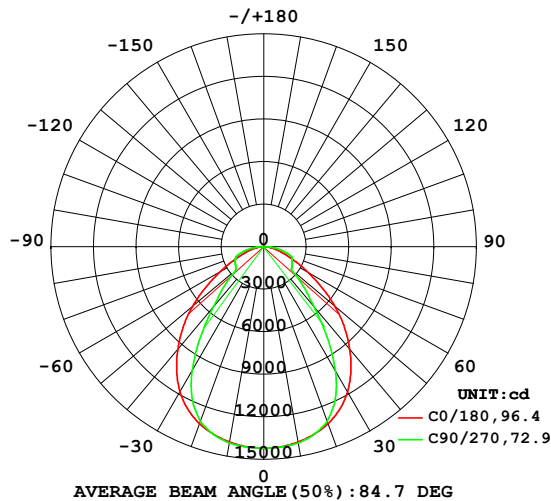


LUMINAIRE PHOTOMETRIC TEST REPORT

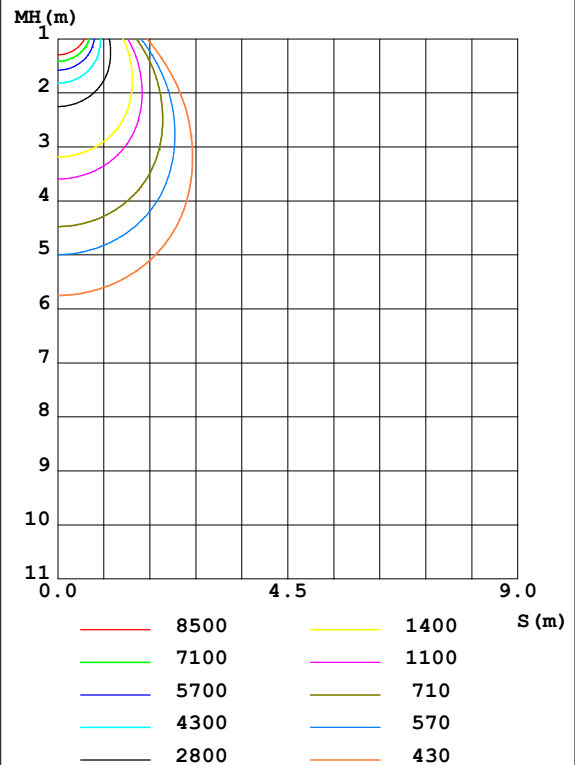
Test:U:229.9V I:1.051A P:236.2W PF:0.9771 Lamp Flux:28300.1x1 lm		
NAME: LHB03-240	TYPE:240W	WEIGHT:
SPEC.:5000K Ra80 80100DEG L00303	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 119.81 lm/W			
MODEL	LHB03-240	I _{max} (cd)	14216	S/MH (C0/180)	1.23
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH (C90/270)	1.06
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	28300	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	28300.1	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:2017-07-03

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1416	1416	1418	1416	1416	1416	1418	1416	0- 5	339.2	339.2	1.2,1.2
10	1399	1401	1406	1401	1399	1401	1406	1401	5- 10	1008	1347	4.76,4.76
15	1370	1374	1371	1374	1370	1374	1371	1374	10- 15	1646	2993	10.6,10.6
20	1328	1327	1312	1327	1328	1327	1312	1327	15- 20	2222	5215	18.4,18.4
25	1267	1255	1192	1255	1267	1256	1192	1256	20- 25	2693	7908	27.9,27.9
30	1182	1149	1012	1149	1182	1151	1012	1151	25- 30	2999	10907	38.5,38.5
35	1072	1007	780.8	1007	1072	1008	780.8	1008	30- 35	3078	13986	49.4,49.4
40	943.4	825.7	551.2	825.7	943.4	827.0	551.2	827.0	35- 40	2914	16899	59.7,59.7
45	805.3	631.9	394.7	631.9	805.3	632.9	394.7	632.9	40- 45	2573	19472	68.8,68.8
50	656.5	454.7	254.3	454.7	656.5	454.9	254.3	454.9	45- 50	2155	21627	76.4,76.4
55	497.3	323.8	243.4	323.8	497.3	323.6	243.4	323.6	50- 55	1726	23354	82.5,82.5
60	356.4	219.2	232.5	219.2	356.4	218.9	232.5	218.9	55- 60	1392	24746	87.4,87.4
65	241.2	175.2	221.6	175.2	241.2	175.1	221.6	175.1	60- 65	1126	25872	91.4,91.4
70	159.7	129.1	210.7	129.1	159.7	129.1	210.7	129.1	65- 70	903.1	26775	94.6,94.6
75	102.0	82.43	158.6	82.43	102.0	82.60	158.6	82.60	70- 75	688.7	27463	97,97
80	58.84	53.76	106.6	53.76	58.84	53.86	106.6	53.86	75- 80	469.3	27933	98.7,98.7
85	20.88	28.05	54.60	28.05	20.88	28.06	54.60	28.06	80- 85	272.9	28206	99.7,99.7
90	0.8132	2.648	2.581	2.648	0.8132	2.598	2.581	2.598	85- 90	94.51	28300	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): 19472 lm

%lum = 68.8%

%lamp = 68.8%

Conical surface Flux(120deg): 24746 lm

%lum = 87.4%

%lamp = 87.4%

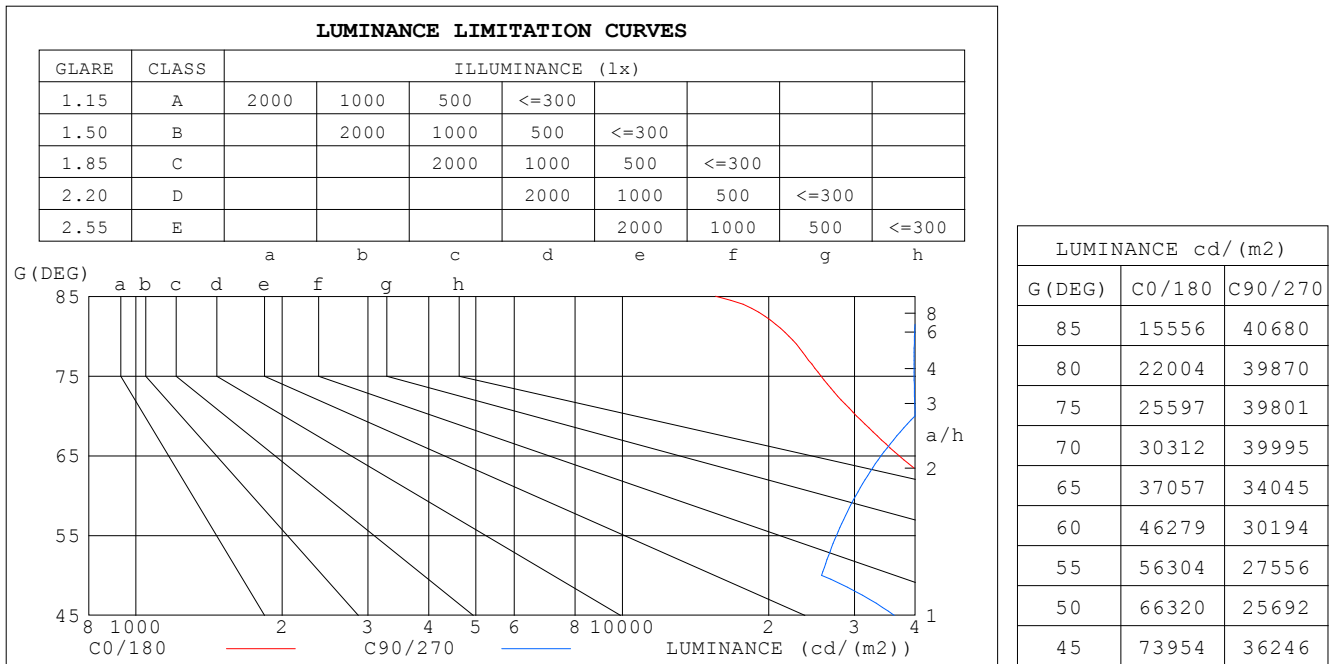
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

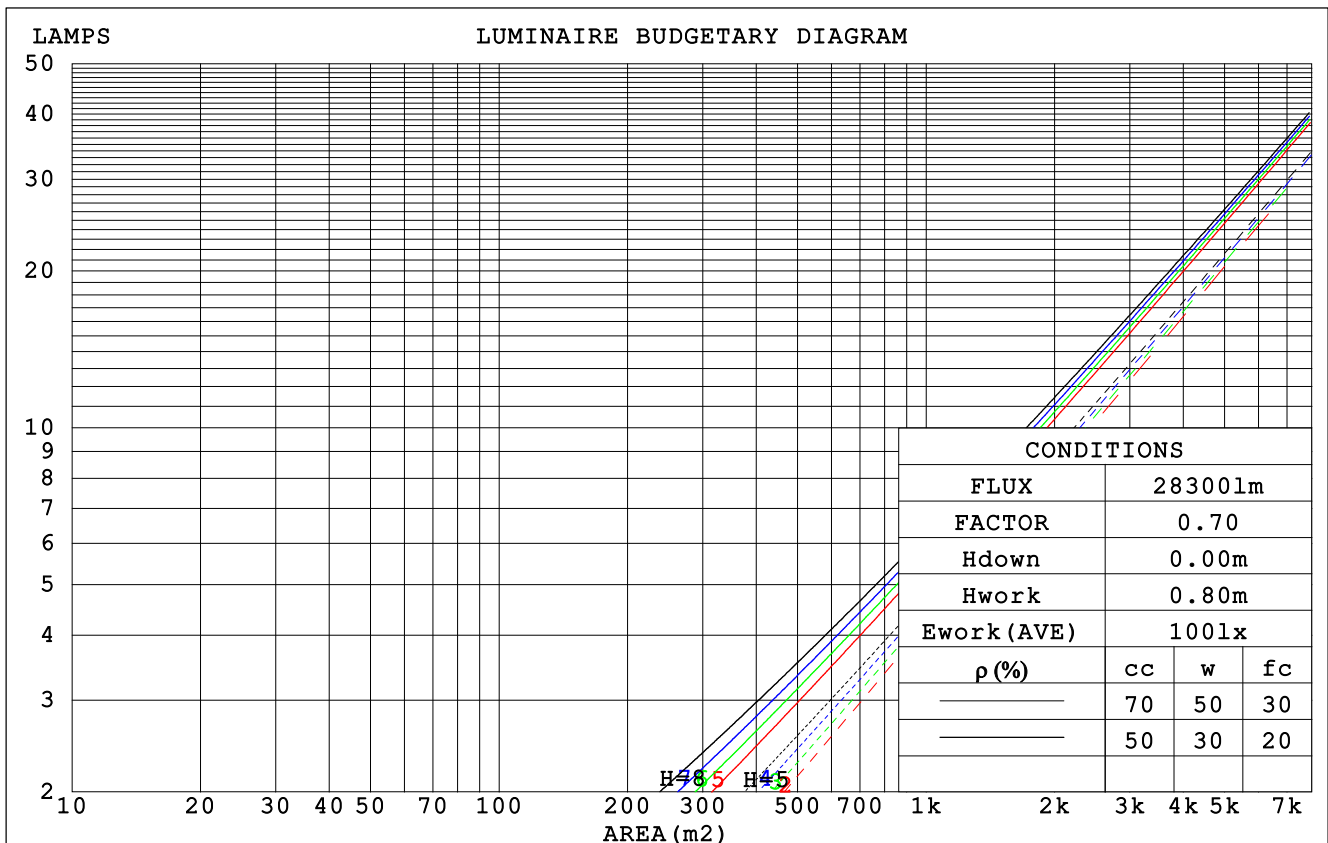
Checker:

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
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{fc}	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	.92	.91	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.78	.72	.83	.77	.71	.81	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.77	.69	.63	.75	.68	.62	.73	.67	.62	.71	.65	.61	.69	.64	.60	.58
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.55	.64	.59	.54	.63	.58	.54	.52
6.0	.63	.55	.49	.62	.55	.49	.61	.54	.49	.59	.53	.48	.58	.52	.48	.46
7.0	.58	.50	.44	.57	.50	.44	.56	.49	.44	.54	.48	.44	.53	.48	.43	.42
8.0	.53	.46	.40	.53	.45	.40	.52	.45	.40	.50	.44	.40	.49	.44	.40	.38
9.0	.49	.42	.37	.49	.42	.37	.48	.41	.36	.47	.41	.36	.46	.40	.36	.34
10.0	.46	.39	.34	.45	.38	.34	.44	.38	.33	.44	.38	.33	.43	.37	.33	.32



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	.264	.150	.048	.257	.147	.047	.244	.140	.045	.232	.134	.043	.221	.128	.041	
2.0	.251	.137	.042	.245	.135	.041	.233	.130	.040	.223	.125	.039	.213	.121	.038	
3.0	.234	.125	.037	.229	.123	.037	.219	.119	.036	.210	.115	.035	.202	.112	.035	
4.0	.219	.114	.033	.214	.112	.033	.206	.109	.033	.197	.106	.032	.190	.103	.031	
5.0	.205	.104	.030	.200	.103	.030	.193	.100	.030	.186	.098	.029	.179	.096	.029	
6.0	.192	.096	.027	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.180	.089	.025	.177	.088	.025	.171	.086	.025	.165	.084	.025	.159	.083	.024	
8.0	.169	.083	.023	.166	.082	.023	.161	.080	.023	.156	.079	.023	.151	.077	.023	
9.0	.160	.077	.022	.157	.077	.022	.152	.075	.021	.148	.074	.021	.143	.073	.021	
10.0	.151	.073	.020	.149	.072	.020	.144	.071	.020	.140	.070	.020	.136	.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	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.149	.100	.063	.128	.087	.055	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.077	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.046	.029	.015	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.100	.055	.023	.070	.038	.017	.041	.023	.010	.013	.007	.003	
10.0	.111	.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:2017-07-03

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	26.3	27.7	26.6	27.9	28.0	23.4	24.7	23.6	24.9	25.1
3H	27.0	28.2	27.3	28.4	28.7	25.3	26.5	25.6	26.8	27.0
4H	27.2	28.4	27.5	28.6	28.9	26.3	27.5	26.6	27.7	27.9
6H	27.3	28.4	27.7	28.7	29.0	27.1	28.2	27.4	28.5	28.7
8H	27.4	28.4	27.7	28.7	29.0	27.4	28.5	27.7	28.7	29.0
12H	27.4	28.4	27.7	28.7	29.0	27.6	28.7	28.0	28.9	29.2
4H 2H	26.4	27.5	26.7	27.8	28.0	23.9	25.1	24.2	25.3	25.6
3H	27.2	28.2	27.5	28.5	28.8	25.9	26.9	26.2	27.2	27.5
4H	27.5	28.4	27.9	28.8	29.1	27.0	27.9	27.4	28.2	28.6
6H	27.8	28.6	28.2	28.9	29.3	28.0	28.8	28.4	29.1	29.5
8H	27.8	28.6	28.2	28.9	29.3	28.4	29.1	28.8	29.5	29.9
12H	27.8	28.5	28.3	28.9	29.3	28.7	29.4	29.1	29.8	30.2
8H 4H	27.6	28.4	28.0	28.7	29.1	27.1	27.9	27.5	28.2	28.6
6H	27.9	28.6	28.4	29.0	29.4	28.2	28.8	28.6	29.2	29.7
8H	28.0	28.6	28.5	29.0	29.5	28.7	29.3	29.2	29.7	30.1
12H	28.1	28.6	28.6	29.0	29.5	29.2	29.7	29.6	30.1	30.6
12H 4H	27.6	28.3	28.0	28.7	29.1	27.1	27.8	27.5	28.2	28.6
6H	28.0	28.5	28.4	28.9	29.4	28.2	28.8	28.7	29.2	29.6
8H	28.1	28.6	28.6	29.0	29.5	28.8	29.2	29.2	29.7	30.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.5					+ 0.4 / - 0.4				
1.5H	+ 0.4 / - 0.7					+ 0.3 / - 0.4				
2.0H	+ 1.2 / - 1.5					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 28300 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.6)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	67	56	50	66	56	50	65	56	50	45
0.80	76	66	60	75	66	60	74	65	60	54
1.00	84	74	68	83	74	68	81	75	67	61
1.25	90	81	75	89	81	75	86	79	74	68
1.50	94	86	80	93	85	80	90	84	79	72
2.00	100	93	87	98	92	87	95	89	85	78
2.50	103	96	91	101	95	91	97	93	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		

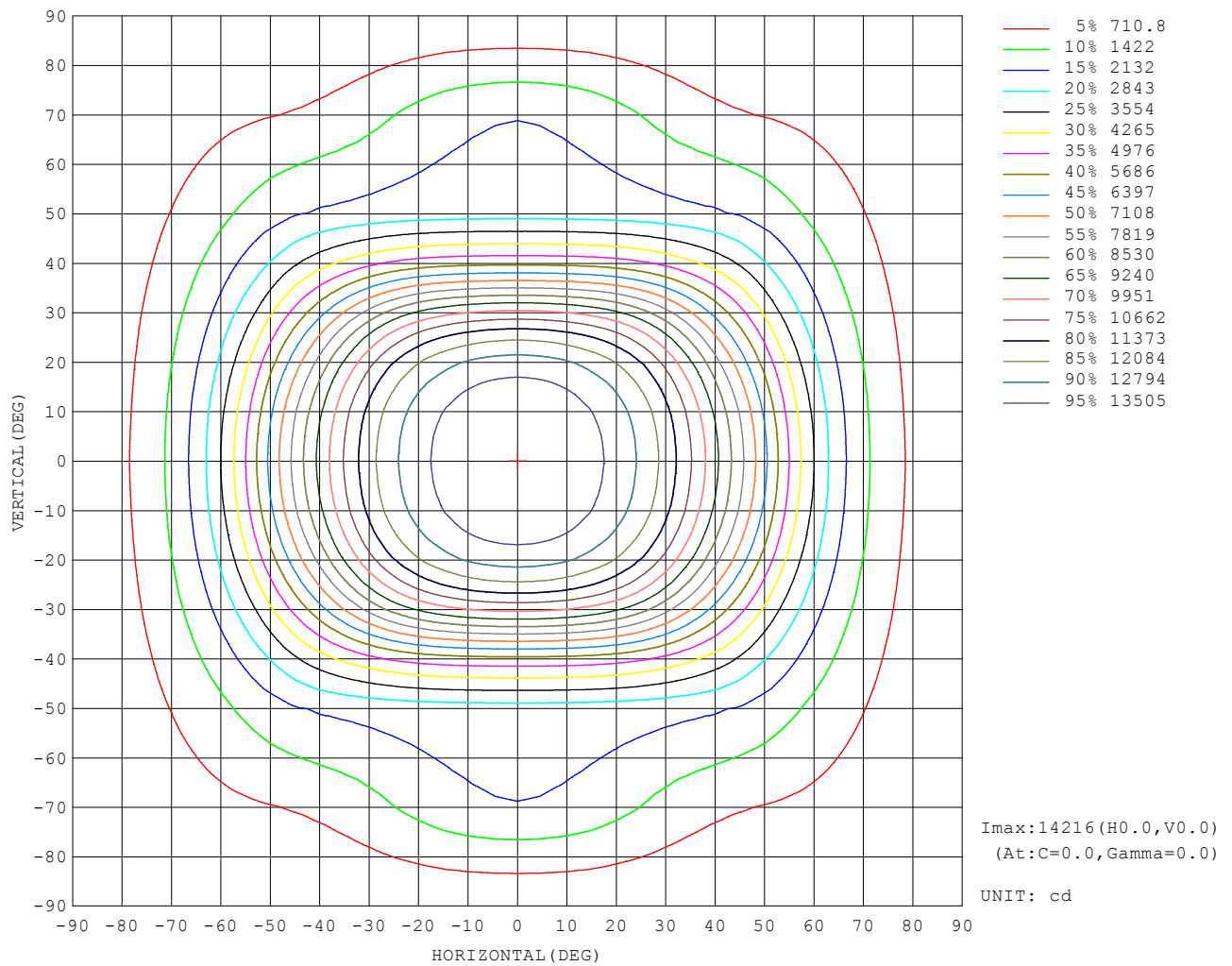
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



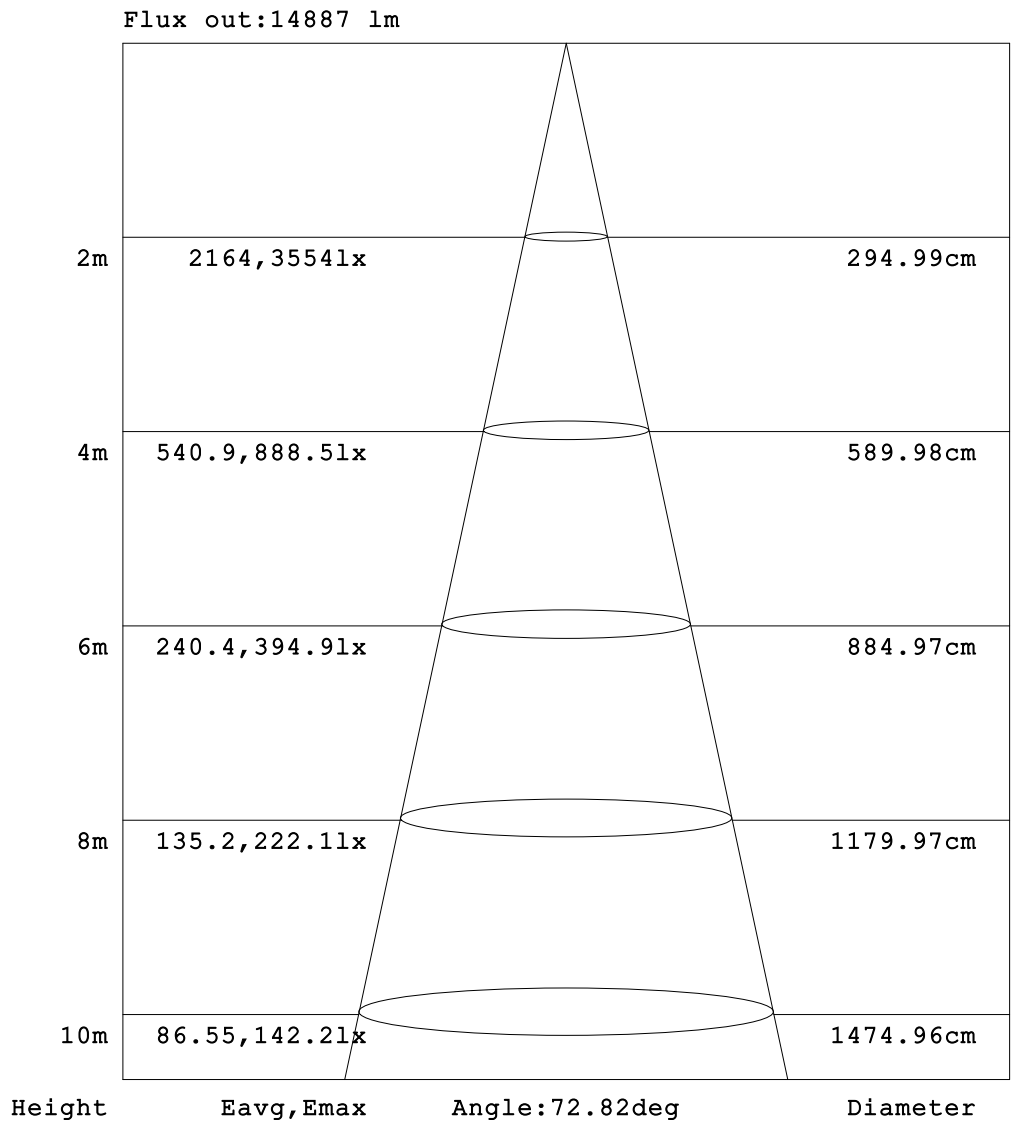
C Range: 0 - 360DEG
C Interval: 5.0DEG
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Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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.

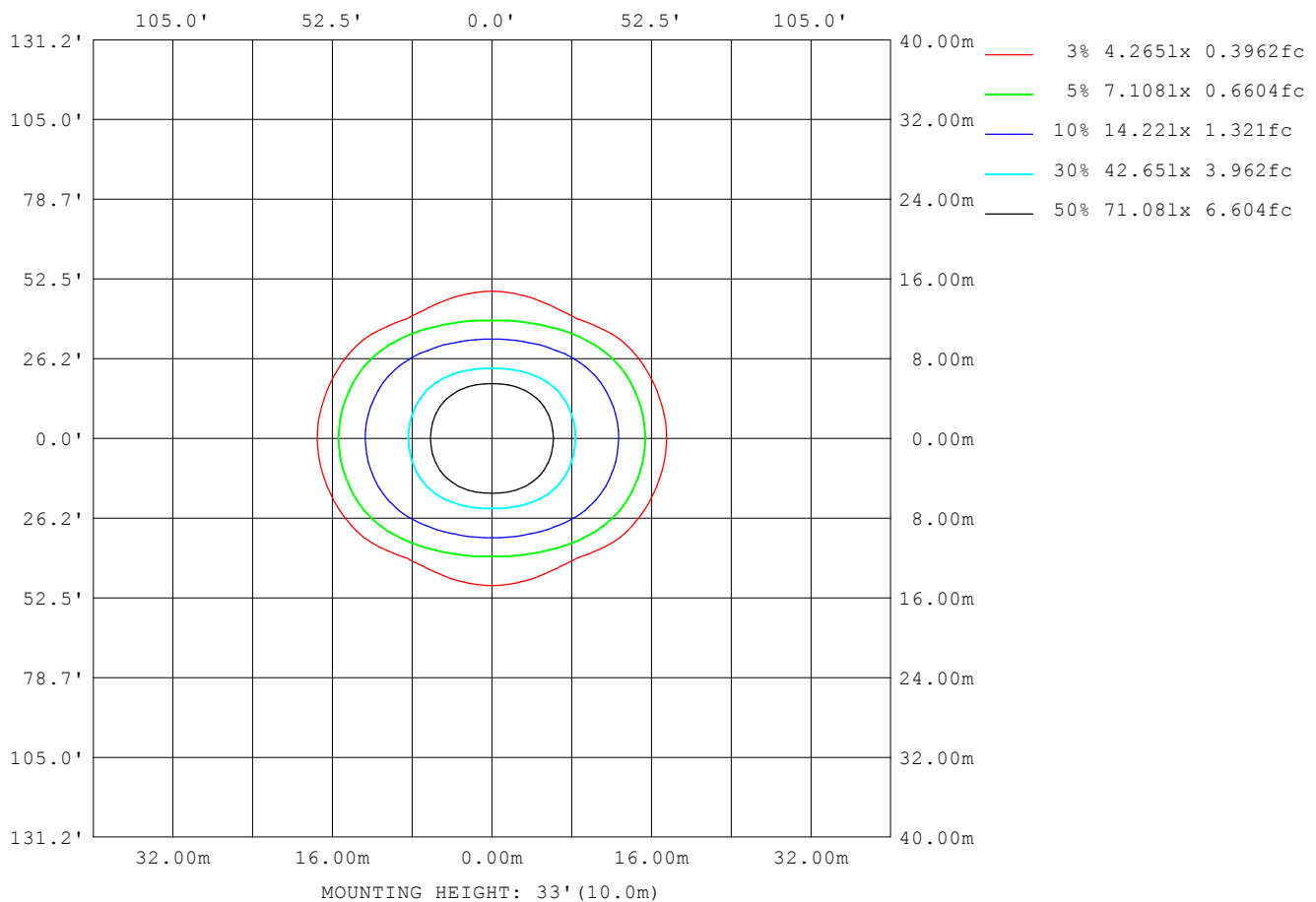
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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



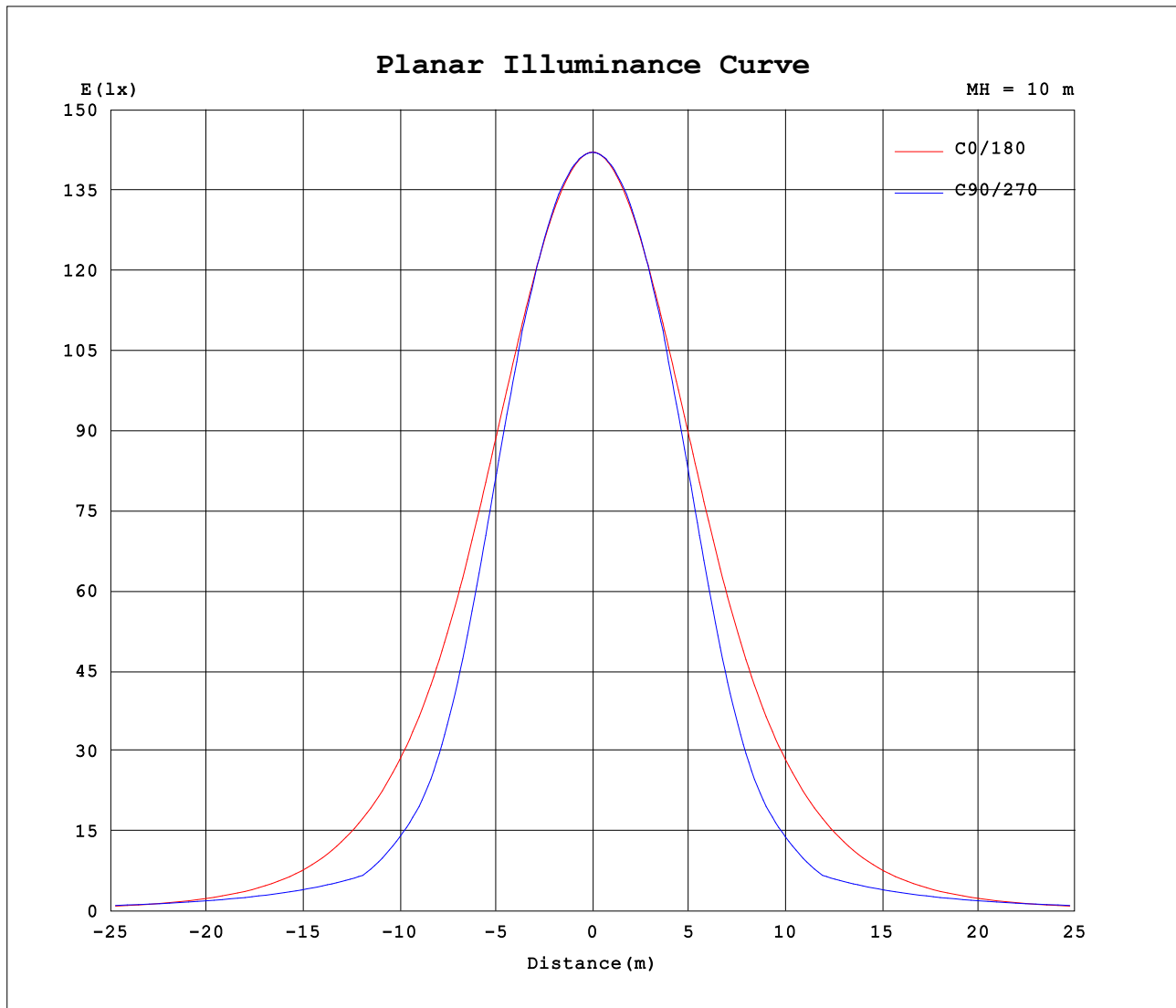
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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:

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: