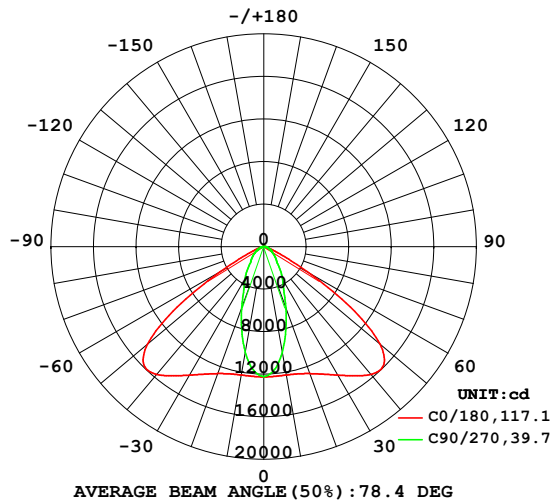


LUMINAIRE PHOTOMETRIC TEST REPORT

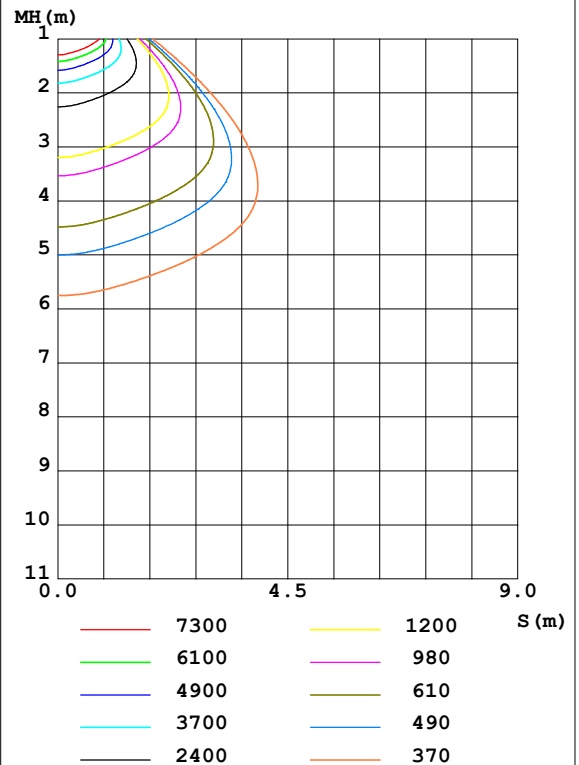
Test:U:230.0V I:0.6542A P:148.9W PF:0.9902 Lamp Flux:20733.7x1 lm		
NAME: LHB01-150H	TYPE:150W	WEIGHT:
SPEC.:5000K Ra80 L06404	DIM.: 1.178*0.137*0.102	SERIAL No.:
MFR.:	SUR.:1.17*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 139.21 lm/W			
MODEL	LHB01-150H	Imax(cd)	15954	S/MH(C0/180)	1.80
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	0.63
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	20734	η UP,DN(C0-180)	0.0,50.2
NOMINAL FLUX(lm)	20733.7	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.8
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	1224	1188	1162	1188	1224	1188	1162	1188	0- 5	288.0	288.0	1.39,1.39
10	1226	1107	1008	1107	1226	1106	1008	1106	5- 10	822.3	1110	5.36,5.36
15	1239	985.6	807.9	985.6	1239	982.2	807.9	982.2	10- 15	1251	2361	11.4,11.4
20	1270	847.2	607.7	847.2	1270	841.9	607.7	841.9	15- 20	1555	3916	18.9,18.9
25	1323	704.5	446.9	704.5	1323	697.6	446.9	697.6	20- 25	1756	5673	27.4,27.4
30	1395	568.4	357.4	568.4	1395	559.9	357.4	559.9	25- 30	1901	7574	36.5,36.5
35	1483	458.7	276.1	458.7	1483	450.7	276.1	450.7	30- 35	2031	9605	46.3,46.3
40	1568	387.7	194.8	387.7	1568	380.8	194.8	380.8	35- 40	2124	11729	56.6,56.6
45	1588	304.4	163.6	304.4	1588	299.7	163.6	299.7	40- 45	2167	13896	67,67
50	1427	206.1	132.5	206.1	1427	204.8	132.5	204.8	45- 50	2110	16006	77.2,77.2
55	996.1	168.7	102.5	168.7	996.1	167.8	102.5	167.8	50- 55	1812	17819	85.9,85.9
60	472.5	125.5	81.67	125.5	472.5	125.1	81.67	125.1	55- 60	1248	19066	92,92
65	180.4	83.99	62.01	83.99	180.4	83.96	62.01	83.96	60- 65	719.3	19786	95.4,95.4
70	74.60	60.24	42.34	60.24	74.60	60.05	42.34	60.05	65- 70	418.1	20204	97.4,97.4
75	34.31	36.26	31.94	36.26	34.31	35.89	31.94	35.89	70- 75	253.8	20458	98.7,98.7
80	17.10	23.44	21.54	23.44	17.10	23.15	21.54	23.15	75- 80	156.4	20614	99.4,99.4
85	4.630	12.12	11.14	12.12	4.630	12.00	11.14	12.00	80- 85	88.06	20702	99.8,99.8
90	0.7813	0.8450	0.7405	0.8450	0.7813	0.9432	0.7405	0.9432	85- 90	31.60	20734	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): 13896 lm

%lum = 67.0%

%lamp = 67.0%

Conical surface Flux(120deg): 19066 lm

%lum = 92.0%

%lamp = 92.0%

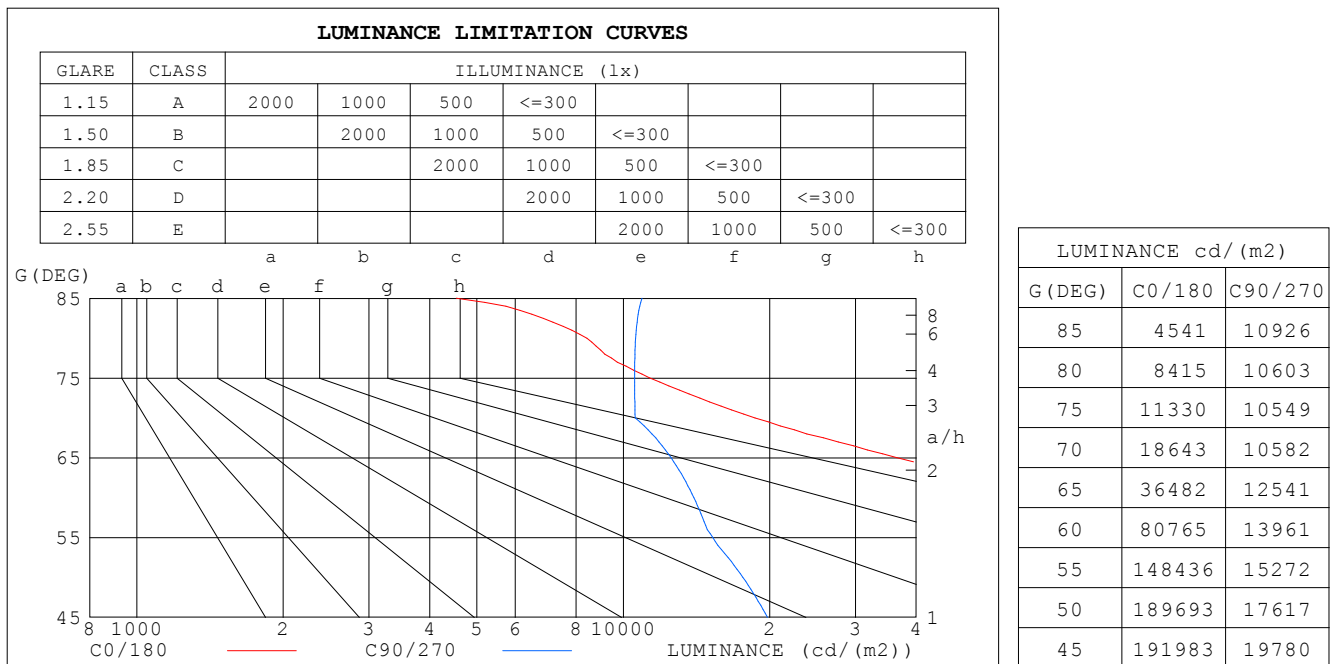
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-09-26

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:

LUMINANCE LIMITATION CURVES



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

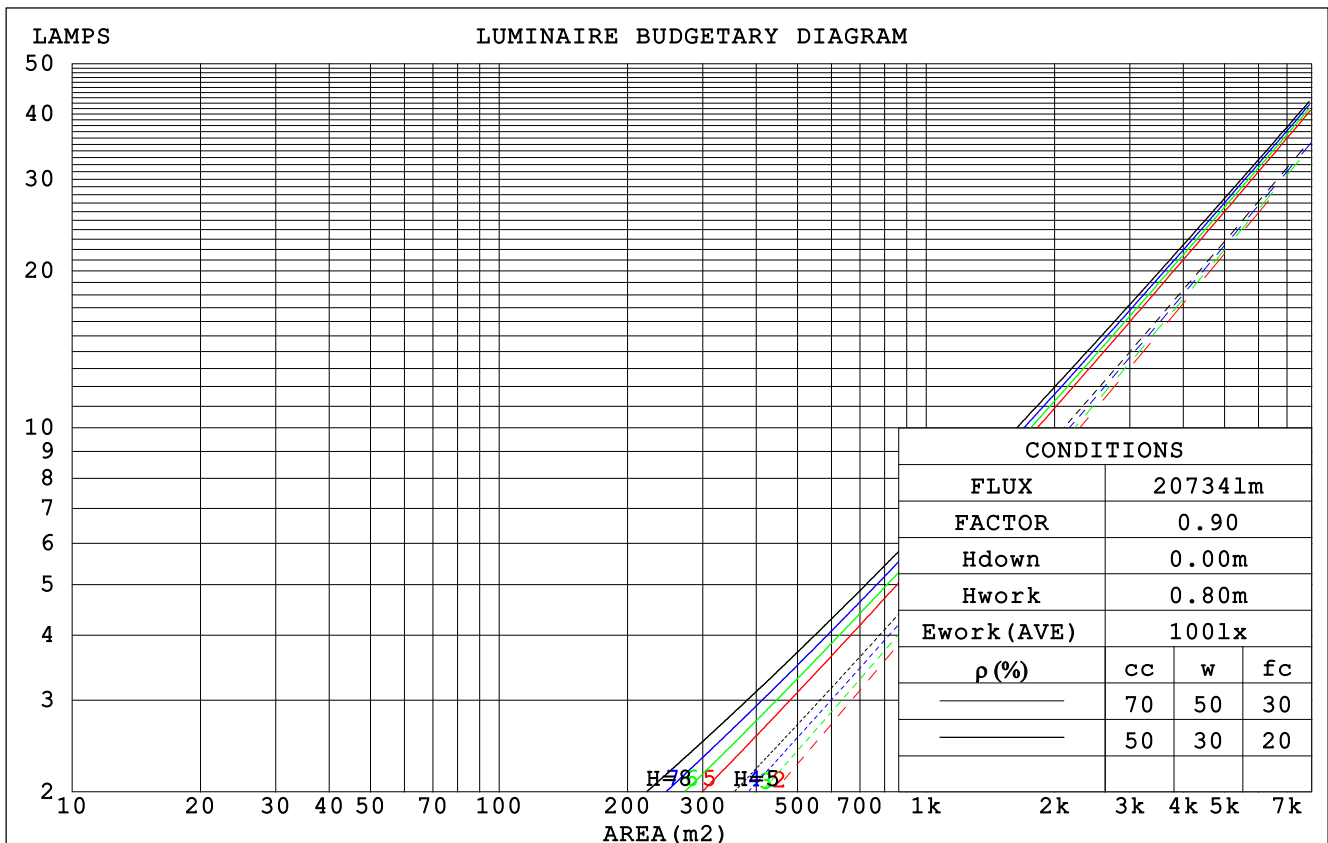
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.91	.86	.82	.87	.84	.81	.84	.81	.79	.77
3.0	.86	.79	.73	.84	.78	.73	.81	.76	.71	.79	.74	.70	.76	.72	.69	.67
4.0	.77	.70	.64	.76	.69	.63	.74	.67	.62	.71	.66	.62	.69	.65	.61	.59
5.0	.70	.62	.56	.69	.61	.56	.67	.60	.55	.65	.59	.55	.63	.58	.54	.52
6.0	.64	.55	.50	.63	.55	.49	.61	.54	.49	.59	.53	.49	.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	.51	.45	.40	.50	.44	.40	.49	.44	.39	.38
9.0	.49	.42	.37	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.36	.34
10.0	.46	.38	.33	.45	.38	.33	.44	.38	.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	.248	.141	.045	.241	.137	.044	.228	.131	.042	.216	.125	.040	.205	.119	.038	
2.0	.241	.132	.040	.235	.129	.040	.223	.124	.039	.213	.120	.037	.204	.115	.036	
3.0	.229	.122	.036	.223	.120	.036	.214	.116	.035	.204	.112	.034	.196	.109	.034	
4.0	.216	.112	.033	.211	.110	.033	.202	.107	.032	.194	.104	.031	.187	.101	.031	
5.0	.203	.103	.030	.199	.102	.030	.191	.100	.029	.184	.097	.029	.177	.095	.028	
6.0	.191	.096	.027	.187	.095	.027	.180	.092	.027	.174	.090	.027	.168	.088	.026	
7.0	.180	.089	.025	.177	.088	.025	.170	.086	.025	.165	.084	.025	.159	.083	.024	
8.0	.170	.083	.023	.167	.082	.023	.161	.081	.023	.156	.079	.023	.151	.078	.023	
9.0	.160	.078	.022	.158	.077	.022	.153	.075	.021	.148	.074	.021	.144	.073	.021	
10.0	.152	.073	.020	.149	.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	.165	.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	.141	.089	.051	.121	.077	.045	.084	.054	.031	.048	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.046	.029	.016	.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	.101	.055	.023	.070	.038	.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	30.5	31.8	30.7	32.0	32.2	19.4	20.7	19.7	20.9	21.1
3H	30.5	31.7	30.8	31.9	32.2	20.1	21.3	20.4	21.6	21.8
4H	30.4	31.6	30.7	31.8	32.1	20.4	21.6	20.7	21.8	22.1
6H	30.4	31.4	30.7	31.7	32.0	20.7	21.8	21.1	22.1	22.4
8H	30.3	31.4	30.6	31.6	31.9	20.9	21.9	21.2	22.2	22.5
12H	30.3	31.3	30.6	31.6	31.8	21.0	22.0	21.3	22.2	22.5
4H 2H	30.2	31.4	30.5	31.6	31.9	20.6	21.8	20.9	22.0	22.3
3H	30.3	31.3	30.6	31.6	31.9	21.3	22.3	21.7	22.6	22.9
4H	30.3	31.2	30.6	31.5	31.8	21.7	22.6	22.0	22.9	23.2
6H	30.2	31.0	30.6	31.4	31.7	22.0	22.8	22.4	23.2	23.5
8H	30.2	30.9	30.6	31.3	31.7	22.2	22.9	22.6	23.3	23.7
12H	30.2	30.8	30.6	31.2	31.6	22.3	23.0	22.8	23.4	23.8
8H 4H	30.2	30.9	30.6	31.3	31.6	21.9	22.7	22.3	23.0	23.4
6H	30.1	30.7	30.6	31.1	31.6	22.4	23.0	22.9	23.4	23.8
8H	30.1	30.7	30.6	31.1	31.5	22.7	23.2	23.1	23.6	24.1
12H	30.1	30.6	30.6	31.0	31.5	22.9	23.3	23.3	23.8	24.2
12H 4H	30.1	30.8	30.5	31.2	31.6	21.9	22.6	22.4	23.0	23.4
6H	30.1	30.6	30.6	31.1	31.5	22.5	23.0	22.9	23.4	23.9
8H	30.1	30.6	30.6	31.0	31.5	22.8	23.2	23.2	23.7	24.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 1.4					+ 0.6 / - 0.8				
1.5H	+ 3.1 / - 5.6					+ 0.5 / - 0.6				
2.0H	+ 4.3 / - 7.3					+ 0.6 / - 0.7				

CIE Pub.117 Corrected 20734 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.5)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	64	53	47	63	53	47	62	52	47	41
0.80	74	64	58	73	64	57	72	63	57	51
1.00	83	74	67	82	73	67	80	74	67	60
1.25	90	81	75	88	80	75	86	79	74	68
1.50	94	86	81	93	85	80	90	84	79	73
2.00	100	93	88	99	92	87	95	90	86	79
2.50	103	97	92	101	96	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	109	105	102	104	101	99	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

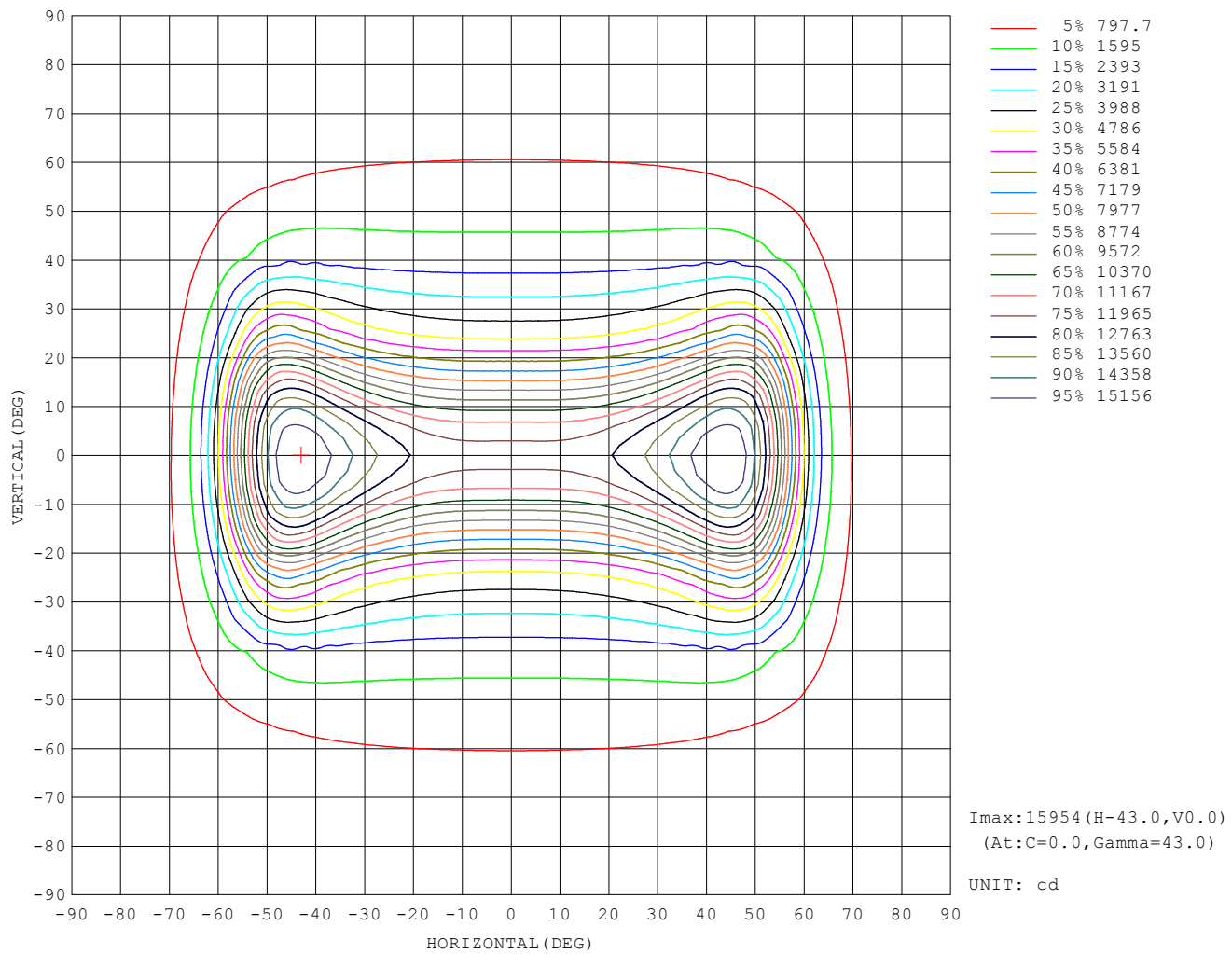
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



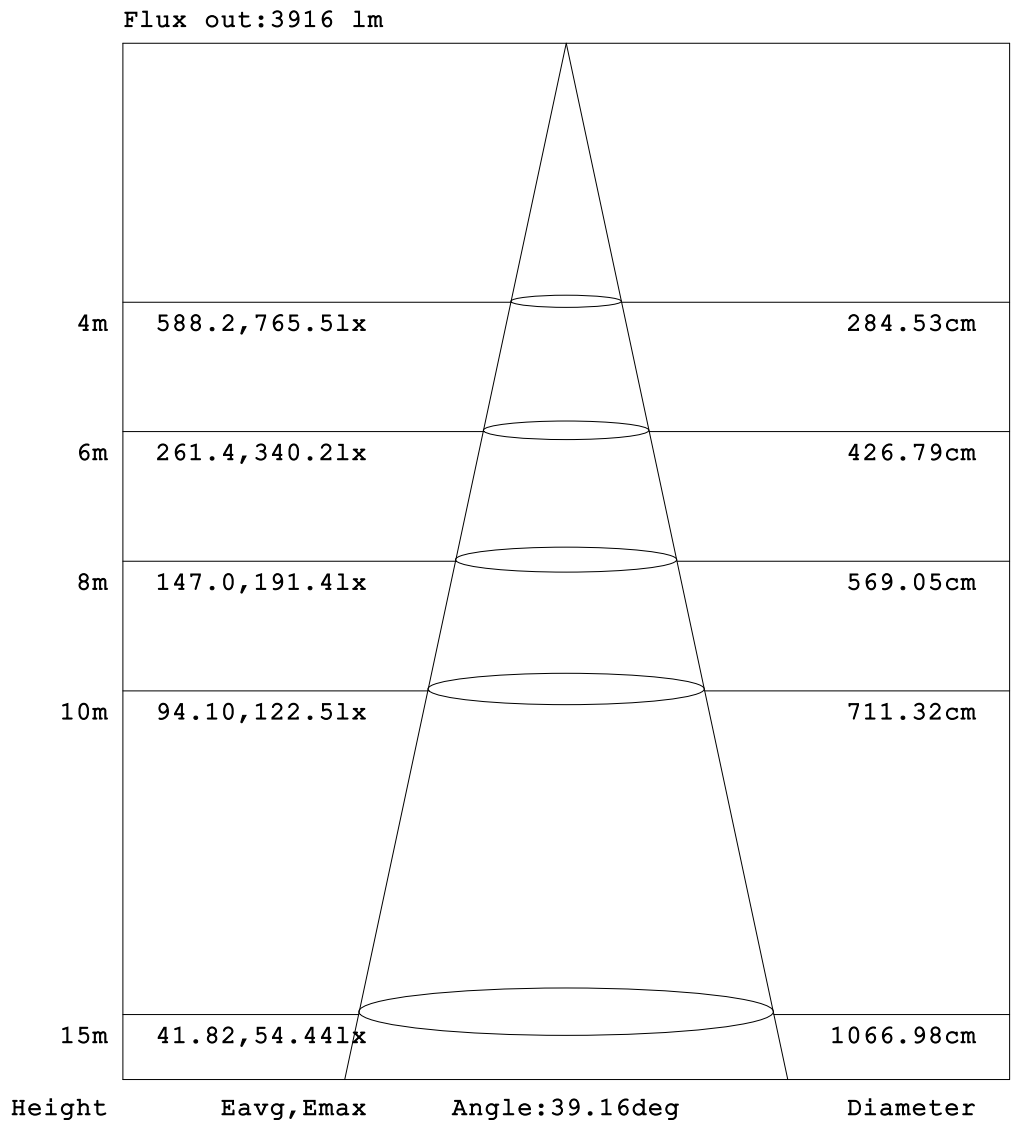
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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.

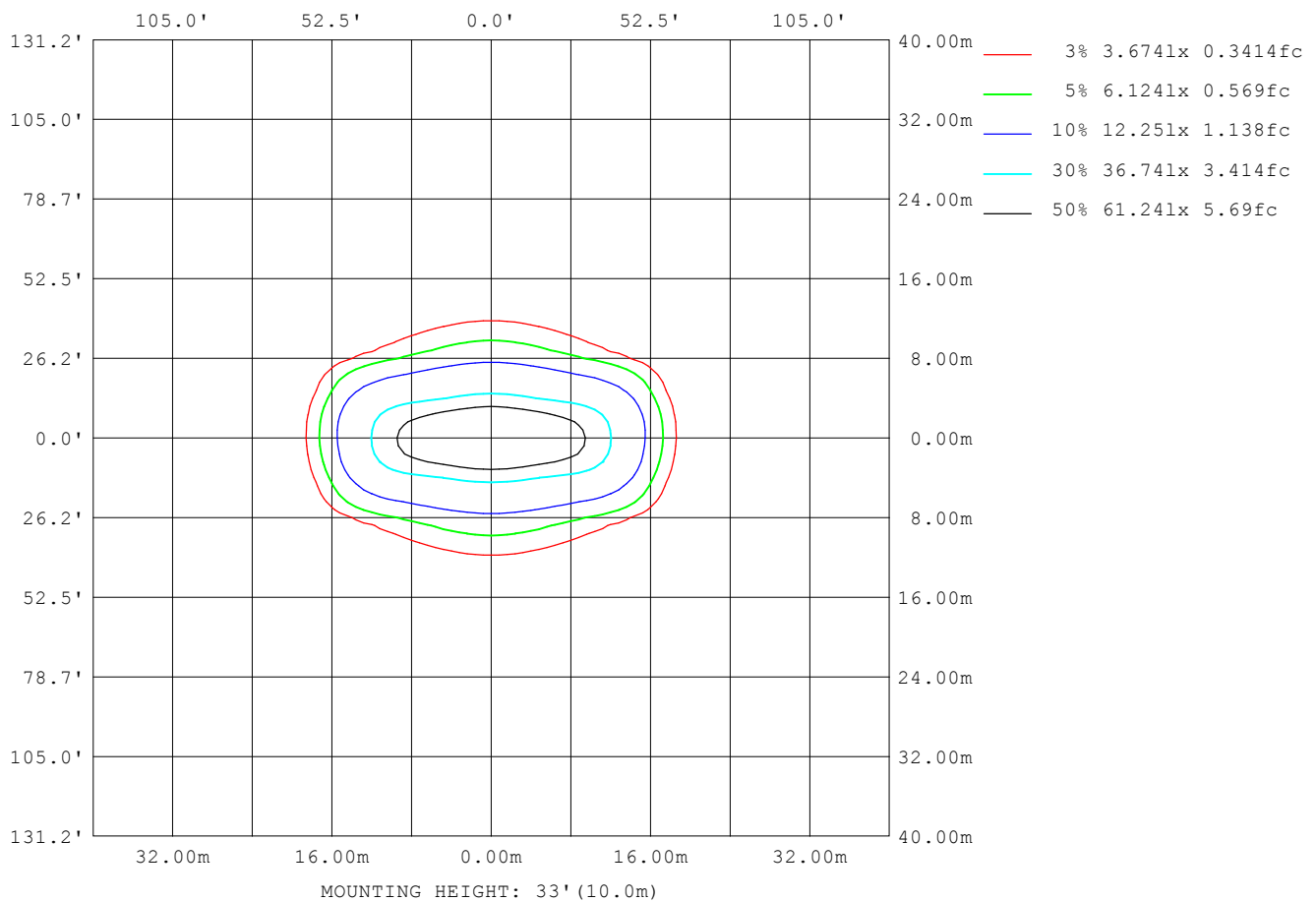
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



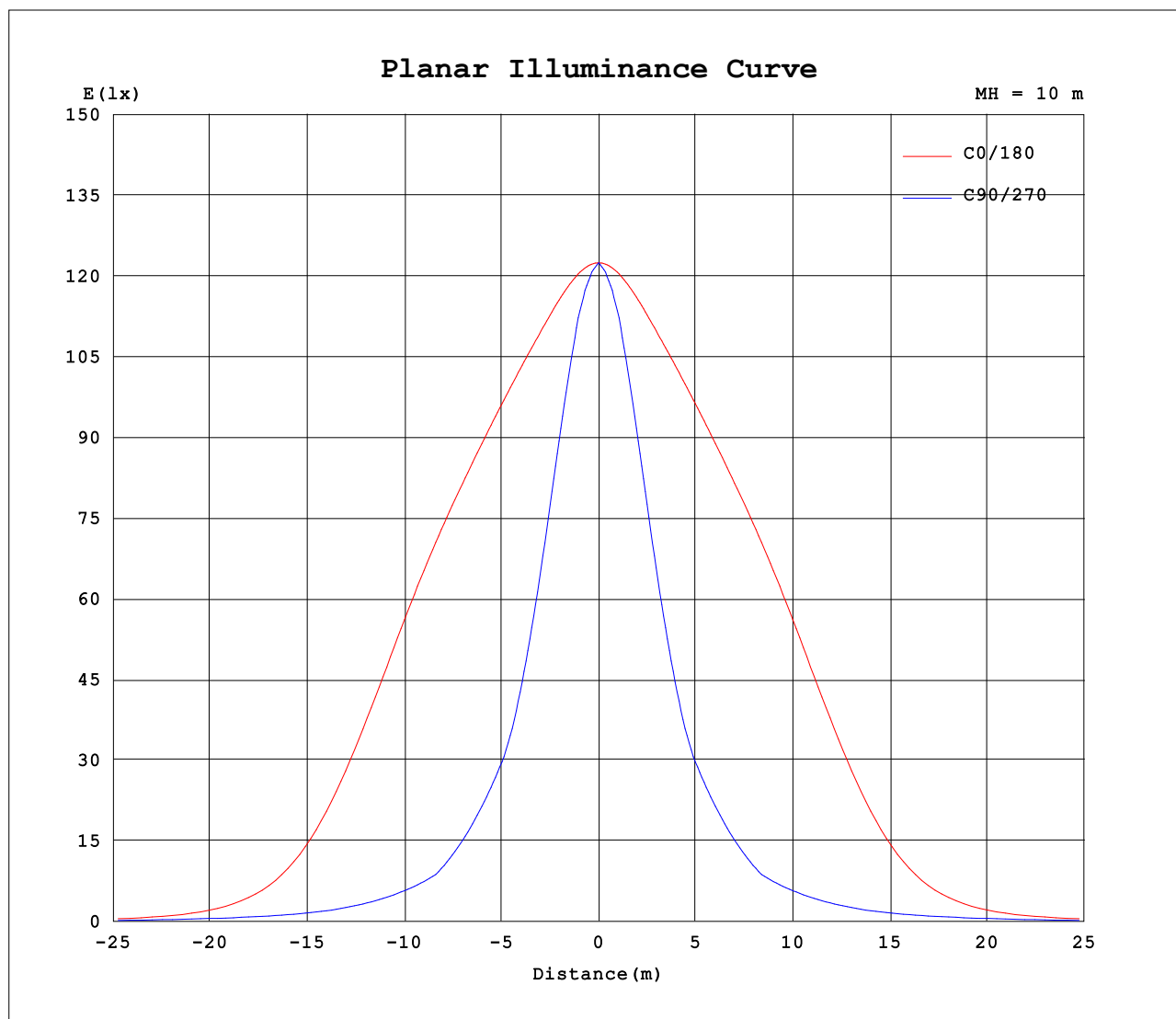
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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:

Assessor: