	.61	.72	.65	.60	.69	.64	.59	.67	.62	.58	.56
5.0	.68	.59	.53	.67	.59	.53	.65	.58	.52	.63	.57	.52	.61	.56	.51	.49
6.0	.61	.53	.47	.60	.52	.47	.59	.51	.46	.57	.51	.46	.55	.50	.45	.44
7.0	.56	.47	.41	.55	.47	.41	.53	.46	.41	.52	.45	.41	.51	.45	.40	.39
8.0	.51	.43	.37	.50	.42	.37	.49	.42	.37	.47	.41	.36	.46	.41	.36	.34
9.0	.46	.39	.33	.46	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.33	.31
10.0	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.30	.39	.34	.30	.28



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-08-05

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	.261	.149	.047	.254	.145	.046	.241	.139	.044	.229	.132	.042	.218	.127	.041	
2.0	.253	.138	.042	.247	.136	.042	.235	.131	.041	.225	.126	.039	.215	.122	.038	
3.0	.239	.127	.038	.234	.125	.038	.224	.121	.037	.215	.118	.036	.206	.114	.035	
4.0	.225	.117	.034	.220	.115	.034	.211	.112	.033	.203	.109	.033	.196	.106	.032	
5.0	.211	.108	.031	.207	.106	.031	.199	.104	.031	.192	.101	.030	.185	.099	.030	
6.0	.198	.099	.028	.195	.098	.028	.188	.096	.028	.181	.094	.028	.175	.092	.027	
7.0	.187	.092	.026	.183	.091	.026	.177	.090	.026	.171	.088	.026	.166	.086	.025	
8.0	.176	.086	.024	.173	.085	.024	.167	.084	.024	.162	.082	.024	.157	.081	.024	
9.0	.166	.080	.022	.164	.080	.022	.159	.078	.022	.154	.077	.022	.149	.076	.022	
10.0	.157	.075	.021	.155	.075	.021	.150	.074	.021	.146	.073	.021	.142	.071	.020	

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	.177	.157	.138	.151	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.057	.046	.036	.018	.015	.012	
3.0	.159	.114	.079	.136	.098	.068	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.151	.100	.062	.129	.087	.054	.089	.060	.038	.051	.035	.022	.017	.012	.007	
5.0	.144	.090	.050	.123	.078	.044	.085	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.137	.081	.041	.118	.070	.036	.081	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.074	.035	.113	.064	.030	.078	.045	.022	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.108	.060	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.103	.055	.023	.071	.039	.016	.042	.023	.010	.013	.008	.003	
10.0	.114	.060	.023	.098	.052	.020	.068	.036	.014	.040	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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	26.2	27.6	26.4	27.8	28.0	23.4	24.8	23.6	25.0	25.2
3H	26.7	28.0	27.0	28.2	28.4	23.5	24.8	23.8	25.0	25.2
4H	26.8	28.0	27.1	28.2	28.5	23.5	24.7	23.8	25.0	25.2
6H	26.8	27.9	27.1	28.2	28.5	23.5	24.7	23.9	24.9	25.2
8H	26.8	27.9	27.1	28.2	28.4	23.5	24.6	23.9	24.9	25.2
12H	26.7	27.8	27.1	28.1	28.4	23.5	24.6	23.9	24.9	25.2
4H 2H	26.2	27.5	26.6	27.7	27.9	24.0	25.2	24.3	25.4	25.7
3H	27.1	28.2	27.5	28.5	28.7	24.1	25.2	24.5	25.5	25.8
4H	27.4	28.3	27.7	28.6	29.0	24.2	25.1	24.6	25.5	25.8
6H	27.5	28.3	27.9	28.7	29.0	24.3	25.1	24.7	25.4	25.8
8H	27.5	28.3	27.9	28.6	29.0	24.3	25.1	24.7	25.4	25.8
12H	27.5	28.2	27.9	28.5	29.0	24.3	25.0	24.8	25.4	25.8
8H 4H	27.3	28.1	27.7	28.5	28.9	24.4	25.2	24.8	25.5	25.9
6H	27.6	28.2	28.0	28.6	29.0	24.5	25.2	25.0	25.6	26.0
8H	27.6	28.2	28.1	28.6	29.0	24.6	25.2	25.0	25.6	26.0
12H	27.6	28.1	28.1	28.6	29.0	24.7	25.1	25.1	25.6	26.1
12H 4H	27.3	28.0	27.7	28.4	28.8	24.4	25.1	24.8	25.5	25.9
6H	27.5	28.1	28.0	28.5	29.0	24.6	25.1	25.0	25.5	26.0
8H	27.6	28.1	28.1	28.5	29.0	24.6	25.1	25.1	25.6	26.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.0 / - 0.7					+ 1.4 / - 2.2				
1.5H	+ 1.8 / - 1.9					+ 2.0 / - 2.1				
2.0H	+ 1.2 / - 2.6					+ 1.4 / - 1.1				

CIE Pub.117 Corrected 19824 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.4)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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:

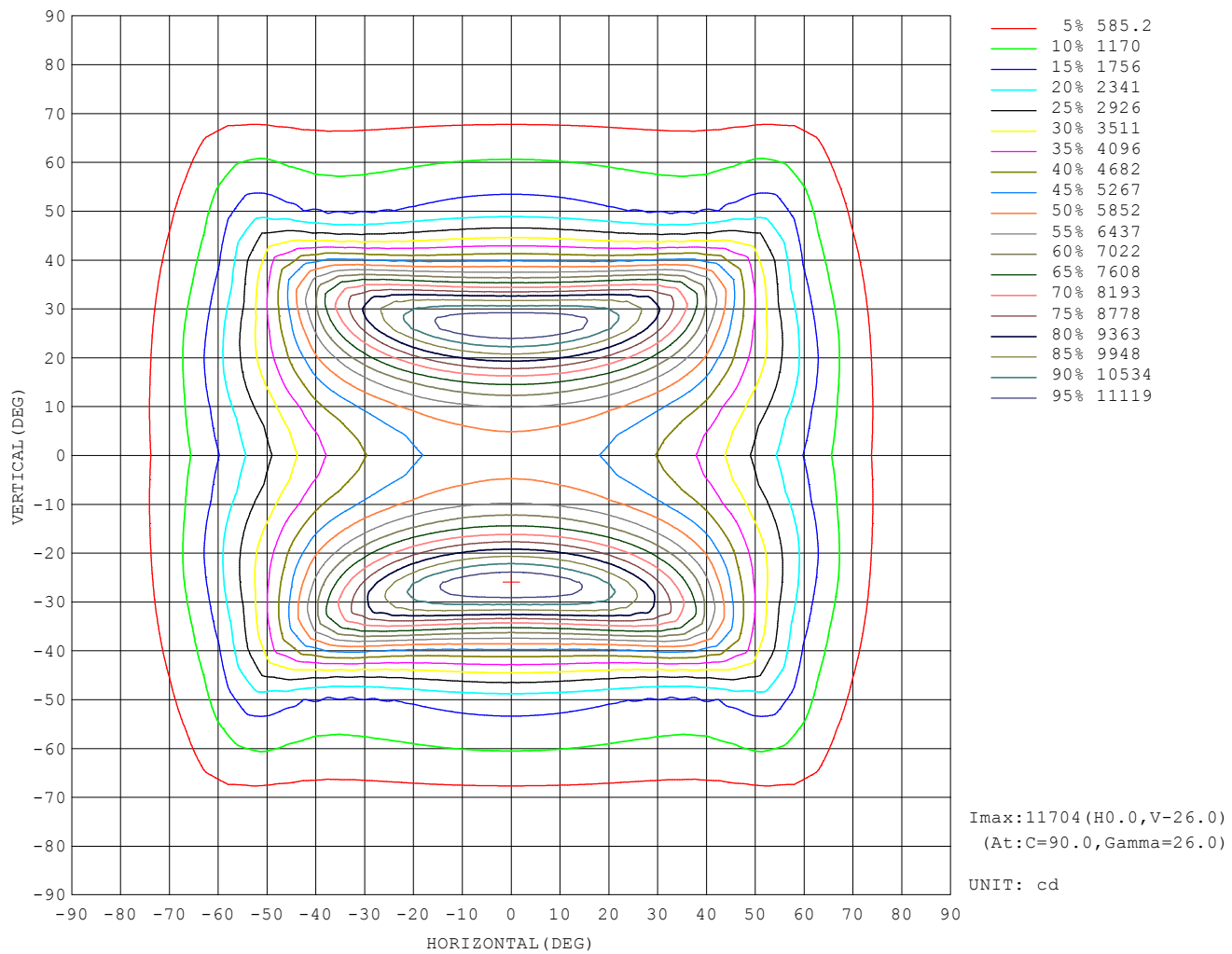
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	64	53	47	63	53	47	62	53	47	41
0.80	74	64	57	73	63	57	72	63	57	51
1.00	82	73	67	81	72	66	79	73	66	60
1.25	89	80	74	88	80	74	85	78	73	67
1.50	94	85	80	92	85	79	89	83	78	71
2.00	100	93	87	98	91	86	95	89	85	78
2.50	103	96	91	101	95	90	97	92	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	100	107	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
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: 2017-08-05

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:

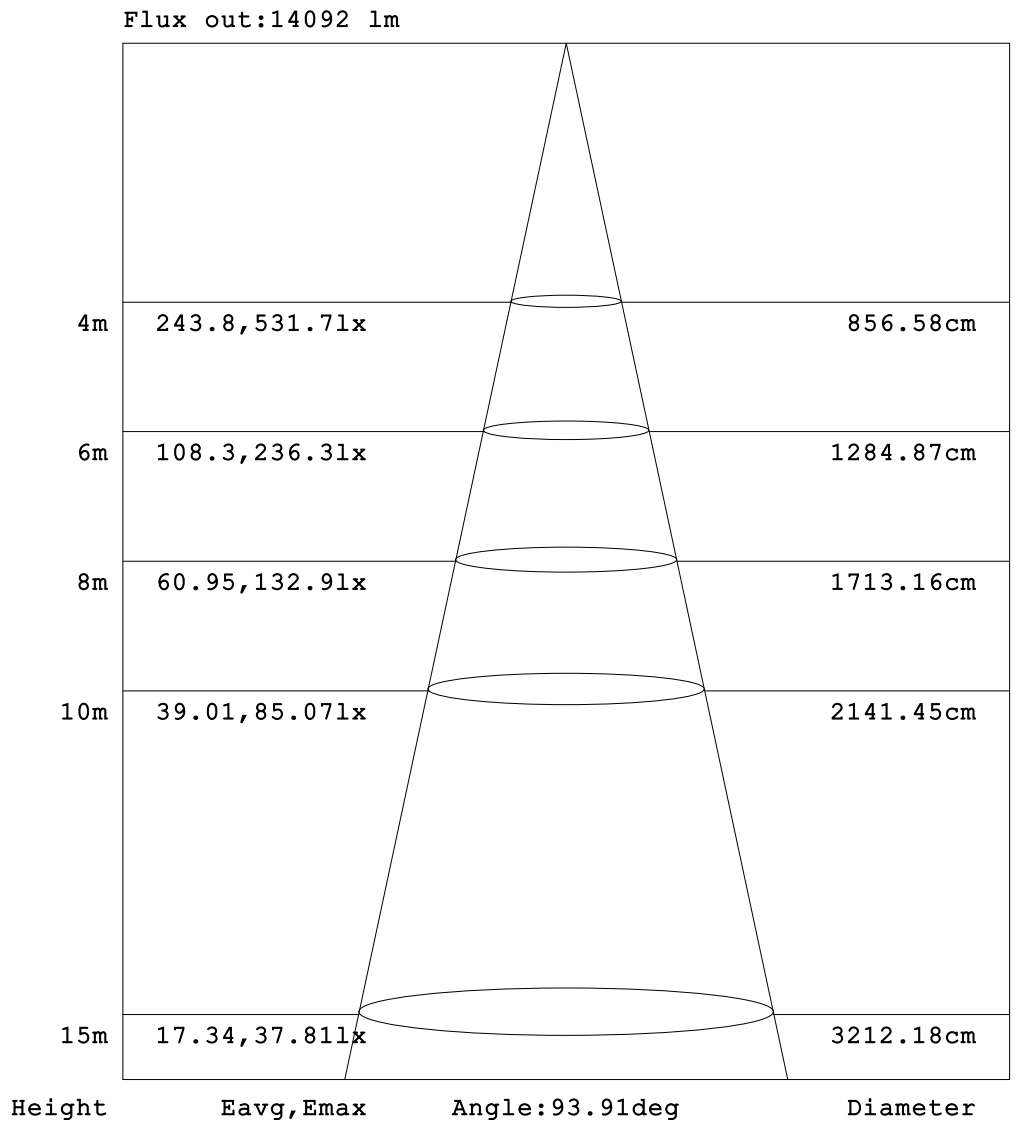
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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

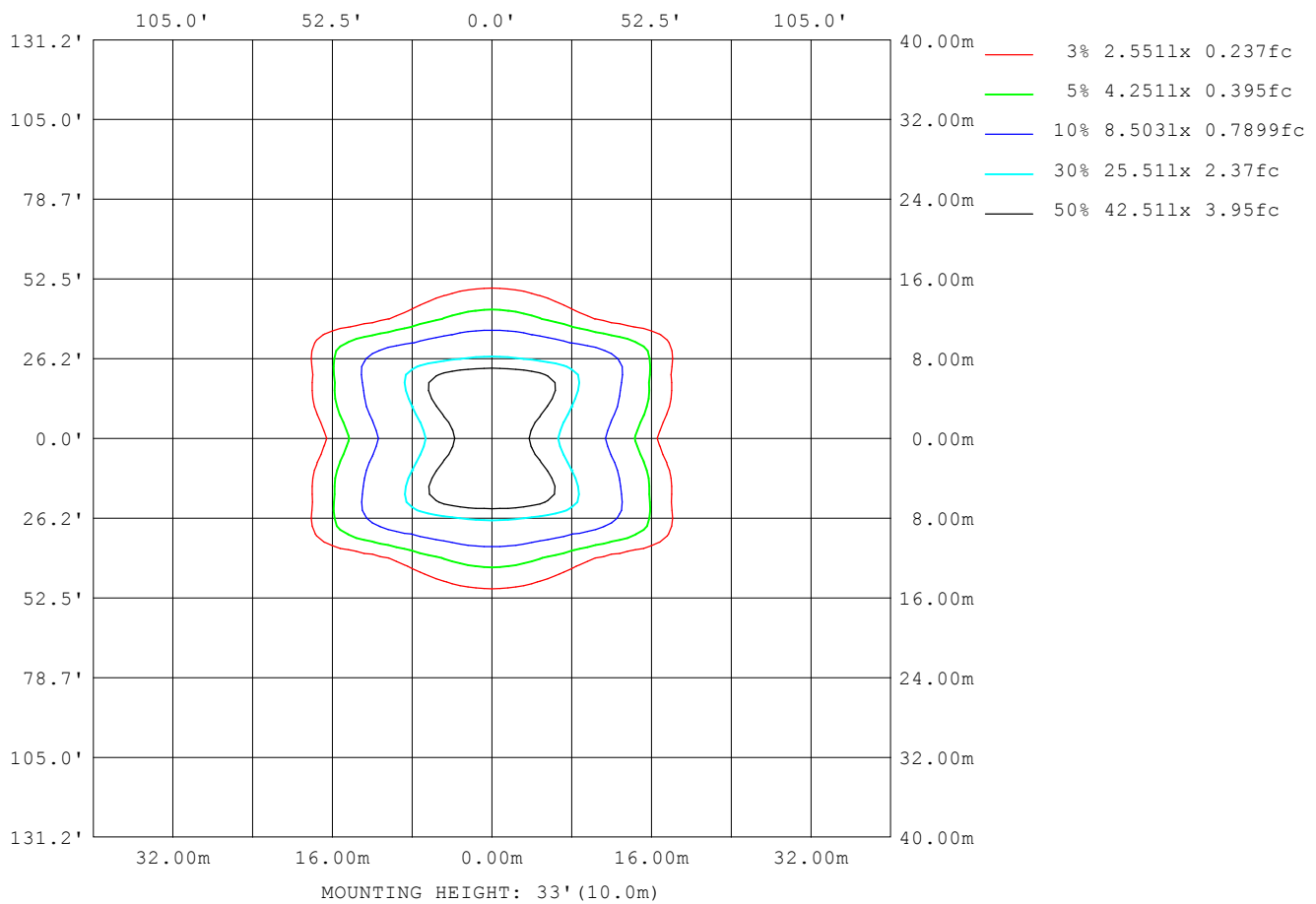


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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:

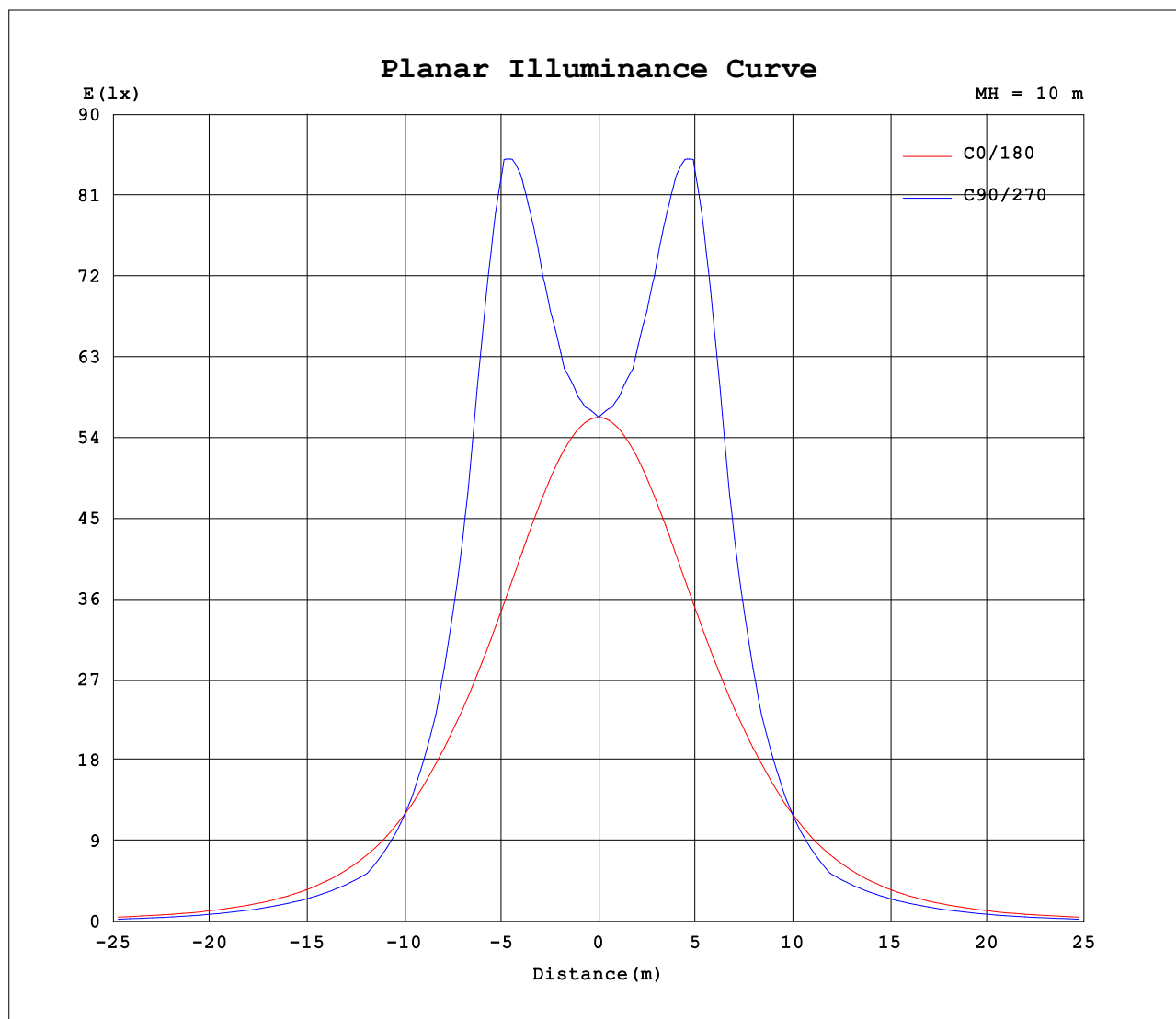
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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: 2017-08-05

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:

```

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:

```