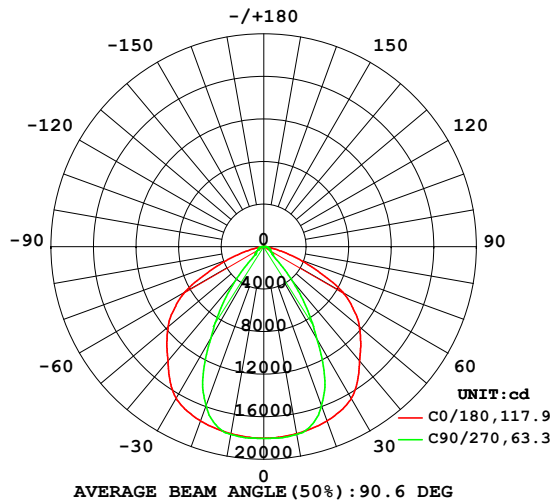


LUMINAIRE PHOTOMETRIC TEST REPORT

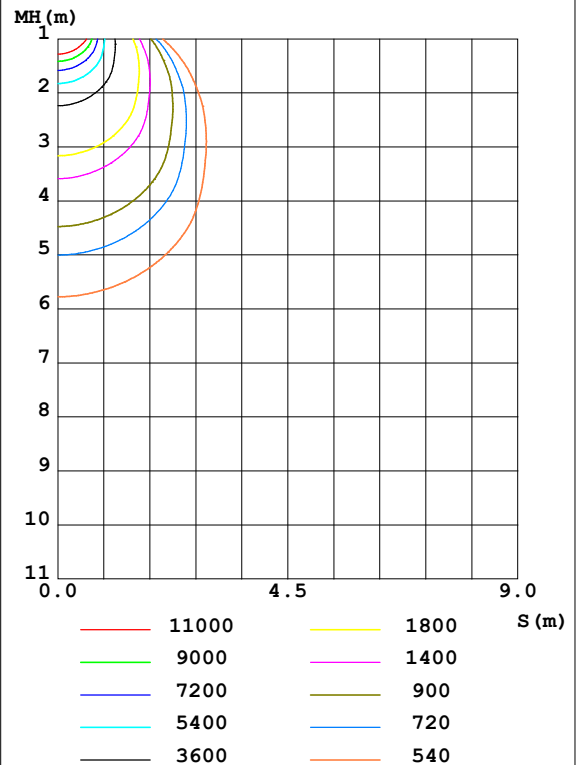
Test:U:229.9V I:1.054A P:236.8W PF:0.9772 Lamp Flux:30578.4x1 lm		
NAME: LHB03-240	TYPE:240W	WEIGHT:
SPEC.:5000K Ra80 60120DEG L00302	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 129.15 lm/W			
MODEL	LHB03-240	Imax(cd)	18052	S/MH(C0/180)	1.34
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH(C90/270)	0.94
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	30578	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	30578.4	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:2017-07-03

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1796	1801	1805	1801	1796	1801	1805	1801	0- 5	430.7	430.7	1.41,1.41
10	1785	1792	1792	1792	1785	1793	1792	1793	5- 10	1285	1716	5.61,5.61
15	1768	1770	1737	1770	1768	1771	1737	1771	10- 15	2110	3826	12.5,12.5
20	1743	1712	1591	1712	1743	1712	1591	1712	15- 20	2850	6676	21.8,21.8
25	1706	1593	1355	1593	1706	1591	1355	1591	20- 25	3418	10094	33,33
30	1648	1390	996.3	1390	1648	1388	996.3	1388	25- 30	3710	13804	45.1,45.1
35	1538	1061	705.4	1061	1538	1065	705.4	1065	30- 35	3632	17436	57,57
40	1403	707.4	414.6	707.4	1403	715.2	414.6	715.2	35- 40	3258	20694	67.7,67.7
45	1290	508.3	150.8	508.3	1290	515.5	150.8	515.5	40- 45	2675	23369	76.4,76.4
50	1175	341.9	104.0	341.9	1175	346.1	104.0	346.1	45- 50	2077	25446	83.2,83.2
55	1031	211.3	84.31	211.3	1031	212.2	84.31	212.2	50- 55	1633	27079	88.6,88.6
60	859.4	154.0	64.63	154.0	859.4	154.2	64.63	154.2	55- 60	1230	28309	92.6,92.6
65	586.6	110.6	57.83	110.6	586.6	110.5	57.83	110.5	60- 65	874.8	29184	95.4,95.4
70	359.5	80.05	51.03	80.05	359.5	79.86	51.03	79.86	65- 70	604.1	29788	97.4,97.4
75	171.9	52.76	43.50	52.76	171.9	52.69	43.50	52.69	70- 75	401.3	30189	98.7,98.7
80	55.55	25.13	30.06	25.13	55.55	25.14	30.06	25.14	75- 80	234.8	30424	99.5,99.5
85	11.87	14.08	15.90	14.08	11.87	14.04	15.90	14.04	80- 85	113.5	30538	99.9,99.9
90	0.9965	2.646	1.727	2.646	0.9965	2.551	1.727	2.551	85- 90	40.79	30578	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): 23369 lm

%lum = 76.4%

%lamp = 76.4%

Conical surface Flux(120deg): 28309 lm

%lum = 92.6%

%lamp = 92.6%

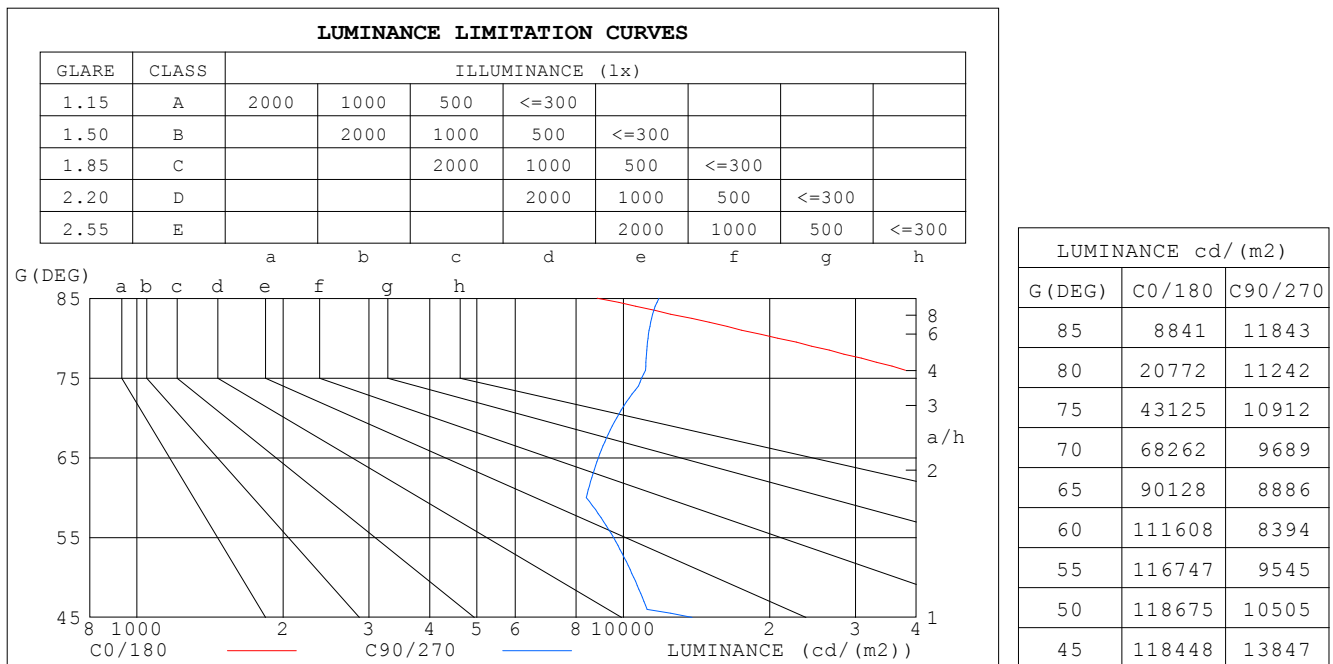
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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: 2017-07-03

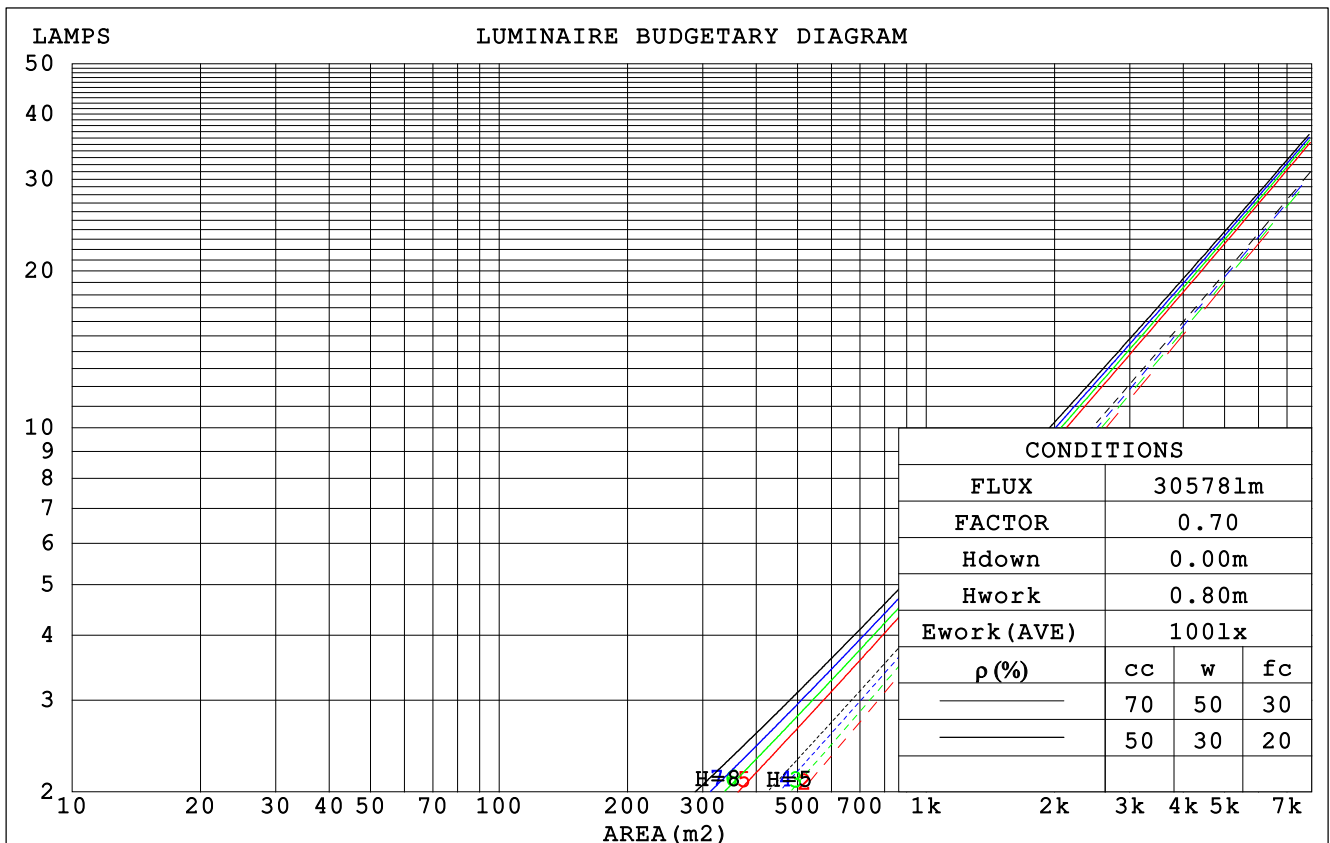
Checker:

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	1.00
1.0	1.08	1.05	1.02	1.06	1.03	1.00	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.88	.96	.91	.87	.92	.88	.85	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.82	.76	.87	.81	.76	.84	.79	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.77	.71	.66	.74	.69	.65	.72	.68	.65	.63
5.0	.73	.66	.60	.72	.65	.60	.70	.64	.59	.68	.63	.59	.67	.62	.58	.56
6.0	.67	.60	.54	.66	.59	.54	.65	.58	.53	.63	.57	.53	.62	.57	.53	.51
7.0	.62	.54	.49	.61	.54	.49	.60	.53	.49	.58	.53	.48	.57	.52	.48	.46
8.0	.57	.50	.45	.57	.49	.45	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.53	.46	.41	.51	.45	.41	.50	.45	.41	.50	.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: 2017-07-03

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	.234	.133	.042	.227	.130	.041	.214	.123	.039	.202	.117	.037	.192	.111	.036	
2.0	.226	.124	.038	.220	.121	.037	.209	.116	.036	.198	.111	.035	.189	.107	.034	
3.0	.214	.114	.034	.209	.112	.034	.199	.108	.033	.190	.104	.032	.182	.101	.031	
4.0	.202	.105	.031	.197	.103	.031	.189	.100	.030	.181	.097	.029	.174	.094	.029	
5.0	.190	.097	.028	.186	.096	.028	.179	.093	.027	.172	.091	.027	.165	.088	.027	
6.0	.179	.090	.026	.176	.089	.026	.169	.087	.025	.163	.085	.025	.157	.083	.025	
7.0	.169	.084	.024	.166	.083	.024	.160	.081	.023	.155	.079	.023	.150	.078	.023	
8.0	.160	.078	.022	.158	.078	.022	.152	.076	.022	.147	.075	.022	.142	.073	.021	
9.0	.152	.074	.021	.149	.073	.020	.145	.072	.020	.140	.070	.020	.136	.069	.020	
10.0	.144	.069	.019	.142	.069	.019	.138	.067	.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	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.163	.132	.106	.140	.114	.092	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.090	.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	.069	.038	.077	.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	.118	.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:2017-07-03

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	28.2	29.5	28.5	29.7	29.9	19.5	20.8	19.8	21.0	21.2
3H	29.1	30.3	29.4	30.5	30.7	19.8	21.0	20.1	21.2	21.4
4H	29.3	30.4	29.6	30.6	30.9	20.1	21.2	20.4	21.4	21.7
6H	29.4	30.4	29.7	30.6	30.9	20.4	21.5	20.8	21.7	22.0
8H	29.3	30.3	29.7	30.6	30.9	20.6	21.6	20.9	21.8	22.1
12H	29.3	30.2	29.6	30.5	30.8	20.7	21.6	21.0	21.9	22.2
4H 2H	28.0	29.1	28.3	29.3	29.6	20.1	21.2	20.4	21.4	21.6
3H	28.9	29.9	29.3	30.1	30.4	20.5	21.4	20.8	21.7	22.0
4H	29.2	30.0	29.5	30.3	30.6	20.8	21.7	21.2	22.0	22.3
6H	29.2	30.0	29.6	30.3	30.7	21.2	22.0	21.6	22.3	22.7
8H	29.2	29.9	29.6	30.3	30.7	21.4	22.1	21.8	22.5	22.8
12H	29.2	29.8	29.6	30.2	30.6	21.6	22.2	22.0	22.6	23.0
8H 4H	29.1	29.7	29.5	30.1	30.5	21.0	21.7	21.4	22.1	22.5
6H	29.2	29.7	29.6	30.1	30.5	21.5	22.1	22.0	22.5	22.9
8H	29.2	29.7	29.6	30.1	30.5	21.8	22.3	22.2	22.7	23.1
12H	29.1	29.6	29.6	30.0	30.5	22.0	22.5	22.5	22.9	23.4
12H 4H	29.0	29.6	29.4	30.0	30.4	21.1	21.7	21.5	22.1	22.5
6H	29.1	29.6	29.6	30.0	30.5	21.6	22.1	22.0	22.5	22.9
8H	29.1	29.6	29.6	30.0	30.5	21.9	22.3	22.3	22.7	23.2
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 2.1					+ 1.2 / - 1.5				
1.5H	+ 2.2 / - 4.0					+ 1.5 / - 1.5				
2.0H	+ 3.5 / - 6.3					+ 1.3 / - 1.1				

CIE Pub.117 Corrected 30578 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.9)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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	71	62	56	70	61	56	51
0.80	81	72	66	80	71	66	78	71	66	60
1.00	88	79	74	87	79	74	85	79	73	68
1.25	94	86	81	92	85	80	90	84	79	74
1.50	98	90	85	96	90	85	94	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	100	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

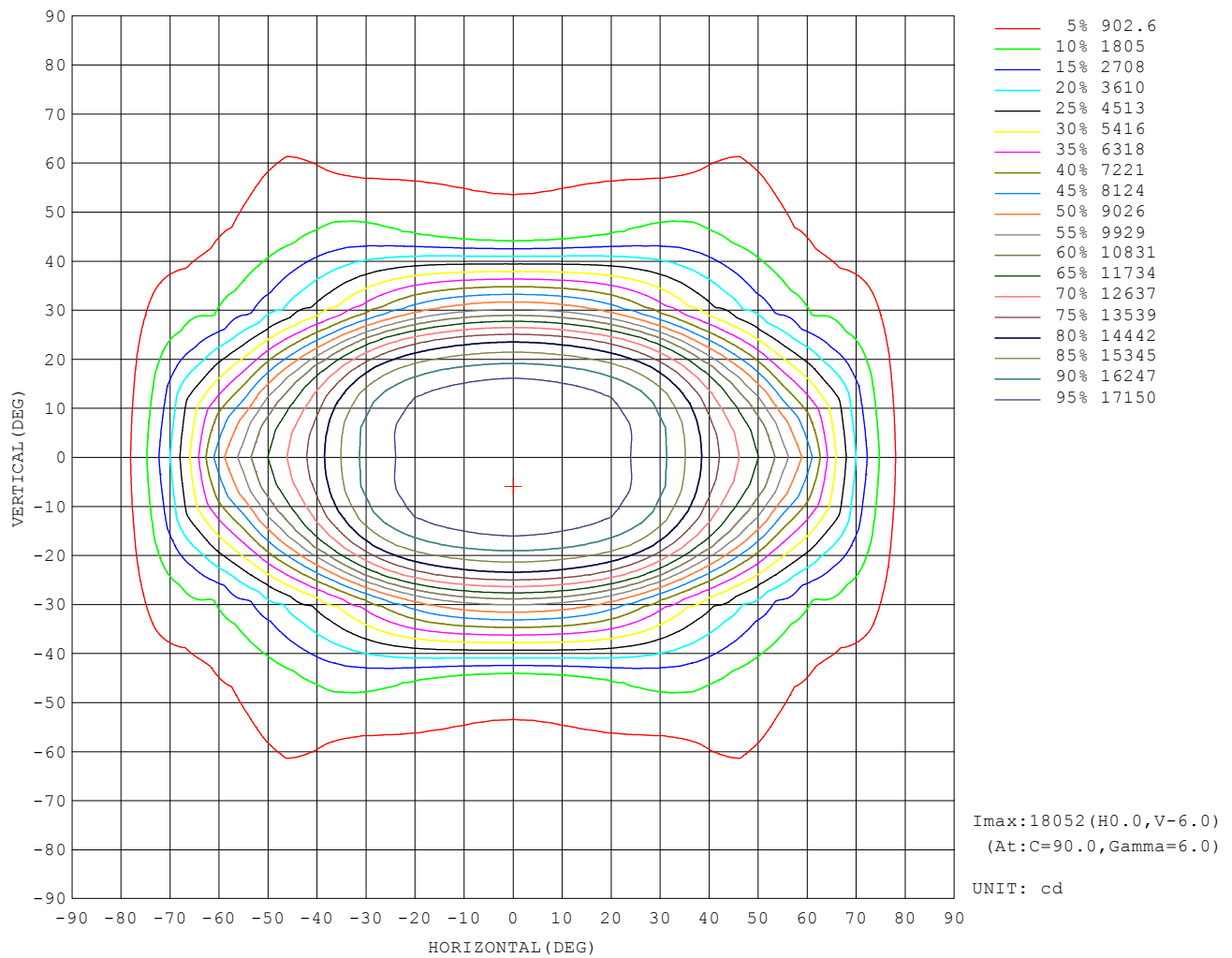
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-03

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



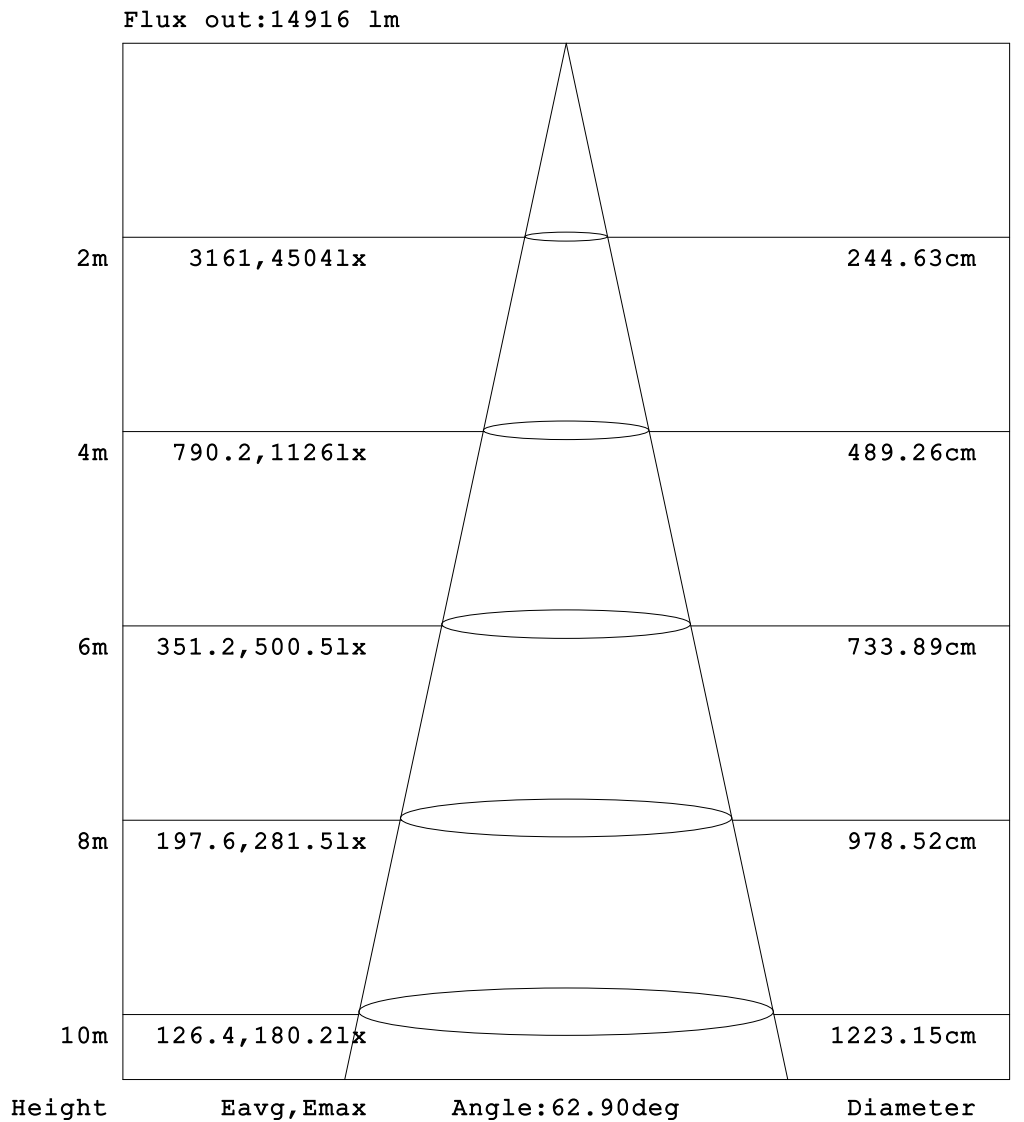
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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.

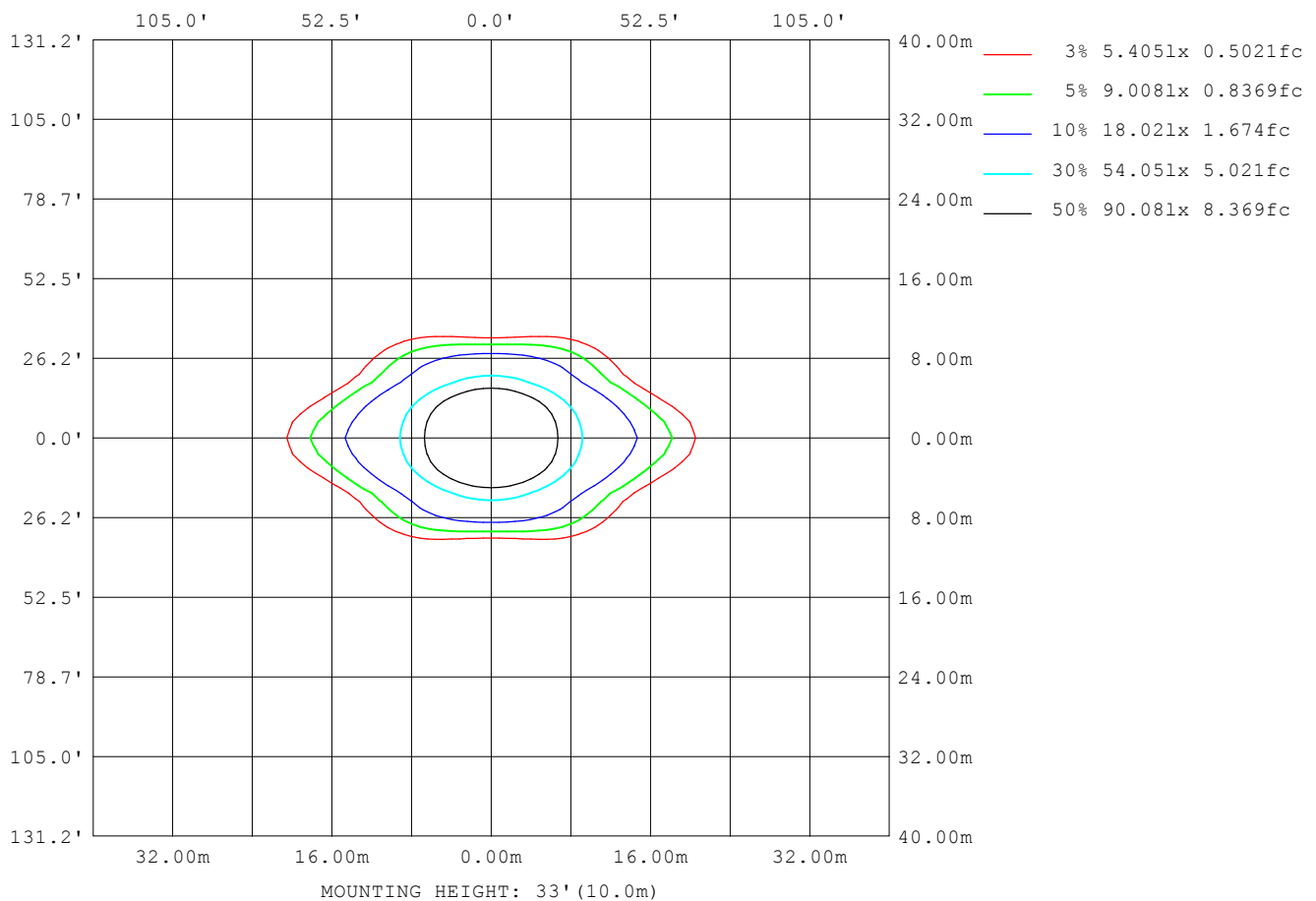
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



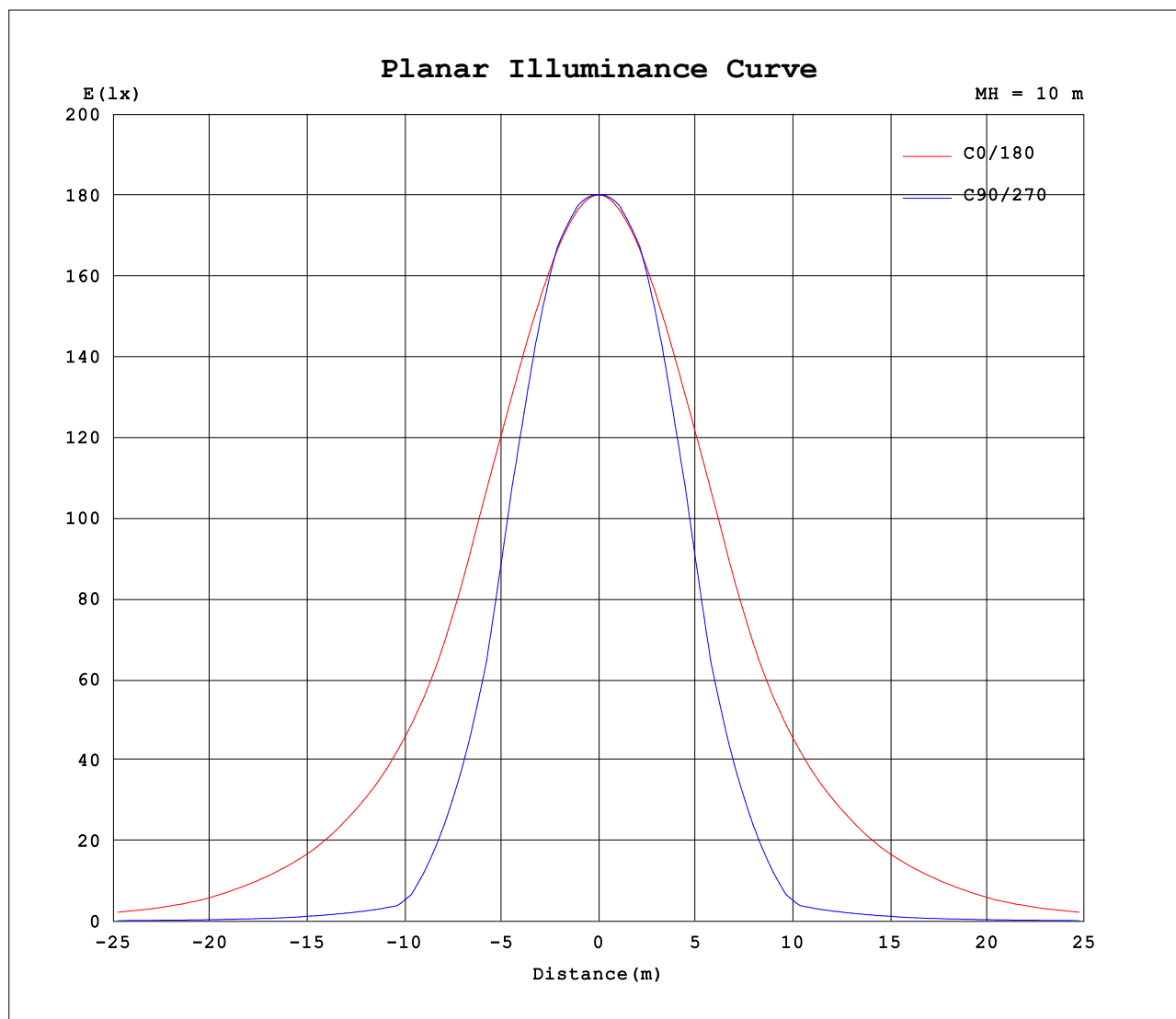
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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: 2017-07-03

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:

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

Assessor: