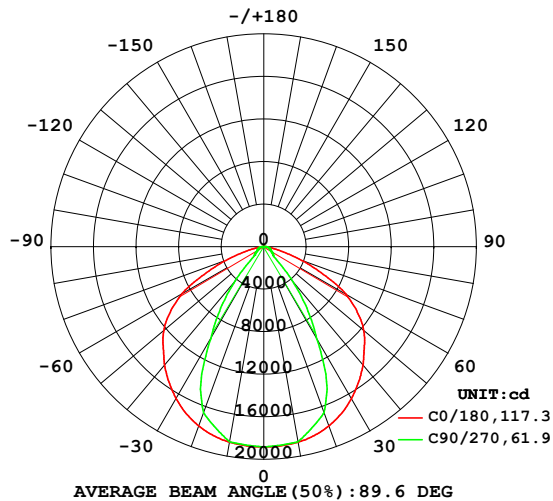


LUMINAIRE PHOTOMETRIC TEST REPORT

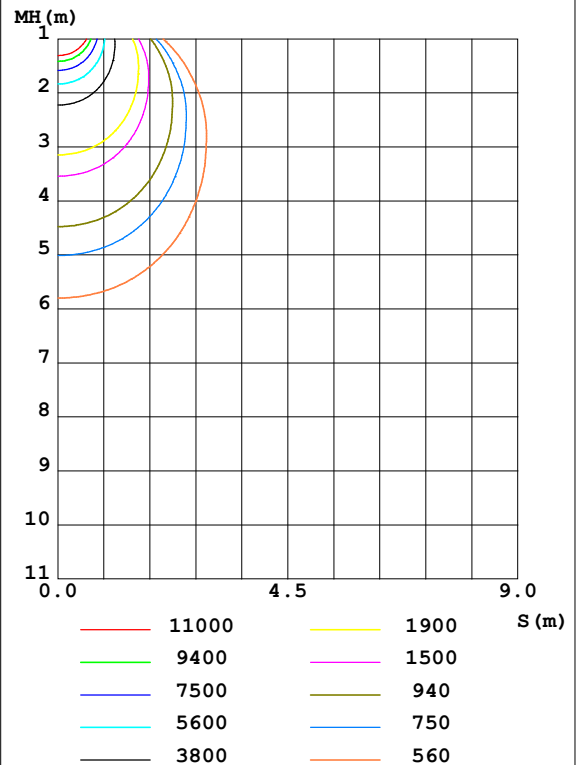
Test:U:230.0V I:1.040A P:234.0W PF:0.9778 Lamp Flux:31250.9x1 lm		
NAME: LHB03-240	TYPE:240W	WEIGHT:
SPEC.:5000K Ra70 60*120DEG L00302	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.55 lm/W			
MODEL	LHB03-240	I _{max} (cd)	18833	S/MH (C0/180)	1.30
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH (C90/270)	0.93
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	31251	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	31250.9	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:2017-03-02

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:

Checker:

Assessor:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1879	1874	1873	1874	1879	1874	1873	1874	0- 5	448.9	448.9	1.44,1.44
10	1866	1860	1863	1860	1866	1861	1863	1861	5- 10	1336	1785	5.71,5.71
15	1838	1826	1762	1826	1838	1829	1762	1829	10- 15	2180	3965	12.7,12.7
20	1793	1726	1661	1726	1793	1730	1661	1730	15- 20	2917	6882	22,22
25	1730	1607	1401	1607	1730	1612	1401	1612	20- 25	3491	10373	33.2,33.2
30	1650	1398	997.0	1398	1650	1403	997.0	1403	25- 30	3743	14116	45.2,45.2
35	1555	1076	708.3	1076	1555	1074	708.3	1074	30- 35	3620	17736	56.8,56.8
40	1452	712.7	419.6	712.7	1452	703.0	419.6	703.0	35- 40	3265	21001	67.2,67.2
45	1338	520.7	157.8	520.7	1338	512.4	157.8	512.4	40- 45	2719	23720	75.9,75.9
50	1228	355.0	111.2	355.0	1228	350.4	111.2	350.4	45- 50	2135	25855	82.7,82.7
55	1075	220.7	91.37	220.7	1075	220.4	91.37	220.4	50- 55	1692	27548	88.2,88.2
60	889.1	163.0	71.59	163.0	889.1	163.0	71.59	163.0	55- 60	1284	28832	92.3,92.3
65	619.6	118.2	64.35	118.2	619.6	117.8	64.35	117.8	60- 65	928.7	29760	95.2,95.2
70	378.8	84.96	57.12	84.96	378.8	84.59	57.12	84.59	65- 70	646.3	30407	97.3,97.3
75	178.7	55.29	49.00	55.29	178.7	55.25	49.00	55.25	70- 75	430.5	30837	98.7,98.7
80	58.65	25.77	33.72	25.77	58.65	25.87	33.72	25.87	75- 80	252.0	31089	99.5,99.5
85	12.36	14.01	17.55	14.01	12.36	14.12	17.55	14.12	80- 85	120.7	31210	99.9,99.9
90	1.023	1.918	1.382	1.918	1.023	2.026	1.382	2.026	85- 90	40.89	31251	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): 23720 lm

%lum = 75.9%

%lamp = 75.9%

Conical surface Flux(120deg): 28832 lm

%lum = 92.3%

%lamp = 92.3%

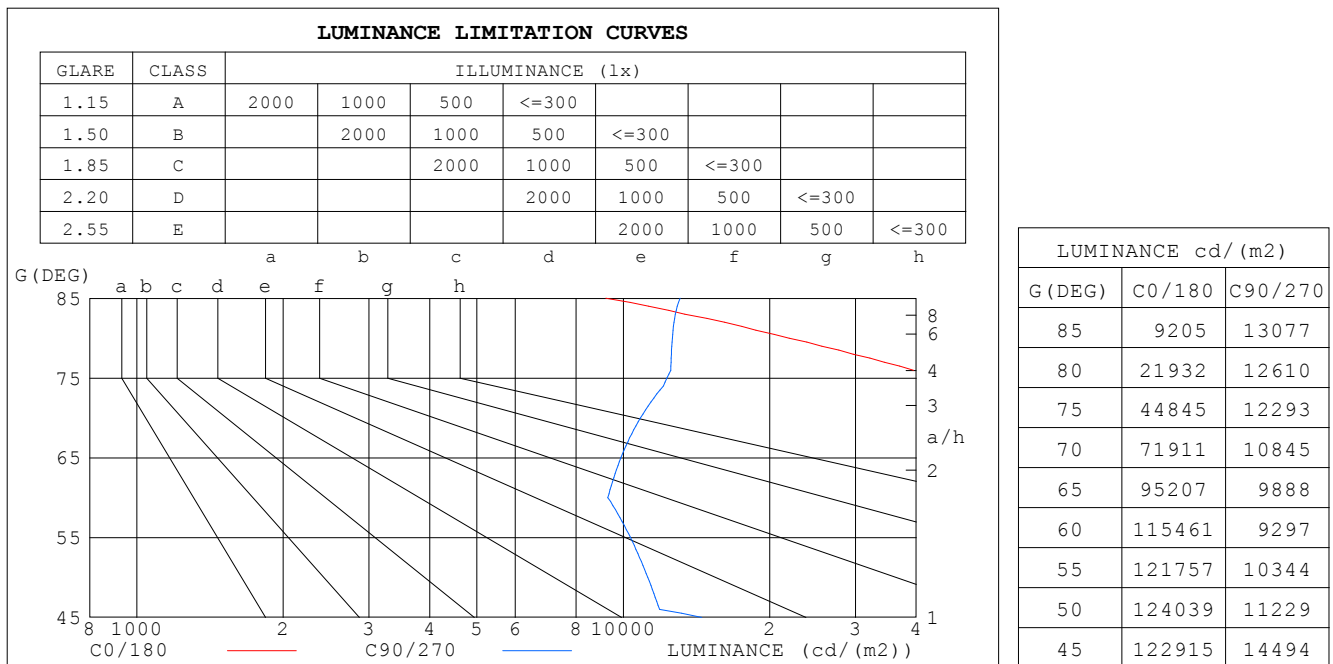
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-02

Checker:

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:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

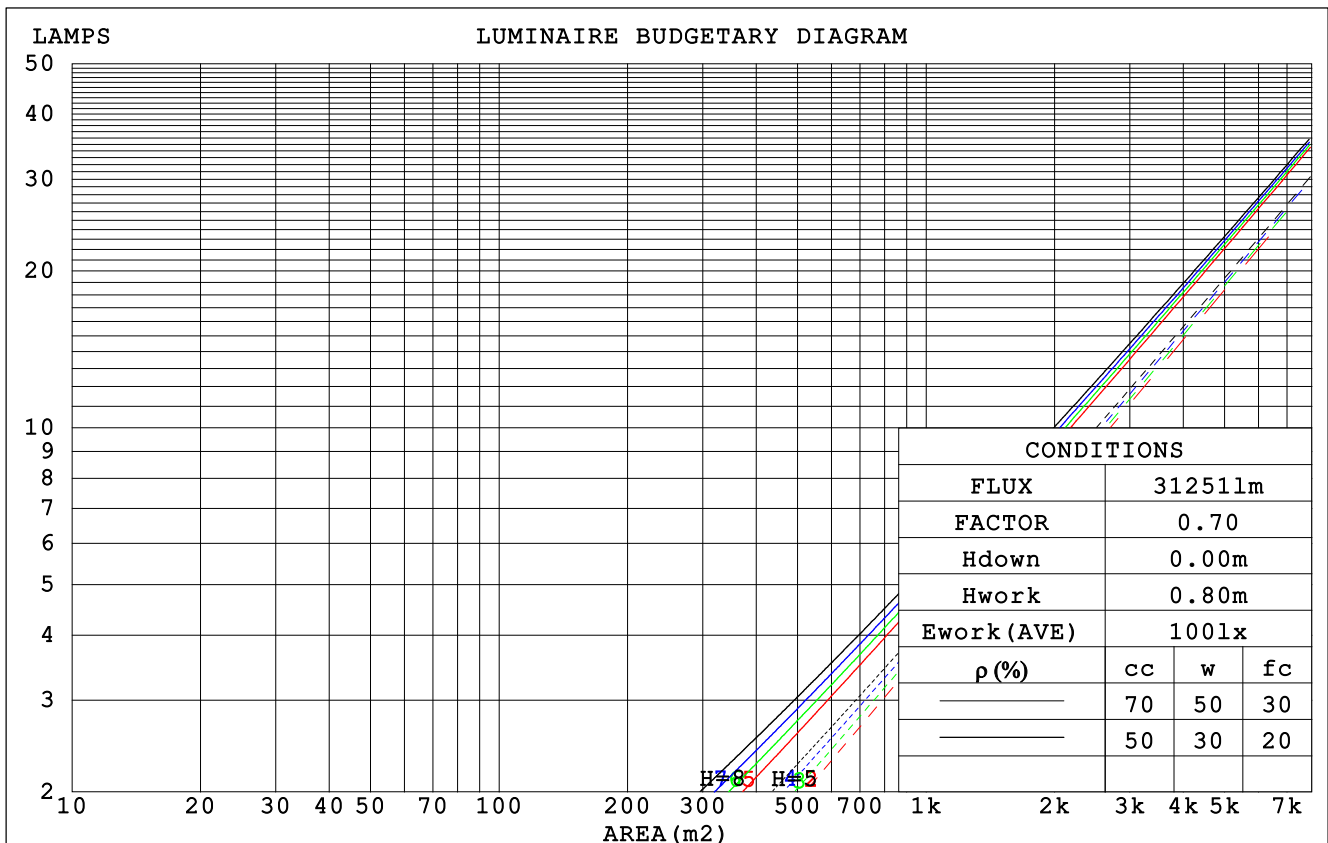
Checker:

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:

Assessor:

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	.00
1.0	1.08	1.04	1.02	1.06	1.03	.00	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.91	.86	.92	.88	.84	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.87	.80	.76	.84	.79	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.76	.71	.66	.74	.69	.65	.72	.68	.64	.63
5.0	.73	.66	.60	.72	.65	.60	.70	.64	.59	.68	.63	.59	.66	.62	.58	.56
6.0	.67	.59	.54	.66	.59	.54	.64	.58	.53	.63	.57	.53	.61	.56	.53	.51
7.0	.62	.54	.49	.61	.54	.49	.60	.53	.48	.58	.52	.48	.57	.52	.48	.46
8.0	.57	.50	.45	.56	.49	.45	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.52	.46	.41	.51	.45	.41	.50	.45	.40	.49	.44	.40	.39
10.0	.49	.42	.38	.49	.42	.38	.48	.42	.38	.47	.41	.37	.46	.41	.37	.36



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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:

Checker:

Assessor:

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	.235	.134	.042	.228	.130	.041	.215	.124	.039	.204	.117	.038	.193	.112	.036	
2.0	.227	.124	.038	.221	.122	.037	.210	.117	.036	.199	.112	.035	.190	.107	.034	
3.0	.215	.114	.034	.210	.112	.034	.200	.108	.033	.191	.105	.032	.183	.101	.031	
4.0	.202	.105	.031	.198	.104	.031	.189	.100	.030	.181	.097	.029	.174	.095	.029	
5.0	.191	.097	.028	.187	.096	.028	.179	.093	.027	.172	.091	.027	.166	.088	.027	
6.0	.180	.090	.026	.176	.089	.026	.170	.087	.025	.163	.085	.025	.157	.083	.025	
7.0	.170	.084	.024	.167	.083	.024	.161	.081	.023	.155	.079	.023	.150	.078	.023	
8.0	.160	.078	.022	.158	.078	.022	.152	.076	.022	.147	.075	.022	.143	.073	.021	
9.0	.152	.074	.021	.150	.073	.020	.145	.072	.020	.140	.070	.020	.136	.069	.020	
10.0	.144	.069	.019	.142	.069	.019	.138	.068	.019	.134	.066	.019	.130	.065	.019	

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	.175	.157	.140	.150	.135	.121	.103	.093	.083	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.092	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.145	.100	.065	.125	.086	.057	.086	.060	.040	.050	.035	.024	.016	.011	.008	
5.0	.138	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006	
6.0	.131	.080	.044	.112	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.124	.073	.037	.107	.063	.032	.074	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.119	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.113	.062	.028	.097	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.108	.058	.025	.093	.050	.021	.065	.035	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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:

Checker:

Assessor:

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	28.4	29.6	28.6	29.8	30.0	19.6	20.8	19.8	21.0	21.2
3H	29.3	30.4	29.6	30.6	30.9	20.0	21.1	20.2	21.3	21.6
4H	29.5	30.6	29.8	30.8	31.0	20.3	21.4	20.6	21.6	21.9
6H	29.5	30.5	29.8	30.8	31.1	20.7	21.7	21.0	22.0	22.2
8H	29.5	30.5	29.8	30.8	31.0	20.9	21.8	21.2	22.1	22.4
12H	29.5	30.4	29.8	30.7	31.0	21.0	21.9	21.3	22.2	22.5
4H 2H	28.2	29.2	28.5	29.5	29.7	20.2	21.3	20.5	21.5	21.8
3H	29.1	30.0	29.4	30.3	30.6	20.7	21.6	21.0	21.9	22.2
4H	29.3	30.2	29.7	30.5	30.8	21.1	21.9	21.4	22.2	22.5
6H	29.4	30.2	29.8	30.5	30.9	21.5	22.3	21.9	22.6	23.0
8H	29.4	30.1	29.8	30.5	30.8	21.7	22.4	22.1	22.8	23.2
12H	29.4	30.0	29.8	30.4	30.8	21.9	22.6	22.3	22.9	23.3
8H 4H	29.2	29.9	29.6	30.3	30.6	21.3	22.0	21.7	22.4	22.7
6H	29.3	29.9	29.8	30.3	30.7	21.8	22.4	22.3	22.8	23.2
8H	29.3	29.8	29.8	30.3	30.7	22.1	22.6	22.6	23.0	23.5
12H	29.3	29.7	29.8	30.2	30.7	22.4	22.8	22.9	23.3	23.7
12H 4H	29.2	29.8	29.6	30.2	30.6	21.3	22.0	21.7	22.3	22.7
6H	29.3	29.8	29.7	30.2	30.7	21.9	22.4	22.3	22.8	23.2
8H	29.3	29.7	29.8	30.2	30.6	22.2	22.6	22.7	23.1	23.5
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 2.0					+ 1.0 / - 1.4				
1.5H	+ 2.3 / - 3.8					+ 1.4 / - 1.3				
2.0H	+ 3.5 / - 6.0					+ 1.2 / - 1.0				

CIE Pub.117 Corrected 31251 lm Total Lamp Luminous Flux.(8log(F/F0) = 12.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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:

Checker:

Assessor:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	56	70	61	56	69	61	56	51
0.80	80	71	66	79	71	66	78	70	65	60
1.00	87	79	74	86	79	73	85	79	73	67
1.25	93	86	80	92	85	80	90	84	79	73
1.50	97	90	85	96	89	85	93	88	83	78
2.00	102	96	91	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	107	102	98	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	99	91
5.00	112	108	106	110	107	104	105	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

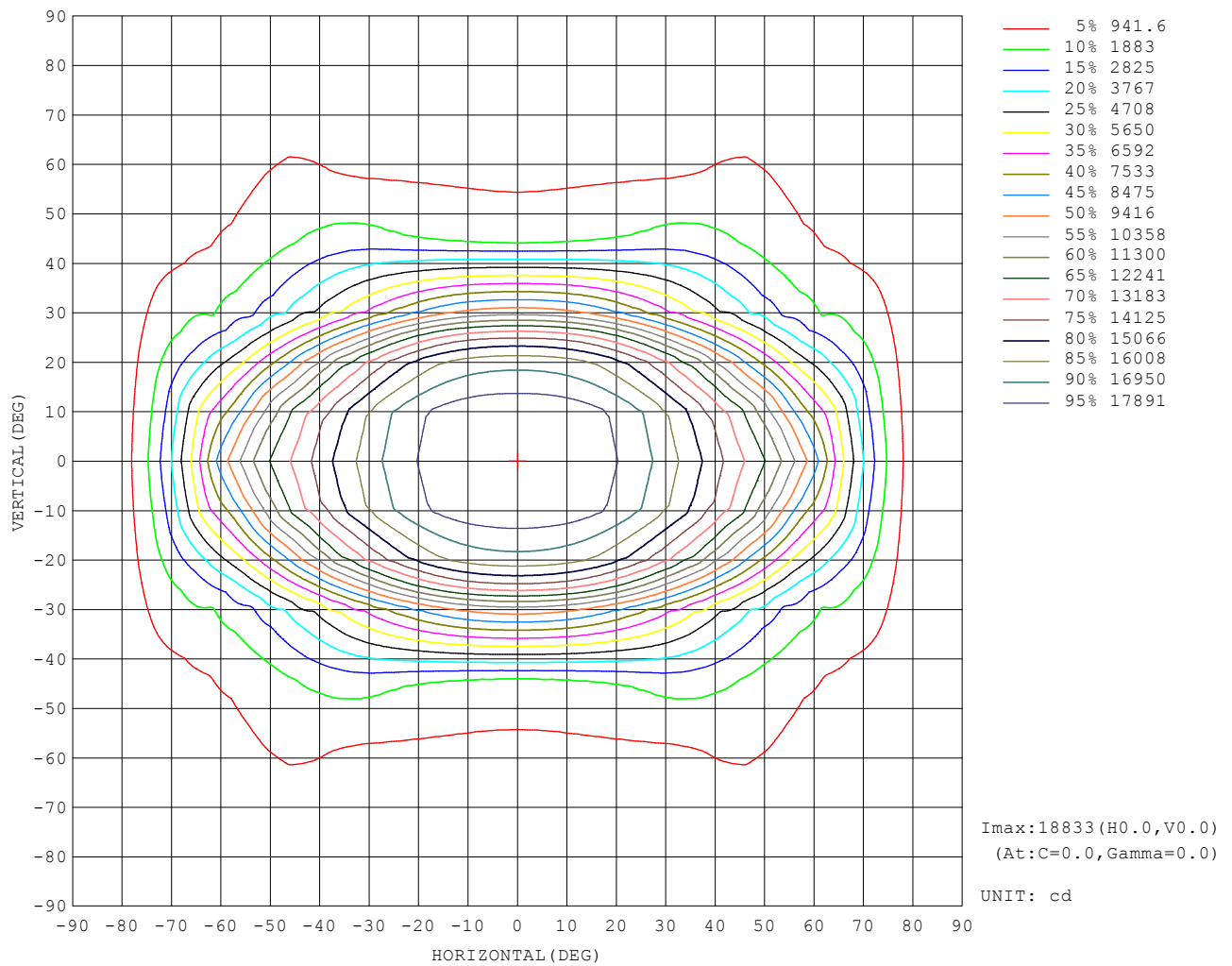
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

Checker:

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:

Assessor:

ISOCANDELA DIAGRAM



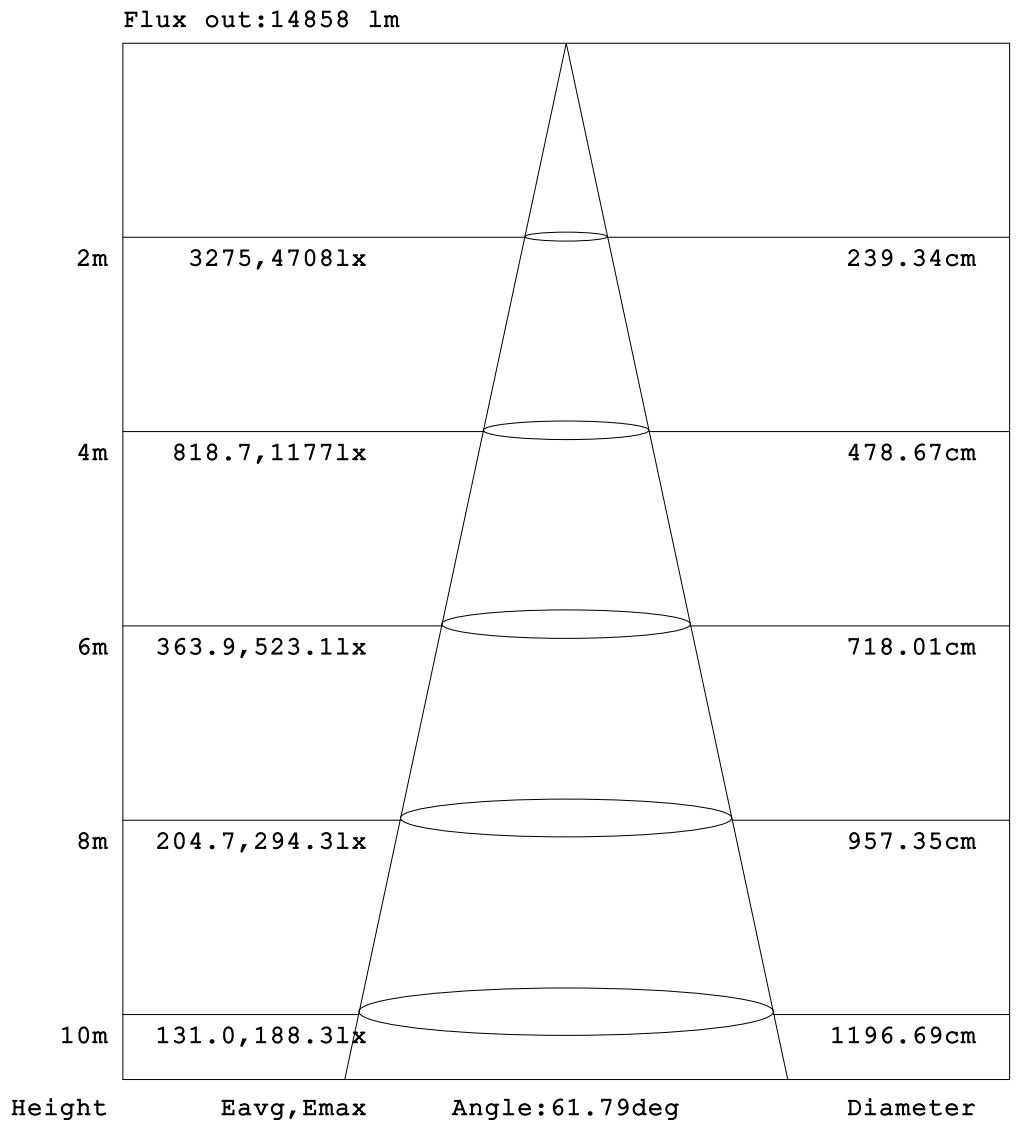
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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:

Checker:

Assessor:

AAI Figure



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

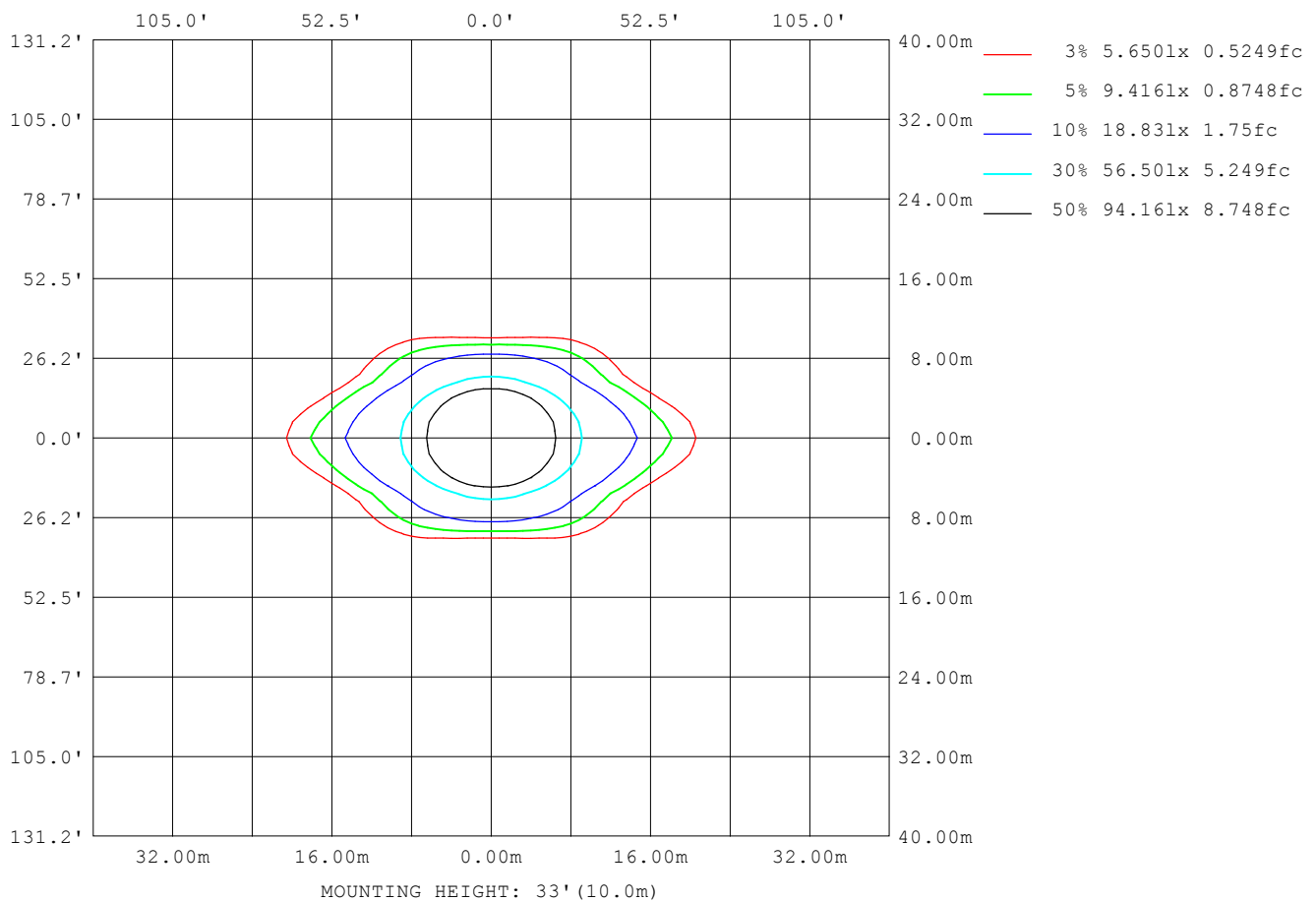
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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:

Checker:

Assessor:

ISOLUX DIAGRAM



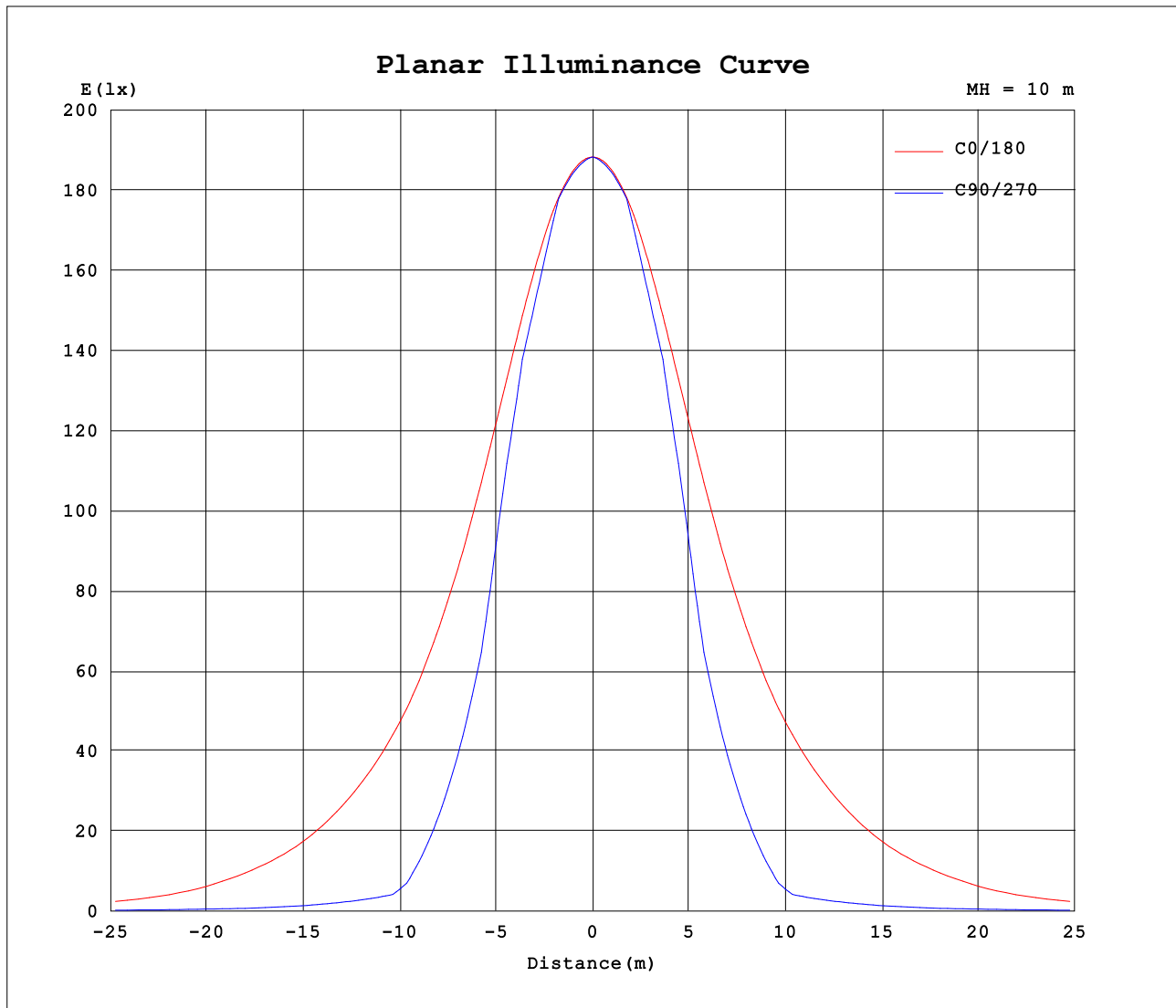
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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:

Checker:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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:

Checker:

Assessor:

Assessor:

Assessor:

Assessor:

Assessor: