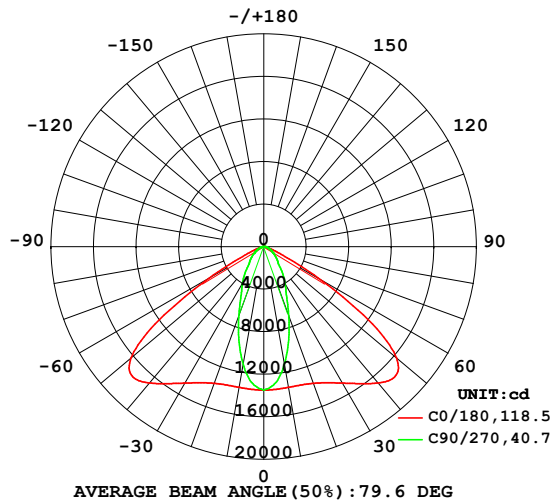


LUMINAIRE PHOTOMETRIC TEST REPORT

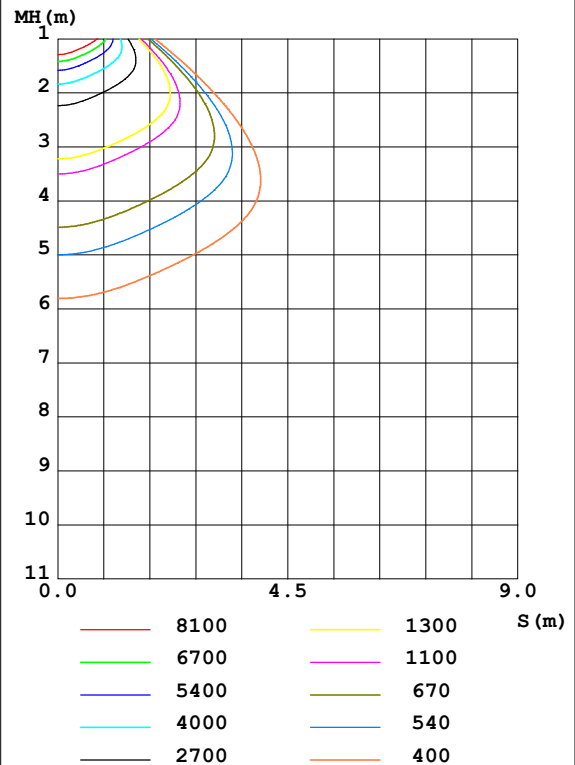
Test:U:229.9V I:0.6532A P:148.7W PF:0.9900 Lamp Flux:23085.1x1 lm		
NAME: LHB01-150H	TYPE:150W	WEIGHT:
SPEC.:5000K Ra70 L06404	DIM.: 1.178*0.137*0.102	SERIAL No.:
MFR.:	SUR.:1.17*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 155.24 lm/W			
MODEL	LHB01-150H	Imax(cd)	17377	S/MH(C0/180)	1.84
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	0.65
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	23085	η UP,DN(C0-180)	0.0,50.3
NOMINAL FLUX(lm)	23085.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.7
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:2017-09-26

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	1347	1312	1286	1312	1347	1311	1286	1311	0- 5	317.6	317.6	1.38,1.38
10	1344	1226	1124	1226	1344	1225	1124	1225	5- 10	908.9	1226	5.31,5.31
15	1348	1094	908.5	1094	1348	1091	908.5	1091	10- 15	1384	2611	11.3,11.3
20	1368	942.4	688.5	942.4	1368	935.6	688.5	935.6	15- 20	1719	4330	18.8,18.8
25	1412	783.8	508.7	783.8	1412	773.3	508.7	773.3	20- 25	1934	6263	27.1,27.1
30	1482	633.1	405.8	633.1	1482	619.6	405.8	619.6	25- 30	2083	8346	36.2,36.2
35	1572	512.9	311.7	512.9	1572	498.9	311.7	498.9	30- 35	2216	10562	45.8,45.8
40	1674	434.1	217.6	434.1	1674	420.5	217.6	420.5	35- 40	2314	12876	55.8,55.8
45	1738	342.1	181.6	342.1	1738	331.0	181.6	331.0	40- 45	2375	15251	66.1,66.1
50	1630	232.5	145.5	232.5	1630	227.4	145.5	227.4	45- 50	2360	17611	76.3,76.3
55	1198	190.3	110.9	190.3	1198	186.4	110.9	186.4	50- 55	2095	19705	85.4,85.4
60	593.1	141.4	87.53	141.4	593.1	138.9	87.53	138.9	55- 60	1484	21189	91.8,91.8
65	221.4	93.56	65.53	93.56	221.4	92.51	65.53	92.51	60- 65	852.4	22042	95.5,95.5
70	85.97	66.03	43.54	66.03	85.97	65.22	43.54	65.22	65- 70	476.1	22518	97.5,97.5
75	36.88	37.98	32.86	37.98	36.88	37.31	32.86	37.31	70- 75	277.1	22795	98.7,98.7
80	17.77	24.30	22.18	24.30	17.77	23.83	22.18	23.83	75- 80	165.4	22960	99.5,99.5
85	4.555	12.60	11.51	12.60	4.555	12.40	11.51	12.40	80- 85	91.75	23052	99.9,99.9
90	0.9228	0.9698	0.8285	0.9698	0.9228	1.083	0.8285	1.083	85- 90	33.12	23085	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): 15251 lm

%lum = 66.1%

%lamp = 66.1%

Conical surface Flux(120deg): 21189 lm

%lum = 91.8%

%lamp = 91.8%

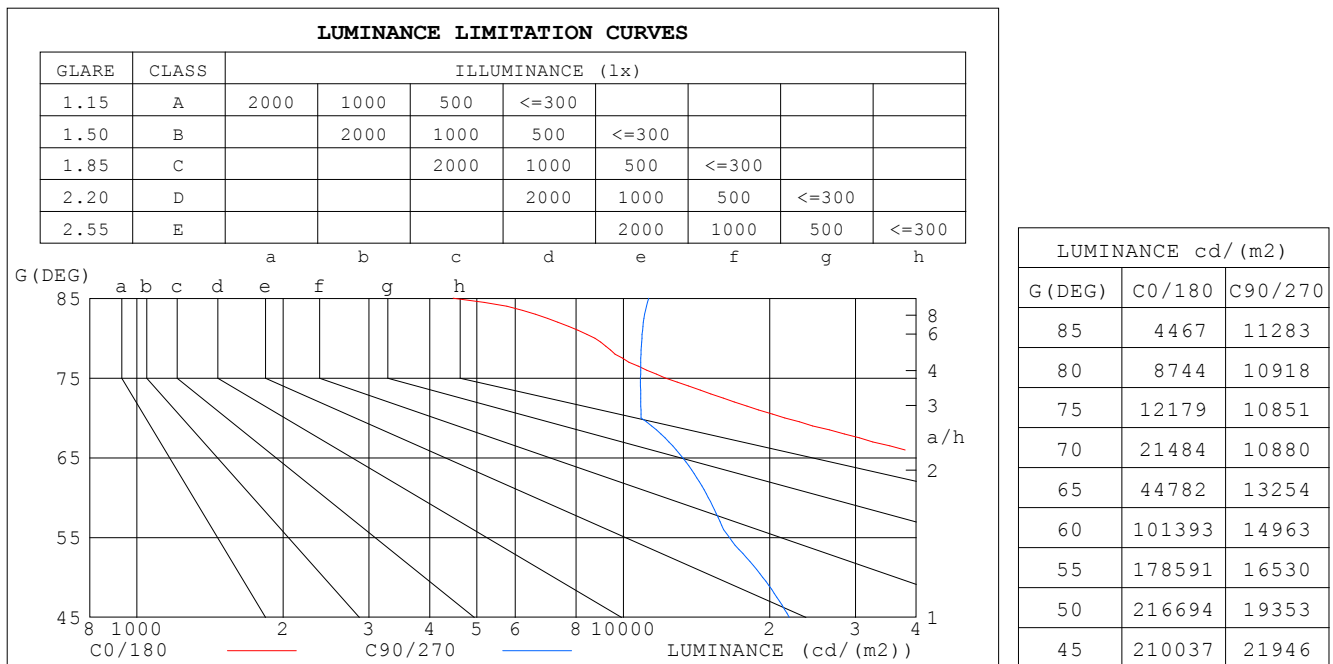
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

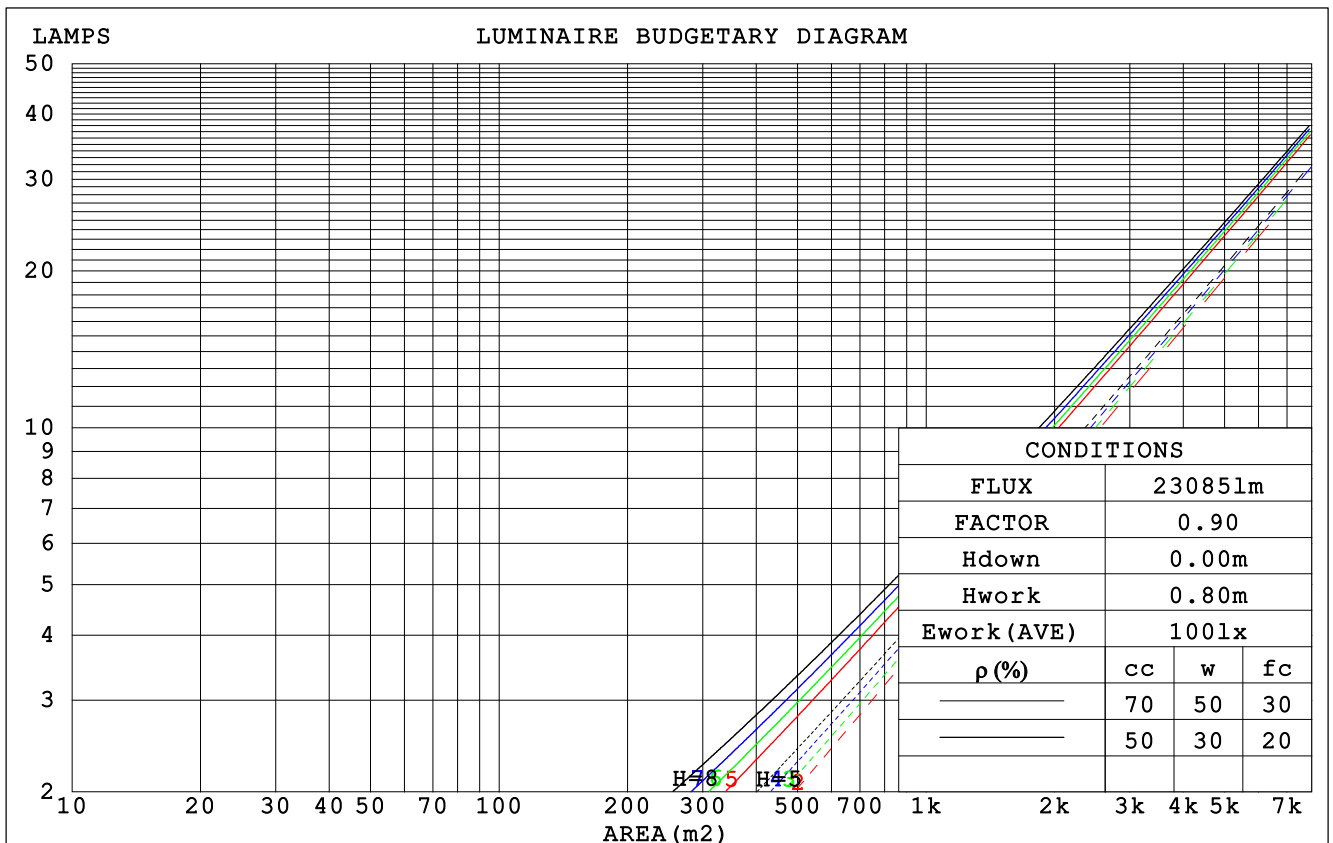
Checker:

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	1.07	1.04	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.90	.86	.82	.87	.84	.80	.84	.81	.79	.77
3.0	.86	.79	.73	.84	.78	.72	.81	.76	.71	.79	.74	.70	.76	.72	.69	.67
4.0	.77	.69	.63	.76	.69	.63	.73	.67	.62	.71	.66	.61	.69	.64	.61	.59
5.0	.70	.62	.56	.68	.61	.55	.66	.60	.55	.65	.59	.54	.63	.58	.54	.52
6.0	.63	.55	.49	.62	.55	.49	.61	.54	.49	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.49	.44	.56	.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: 2017-09-26

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	.249	.141	.045	.242	.138	.044	.229	.131	.042	.217	.125	.040	.206	.119	.039	
2.0	.242	.133	.041	.236	.130	.040	.225	.125	.039	.214	.120	.038	.205	.116	.037	
3.0	.230	.122	.037	.225	.120	.036	.215	.116	.035	.206	.113	.035	.197	.109	.034	
4.0	.217	.113	.033	.212	.111	.033	.204	.108	.032	.195	.105	.032	.188	.102	.031	
5.0	.204	.104	.030	.200	.103	.030	.192	.100	.029	.185	.098	.029	.178	.095	.029	
6.0	.192	.096	.028	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.181	.089	.025	.177	.088	.025	.171	.087	.025	.165	.085	.025	.160	.083	.024	
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	.176	.157	.139	.151	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016		
2.0	.166	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012		
3.0	.157	.114	.080	.134	.098	.069	.092	.068	.049	.053	.040	.029	.017	.013	.009		
4.0	.149	.100	.063	.128	.087	.055	.088	.060	.039	.051	.035	.023	.016	.012	.008		
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	.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:2017-09-26

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	31.2	32.5	31.4	32.7	32.9	19.7	21.1	20.0	21.3	21.5
3H	31.2	32.4	31.5	32.6	32.9	20.3	21.6	20.6	21.8	22.0
4H	31.1	32.3	31.4	32.5	32.8	20.6	21.8	20.9	22.0	22.3
6H	31.0	32.1	31.4	32.4	32.7	20.9	22.0	21.2	22.2	22.5
8H	31.0	32.0	31.3	32.3	32.6	21.0	22.1	21.3	22.3	22.6
12H	30.9	32.0	31.3	32.2	32.5	21.1	22.1	21.4	22.4	22.7
4H 2H	30.9	32.1	31.2	32.3	32.6	21.0	22.2	21.3	22.5	22.7
3H	31.0	32.0	31.3	32.3	32.6	21.7	22.7	22.0	23.0	23.2
4H	31.0	31.9	31.3	32.2	32.5	22.0	22.9	22.3	23.2	23.5
6H	30.9	31.7	31.3	32.1	32.4	22.3	23.1	22.7	23.4	23.8
8H	30.9	31.6	31.3	32.0	32.4	22.4	23.2	22.8	23.5	23.9
12H	30.8	31.5	31.3	31.9	32.3	22.5	23.2	22.9	23.6	24.0
8H 4H	30.8	31.6	31.2	31.9	32.3	22.2	22.9	22.6	23.3	23.7
6H	30.8	31.4	31.2	31.8	32.2	22.6	23.2	23.1	23.6	24.1
8H	30.8	31.3	31.2	31.7	32.2	22.8	23.4	23.3	23.8	24.2
12H	30.8	31.2	31.2	31.7	32.1	23.0	23.5	23.5	23.9	24.4
12H 4H	30.8	31.5	31.2	31.9	32.3	22.2	22.9	22.6	23.3	23.7
6H	30.8	31.3	31.2	31.7	32.2	22.7	23.2	23.1	23.6	24.1
8H	30.8	31.2	31.2	31.7	32.1	22.9	23.4	23.4	23.8	24.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 1.3					+ 0.7 / - 0.9				
1.5H	+ 3.2 / - 5.5					+ 0.6 / - 0.7				
2.0H	+ 4.2 / - 7.5					+ 0.7 / - 0.8				

CIE Pub.117 Corrected 23085 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.9)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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) $k(RI) \times RCR = 5$									
$k = 0.60$	63	53	46	62	52	46	61	52	46	40
0.80	74	64	57	73	63	57	71	62	56	50
1.00	83	73	67	81	73	67	79	73	66	60
1.25	89	81	75	88	80	74	86	79	74	67
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	88	98	92	87	95	90	86	79
2.50	103	97	92	101	95	91	98	93	89	82
3.00	106	100	96	104	99	95	100	96	93	85
4.00	109	104	101	107	103	99	103	99	97	88
5.00	111	107	104	108	105	102	104	101	99	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

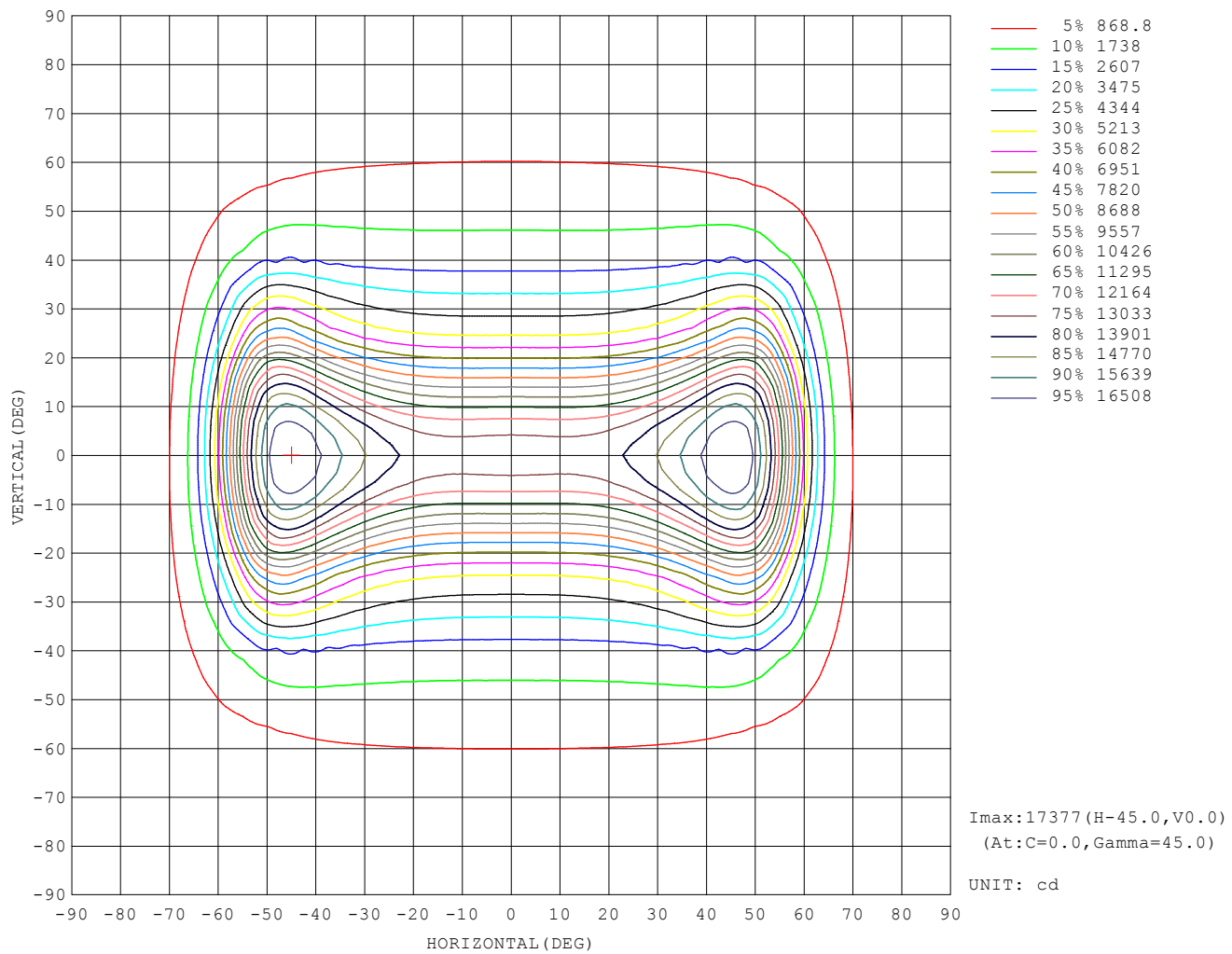
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



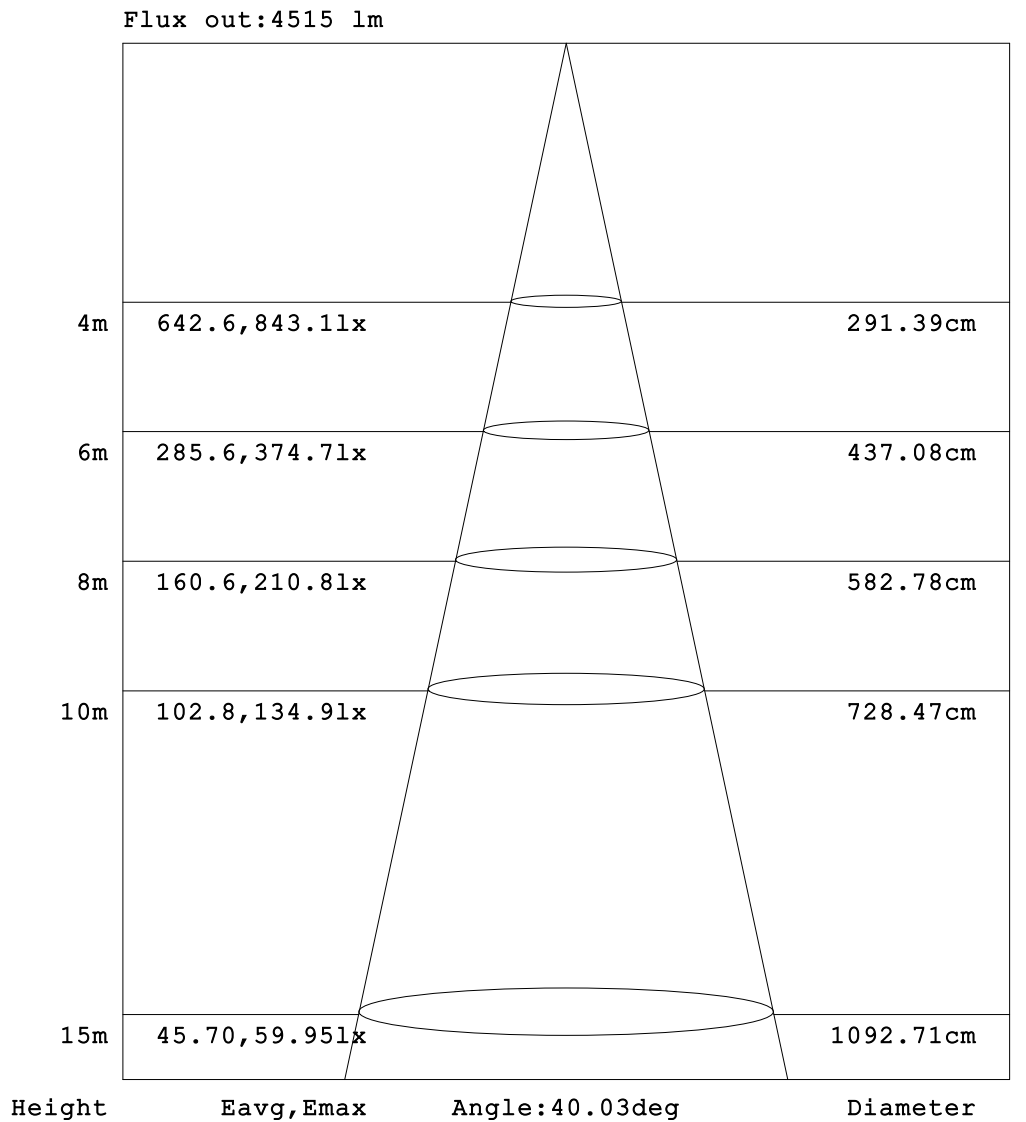
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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.

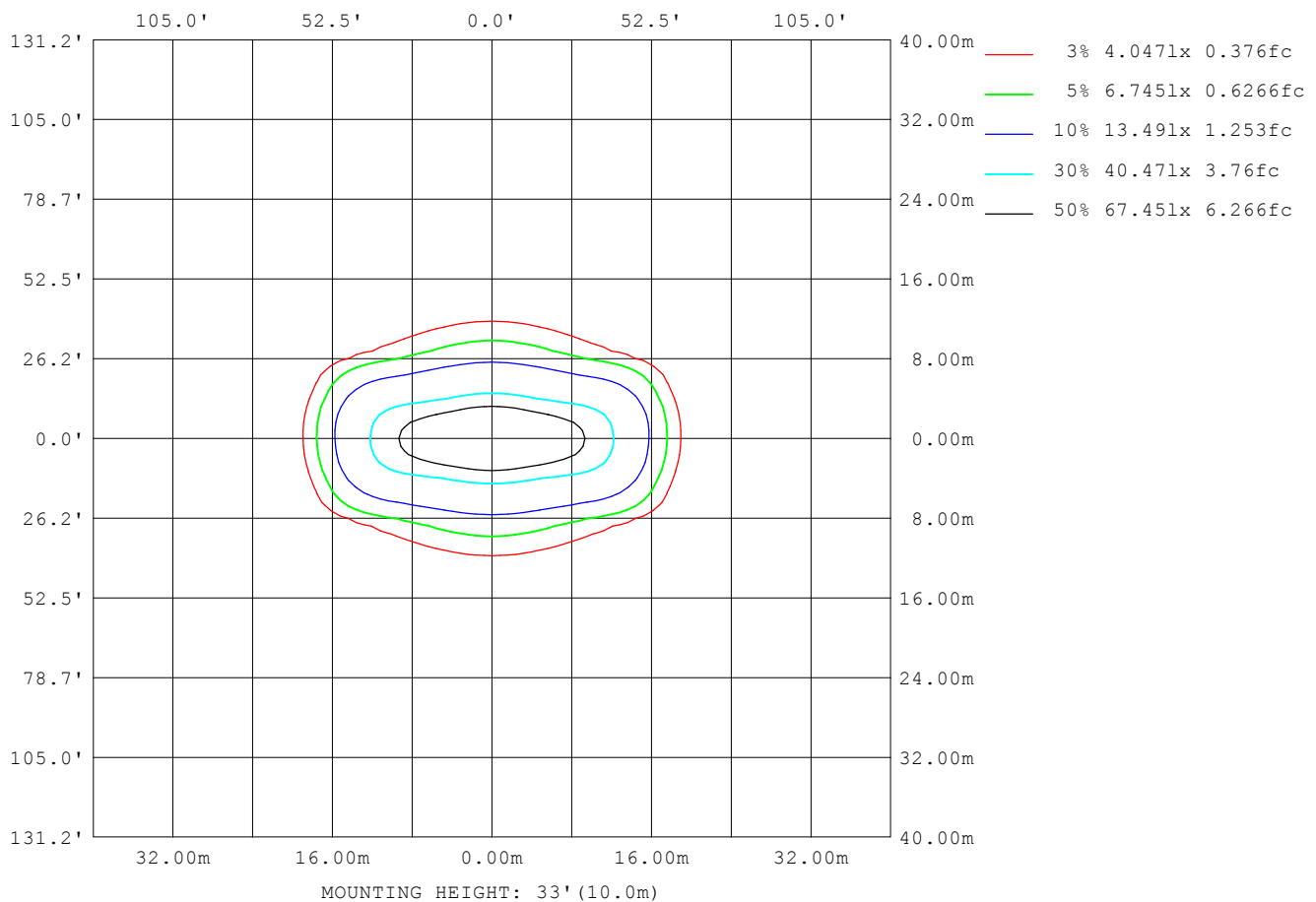
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



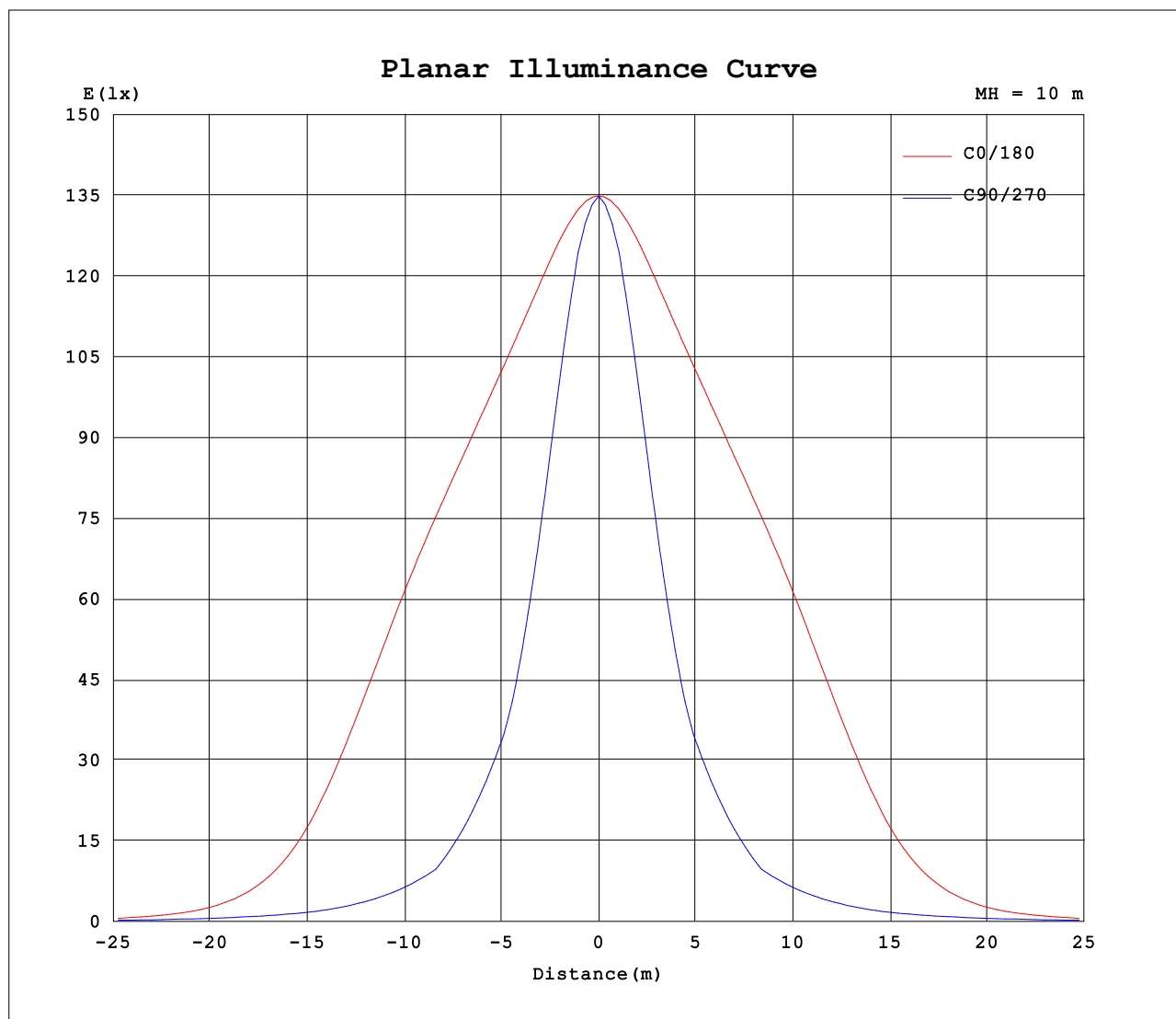
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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: 2017-09-26

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: