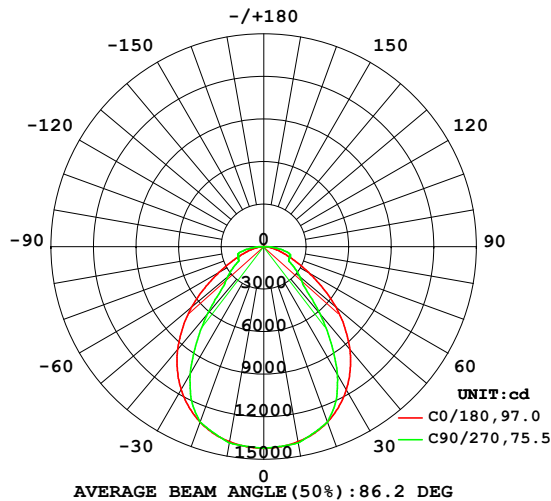


LUMINAIRE PHOTOMETRIC TEST REPORT

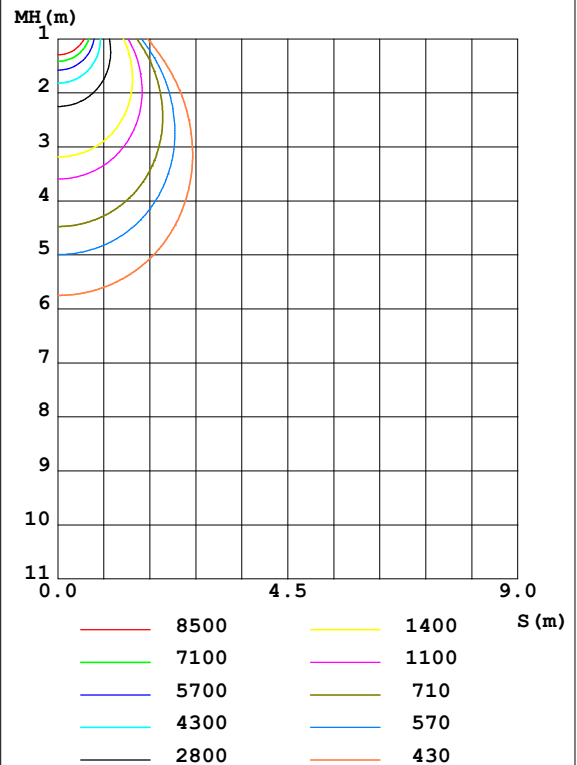
Test:U:229.8V I:1.040A P:233.7W PF:0.9779 Lamp Flux:28801x1 lm		
NAME: LHB03-240	TYPE:240W	WEIGHT:
SPEC.:5000K Ra70 80*100DEG L00303	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.22 lm/W			
MODEL	LHB03-240	Imax(cd)	14213	S/MH(C0/180)	1.22
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH(C90/270)	1.09
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	28801	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	28801	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.25

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

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	1415	1412	1413	1412	1415	1413	1413	1413	0- 5	338.6	338.6	1.18,1.18
10	1397	1397	1405	1397	1397	1398	1405	1398	5- 10	1006	1344	4.67,4.67
15	1364	1370	1361	1370	1364	1370	1361	1370	10- 15	1639	2984	10.4,10.4
20	1316	1313	1316	1313	1316	1314	1316	1314	15- 20	2208	5191	18,18
25	1249	1247	1203	1247	1249	1247	1203	1247	20- 25	2679	7870	27.3,27.3
30	1165	1146	1041	1146	1165	1146	1041	1146	25- 30	2987	10857	37.7,37.7
35	1064	1007	827.8	1007	1064	1006	827.8	1006	30- 35	3087	13944	48.4,48.4
40	945.3	837.9	614.3	837.9	945.3	836.6	614.3	836.6	35- 40	2966	16911	58.7,58.7
45	810.2	656.2	415.5	656.2	810.2	654.7	415.5	654.7	40- 45	2654	19565	67.9,67.9
50	665.7	486.9	335.2	486.9	665.7	485.3	335.2	485.3	45- 50	2244	21808	75.7,75.7
55	508.6	340.2	269.6	340.2	508.6	339.1	269.6	339.1	50- 55	1856	23664	82.2,82.2
60	365.3	255.5	204.0	255.5	365.3	254.8	204.0	254.8	55- 60	1465	25128	87.2,87.2
65	248.1	177.4	199.8	177.4	248.1	176.9	199.8	176.9	60- 65	1117	26245	91.1,91.1
70	163.8	122.4	195.7	122.4	163.8	122.3	195.7	122.3	65- 70	881.7	27127	94.2,94.2
75	104.1	91.98	185.6	91.98	104.1	92.20	185.6	92.20	70- 75	714.8	27842	96.7,96.7
80	59.36	60.23	128.3	60.23	59.36	60.71	128.3	60.71	75- 80	539.2	28381	98.5,98.5
85	20.68	30.69	65.11	30.69	20.68	30.95	65.11	30.95	80- 85	314.6	28696	99.6,99.6
90	0.8500	2.063	1.911	2.063	0.8500	2.148	1.911	2.148	85- 90	105.5	28801	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): 19565 lm

%lum = 67.9%

%lamp = 67.9%

Conical surface Flux(120deg): 25128 lm

%lum = 87.2%

%lamp = 87.2%

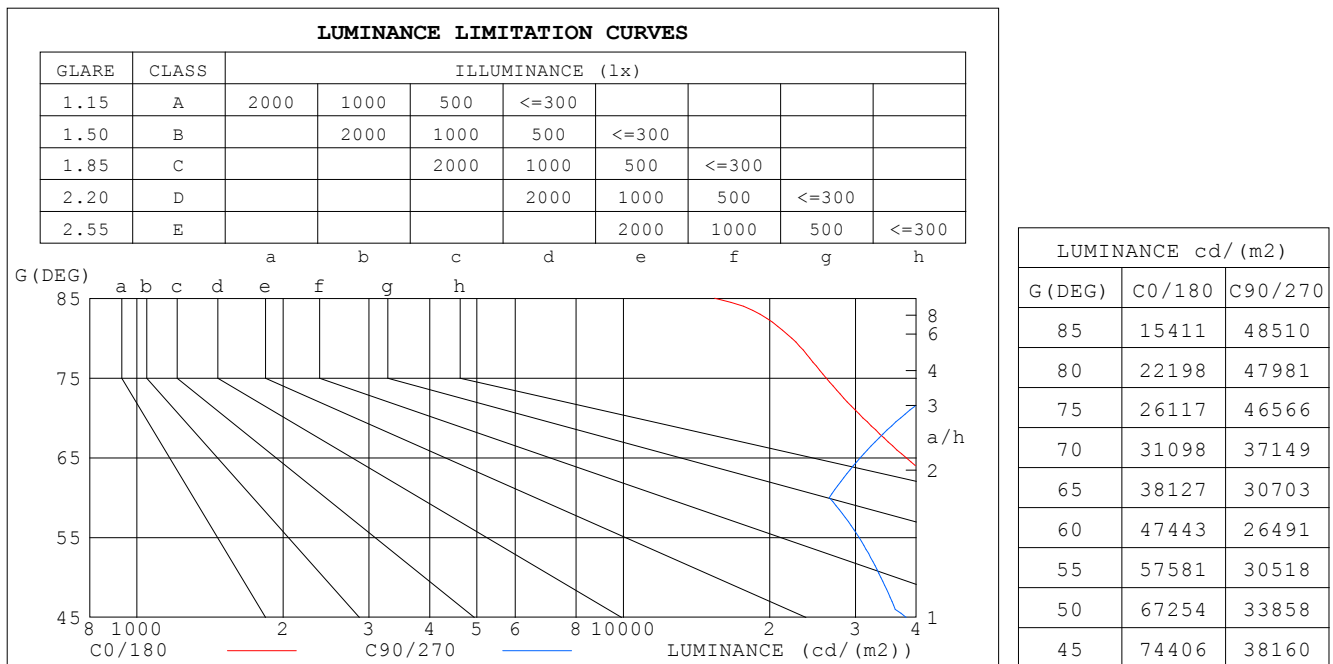
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-02

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

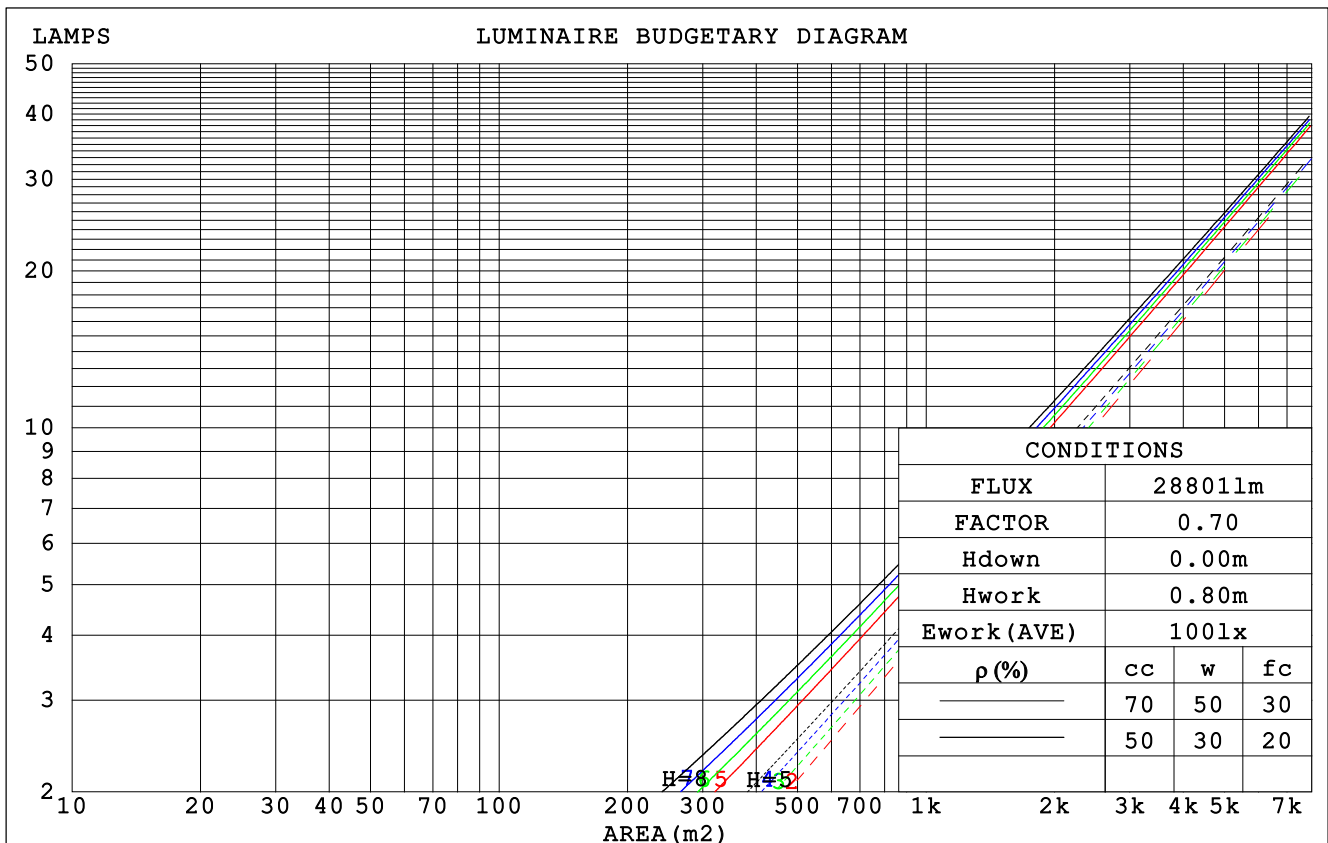
Checker:

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	1.06	1.02	.99	1.04	1.00	.97	.00	.97	.94	.96	.94	.91	.92	.90	.89	.87
2.0	.94	.88	.83	.93	.87	.82	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.77	.72	.83	.76	.71	.80	.74	.70	.78	.73	.69	.75	.71	.67	.65
4.0	.76	.68	.62	.75	.68	.62	.72	.66	.61	.70	.65	.60	.68	.63	.60	.58
5.0	.69	.61	.55	.68	.60	.55	.66	.59	.54	.64	.58	.54	.62	.57	.53	.51
6.0	.63	.55	.49	.62	.54	.49	.60	.53	.48	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.49	.44	.55	.49	.44	.54	.48	.43	.53	.47	.43	.41
8.0	.53	.45	.40	.52	.45	.40	.51	.44	.39	.50	.44	.39	.49	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.41	.36	.46	.40	.36	.45	.40	.36	.34
10.0	.45	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.33	.42	.37	.33	.31



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	.268	.152	.048	.261	.149	.047	.248	.142	.045	.236	.136	.044	.225	.130	.042	
2.0	.253	.139	.043	.247	.136	.042	.236	.131	.041	.225	.126	.040	.216	.122	.038	
3.0	.237	.126	.038	.231	.124	.037	.221	.120	.036	.212	.116	.036	.204	.113	.035	
4.0	.221	.115	.034	.216	.113	.033	.207	.110	.033	.199	.107	.032	.192	.104	.032	
5.0	.206	.105	.030	.202	.104	.030	.194	.101	.030	.187	.099	.029	.180	.096	.029	
6.0	.193	.097	.028	.189	.096	.028	.182	.093	.027	.176	.091	.027	.170	.089	.027	
7.0	.181	.090	.025	.178	.089	.025	.172	.087	.025	.166	.085	.025	.160	.083	.025	
8.0	.170	.083	.023	.167	.082	.023	.162	.081	.023	.157	.079	.023	.152	.078	.023	
9.0	.161	.078	.022	.158	.077	.022	.153	.076	.021	.149	.074	.021	.144	.073	.021	
10.0	.152	.073	.020	.150	.072	.020	.145	.071	.020	.141	.070	.020	.137	.069	.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	.152	.134	.118	.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	.158	.114	.079	.136	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.129	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.036	.111	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.096	.051	.021	.067	.036	.015	.039	.021	.009	.013	.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	26.4	27.8	26.7	28.0	28.1	23.6	24.9	23.8	25.1	25.3
3H	27.1	28.3	27.4	28.6	28.8	25.2	26.4	25.5	26.7	26.9
4H	27.3	28.5	27.6	28.7	29.0	26.4	27.6	26.8	27.9	28.1
6H	27.4	28.6	27.8	28.8	29.1	27.5	28.7	27.9	28.9	29.2
8H	27.5	28.5	27.8	28.8	29.1	27.9	29.0	28.3	29.3	29.6
12H	27.5	28.5	27.8	28.8	29.1	28.2	29.3	28.6	29.6	29.8
4H 2H	26.5	27.6	26.8	27.9	28.1	24.0	25.2	24.4	25.5	25.7
3H	27.3	28.3	27.6	28.6	28.9	25.8	26.8	26.1	27.1	27.4
4H	27.6	28.6	28.0	28.9	29.2	27.2	28.2	27.6	28.5	28.8
6H	27.9	28.7	28.3	29.0	29.4	28.5	29.4	28.9	29.7	30.1
8H	27.9	28.7	28.3	29.1	29.4	29.0	29.8	29.5	30.2	30.6
12H	27.9	28.6	28.4	29.0	29.4	29.4	30.1	29.9	30.5	30.9
8H 4H	27.7	28.5	28.1	28.8	29.2	27.4	28.1	27.8	28.5	28.9
6H	28.0	28.7	28.5	29.1	29.5	28.9	29.5	29.3	29.9	30.3
8H	28.2	28.7	28.6	29.2	29.6	29.5	30.1	29.9	30.5	30.9
12H	28.2	28.7	28.7	29.2	29.6	30.0	30.5	30.5	31.0	31.4
12H 4H	27.7	28.4	28.2	28.8	29.2	27.4	28.1	27.8	28.4	28.8
6H	28.1	28.7	28.6	29.1	29.5	28.9	29.4	29.3	29.9	30.3
8H	28.2	28.7	28.7	29.2	29.7	29.5	30.0	30.0	30.5	30.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.5					+ 0.3 / - 0.3				
1.5H	+ 0.3 / - 0.6					+ 0.2 / - 0.3				
2.0H	+ 1.1 / - 1.4					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 28801 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.7)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	65	55	50	64	55	49	44
0.80	76	66	59	75	65	59	73	64	59	53
1.00	83	74	68	82	73	67	80	74	67	61
1.25	89	81	75	88	80	74	86	79	74	67
1.50	94	86	80	92	85	79	90	83	78	72
2.00	99	92	87	98	91	86	95	89	85	78
2.50	103	96	91	101	95	90	97	92	88	81
3.00	105	100	95	103	98	94	99	95	92	84
4.00	109	104	100	106	102	98	102	99	96	87
5.00	111	106	103	108	105	101	104	101	98	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

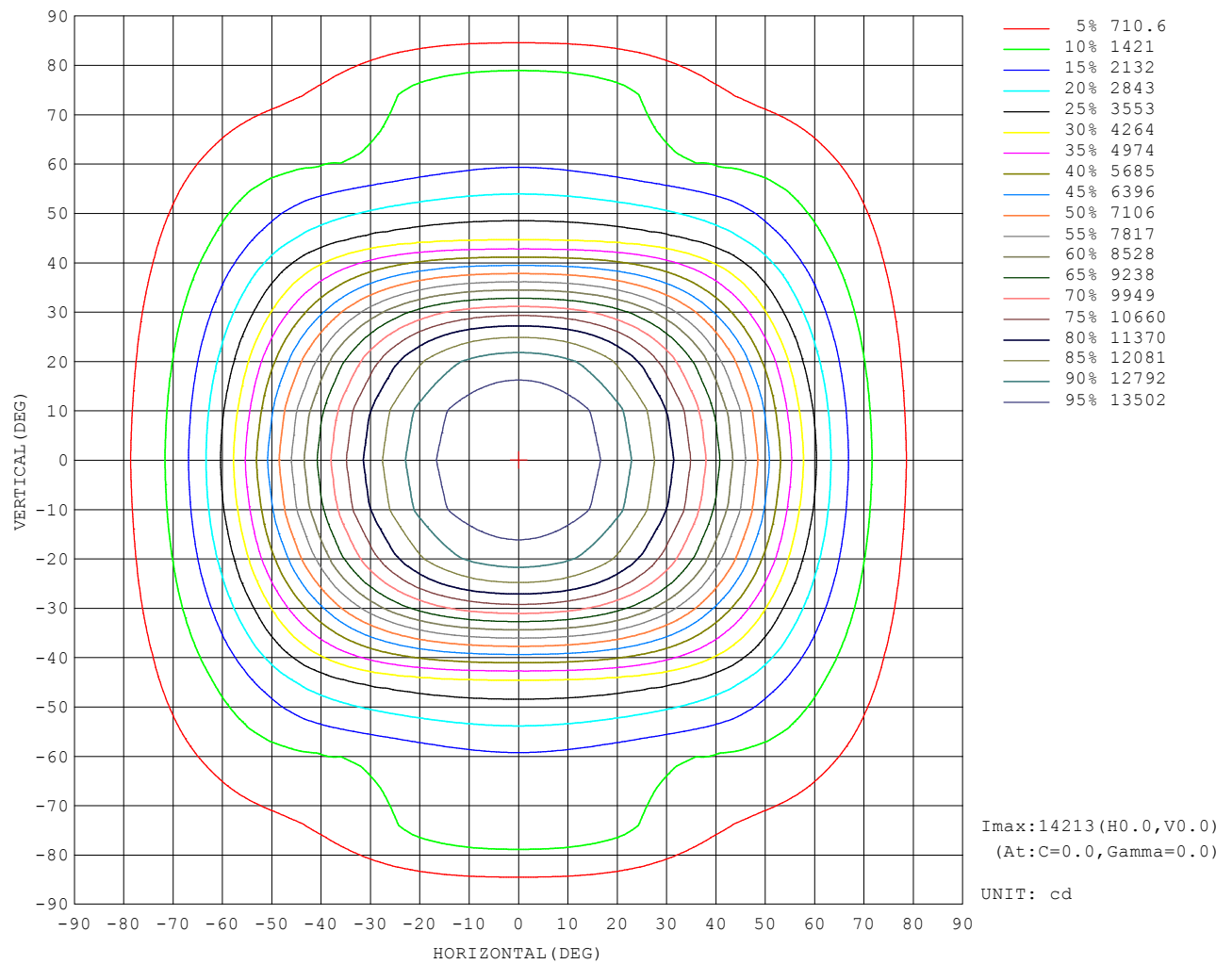
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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



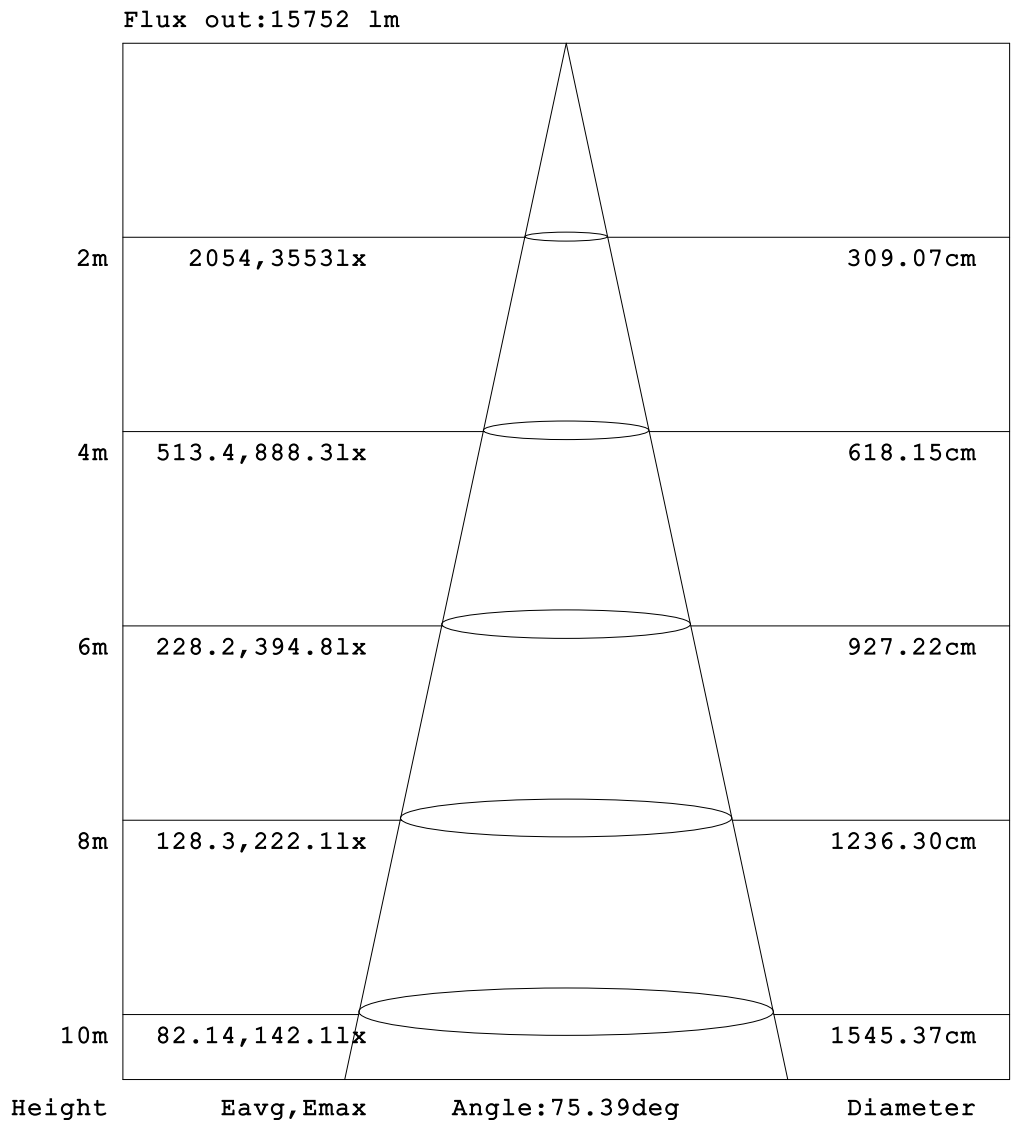
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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.

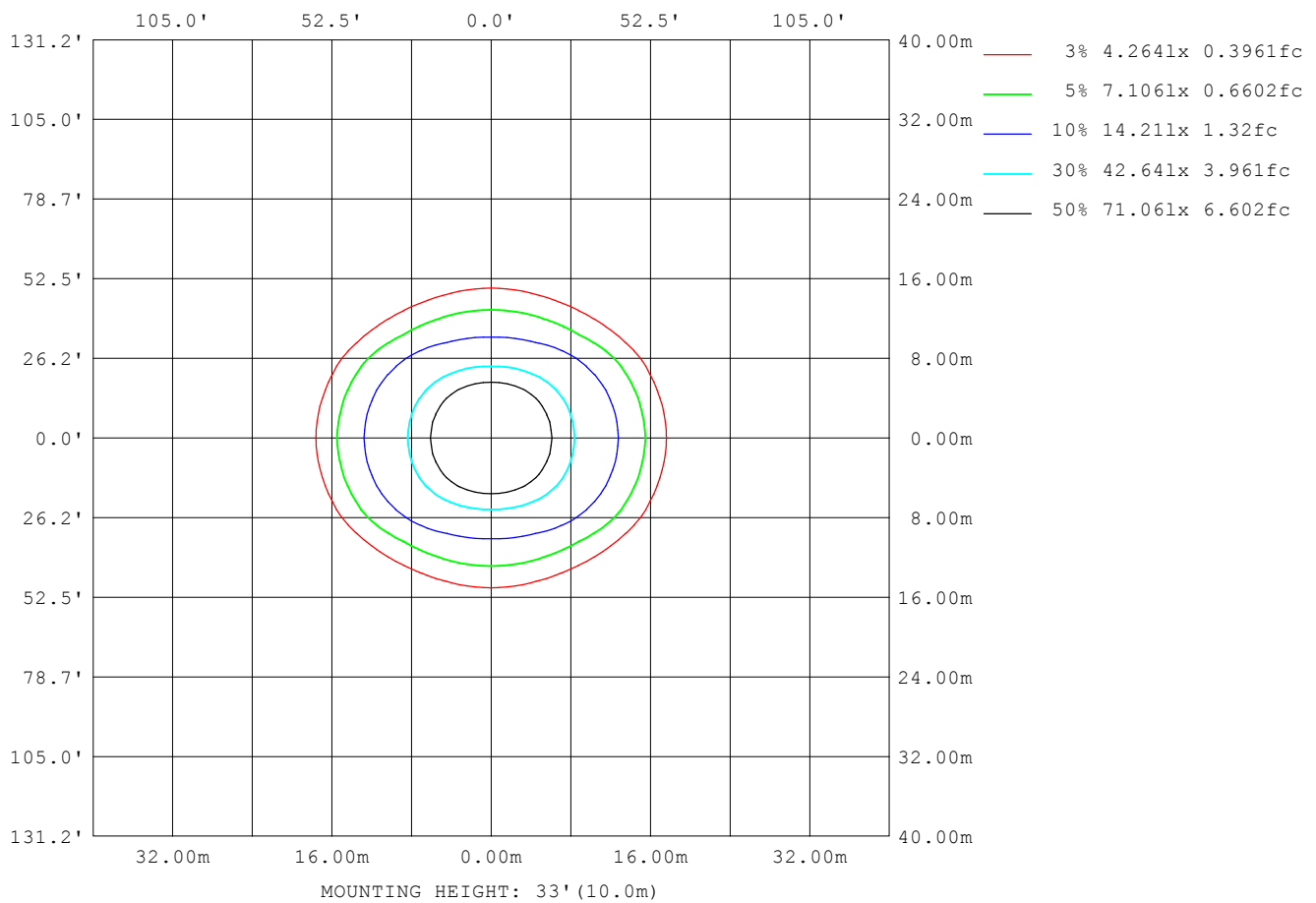
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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



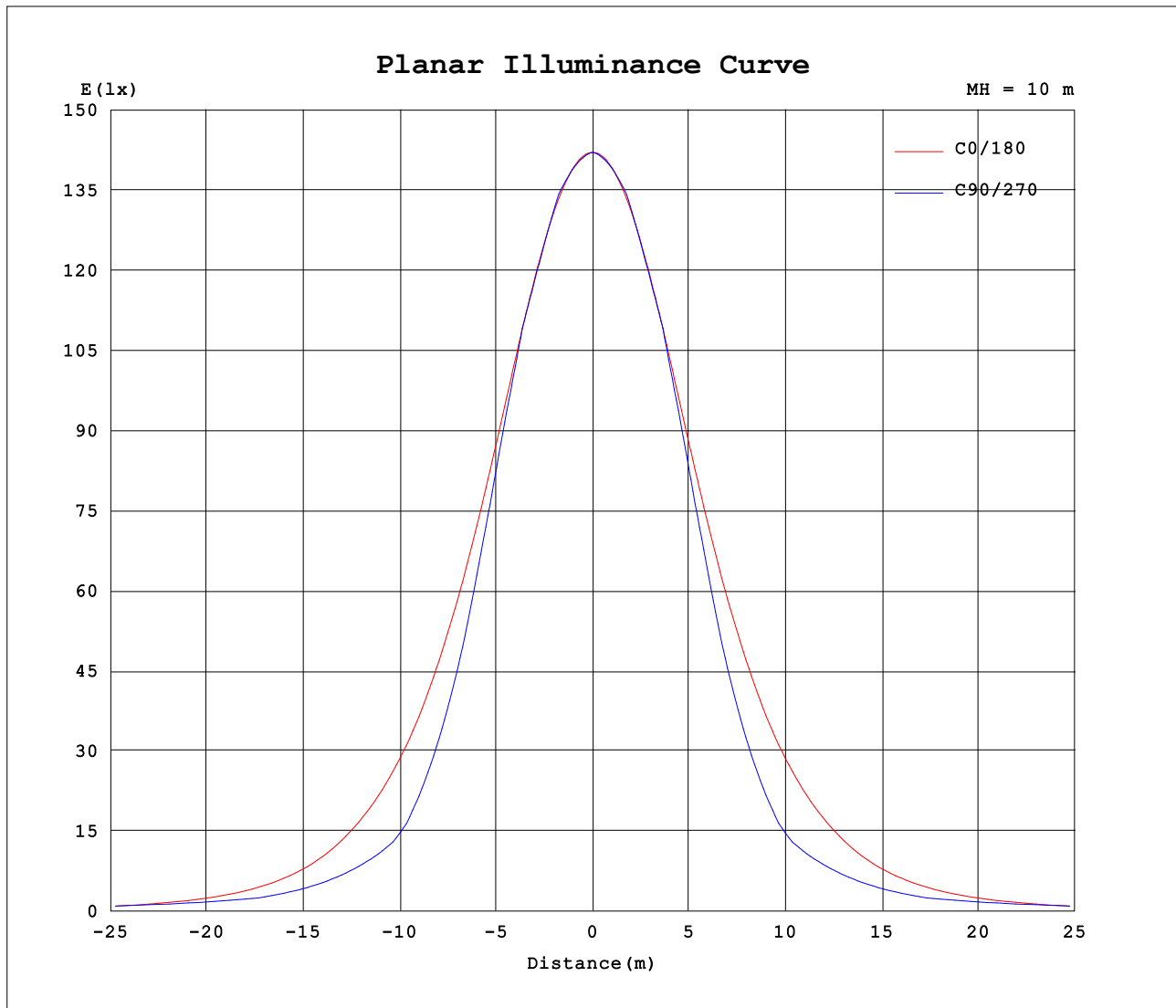
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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:

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

Assessor: