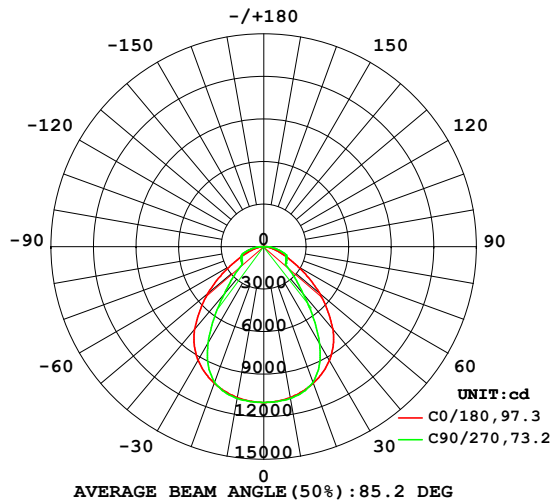


LUMINAIRE PHOTOMETRIC TEST REPORT

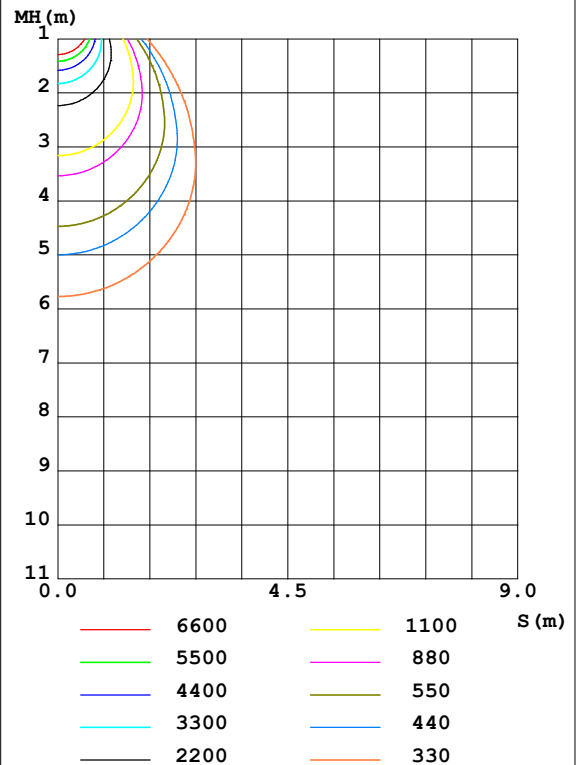
Test:U:230.0V I:0.8223A P:182.6W PF:0.9656 Lamp Flux:22185.3x1 lm		
NAME: LHB03-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra80 80100DEG L00303	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.49 lm/W			
MODEL	LHB03-180	I _{max} (cd)	10990	S/MH(C0/180)	1.25
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	1.07
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	22185	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	22185.3	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	1.30

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	1094	1095	1096	1095	1094	1095	1096	1095	0- 5	262.2	262.2	1.18,1.18
10	1080	1083	1088	1083	1080	1083	1088	1083	5- 10	779.3	1041	4.69,4.69
15	1057	1063	1063	1063	1057	1063	1063	1063	10- 15	1272	2314	10.4,10.4
20	1024	1029	1019	1029	1024	1028	1019	1028	15- 20	1719	4033	18.2,18.2
25	981.4	975.2	926.5	975.2	981.4	973.9	926.5	973.9	20- 25	2087	6121	27.6,27.6
30	926.4	896.7	787.9	896.7	926.4	894.6	787.9	894.6	25- 30	2333	8454	38.1,38.1
35	855.1	791.8	609.3	791.8	855.1	788.8	609.3	788.8	30- 35	2412	10865	49,49
40	758.3	657.4	431.5	657.4	758.3	654.4	431.5	654.4	35- 40	2306	13172	59.4,59.4
45	637.1	509.3	309.8	509.3	637.1	507.2	309.8	507.2	40- 45	2047	15219	68.6,68.6
50	515.6	367.3	200.4	367.3	515.6	366.7	200.4	366.7	45- 50	1711	16930	76.3,76.3
55	391.2	259.0	192.1	259.0	391.2	258.3	192.1	258.3	50- 55	1366	18296	82.5,82.5
60	274.1	174.6	183.8	174.6	274.1	173.9	183.8	173.9	55- 60	1100	19396	87.4,87.4
65	184.8	139.8	175.4	139.8	184.8	139.2	175.4	139.2	60- 65	884.4	20280	91.4,91.4
70	120.9	103.2	167.1	103.2	120.9	102.8	167.1	102.8	65- 70	709.3	20990	94.6,94.6
75	76.92	65.97	125.7	65.97	76.92	65.75	125.7	65.75	70- 75	540.8	21531	97,97
80	44.14	42.84	84.24	42.84	44.14	42.69	84.24	42.69	75- 80	368.0	21899	98.7,98.7
85	15.58	22.21	42.81	22.21	15.58	22.09	42.81	22.09	80- 85	213.6	22112	99.7,99.7
90	0.6217	1.908	1.371	1.908	0.6217	1.830	1.371	1.830	85- 90	73.20	22185	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): 15219 lm

%lum = 68.6%

%lamp = 68.6%

Conical surface Flux(120deg): 19396 lm

%lum = 87.4%

%lamp = 87.4%

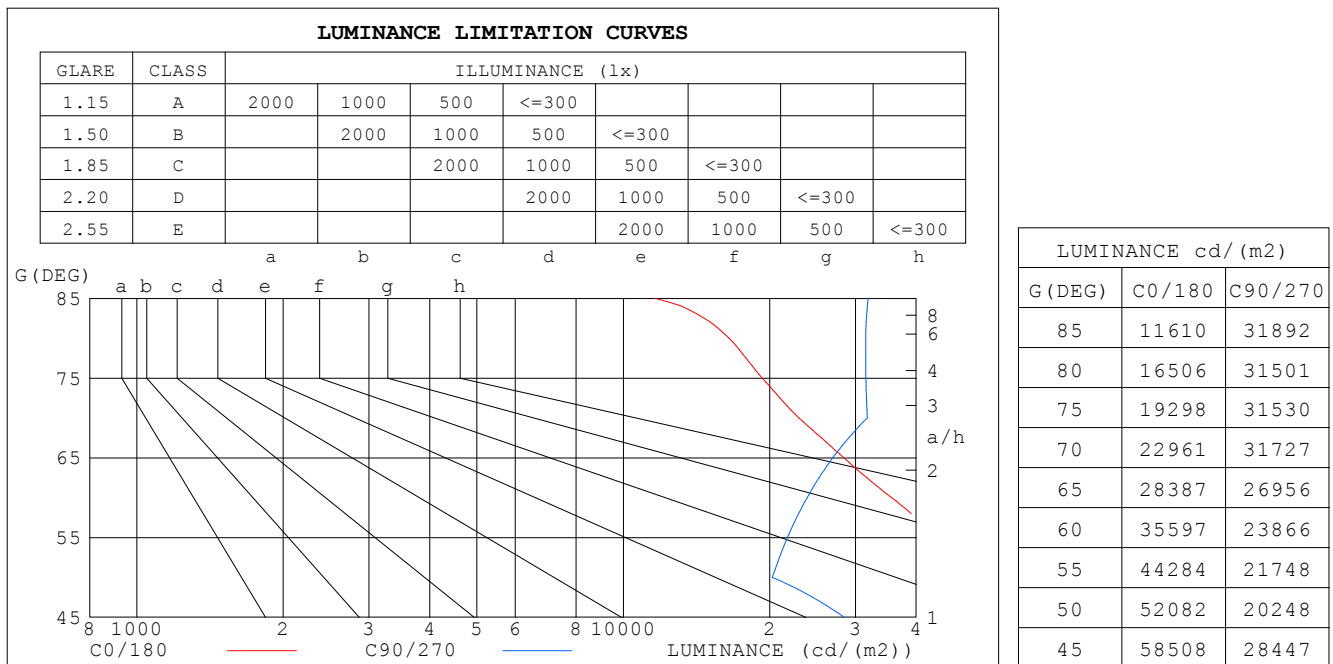
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

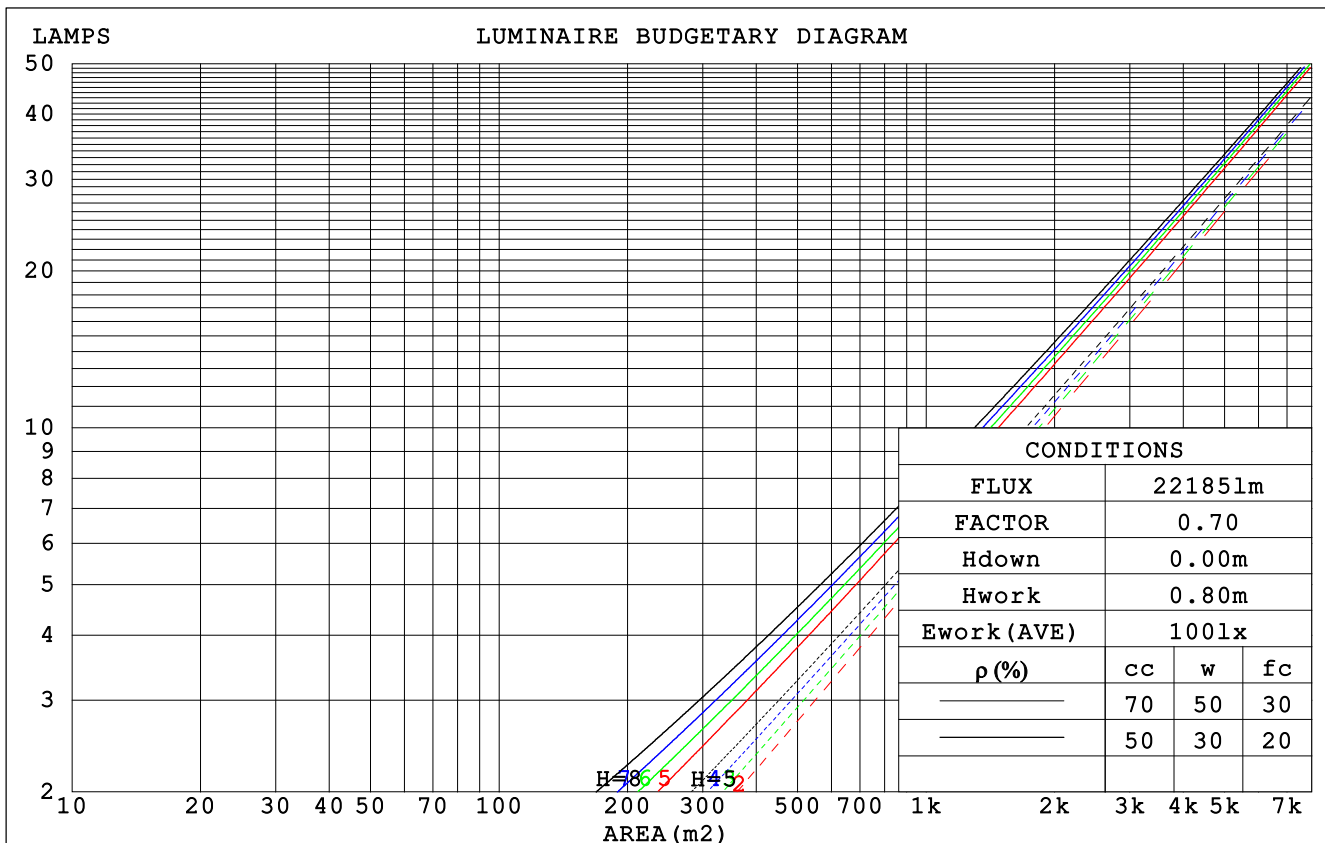
Checker:

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
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	1.06	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	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.69	.63	.75	.68	.62	.73	.66	.61	.71	.65	.61	.68	.64	.60	.58
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.54	.64	.58	.54	.63	.57	.53	.51
6.0	.63	.55	.49	.62	.55	.49	.61	.54	.49	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.50	.44	.56	.49	.44	.54	.48	.44	.53	.47	.43	.41
8.0	.53	.45	.40	.53	.45	.40	.51	.45	.40	.50	.44	.40	.49	.43	.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	.43	.37	.33	.31



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	.265	.151	.048	.258	.147	.047	.245	.140	.045	.233	.134	.043	.222	.128	.041	
2.0	.251	.138	.042	.245	.135	.042	.234	.130	.040	.223	.125	.039	.214	.121	.038	
3.0	.235	.125	.037	.230	.123	.037	.220	.119	.036	.211	.115	.035	.202	.112	.035	
4.0	.219	.114	.034	.215	.112	.033	.206	.109	.033	.198	.106	.032	.190	.103	.032	
5.0	.205	.104	.030	.201	.103	.030	.193	.101	.030	.186	.098	.029	.179	.096	.029	
6.0	.192	.096	.028	.188	.095	.027	.182	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.180	.089	.025	.177	.088	.025	.171	.086	.025	.165	.085	.025	.160	.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	.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	.150	.100	.063	.128	.087	.055	.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	.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	.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:2017-07-03

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	25.5	26.9	25.8	27.1	27.3	22.6	24.0	22.9	24.1	24.3
3H	26.1	27.4	26.4	27.6	27.8	24.5	25.8	24.8	26.0	26.2
4H	26.3	27.5	26.6	27.8	28.0	25.5	26.7	25.8	26.9	27.2
6H	26.5	27.6	26.8	27.8	28.1	26.3	27.4	26.6	27.7	28.0
8H	26.5	27.5	26.8	27.8	28.1	26.6	27.7	27.0	28.0	28.2
12H	26.5	27.5	26.8	27.8	28.1	26.9	27.9	27.2	28.2	28.5
4H 2H	25.6	26.7	25.9	27.0	27.2	23.1	24.3	23.4	24.5	24.8
3H	26.3	27.4	26.7	27.7	27.9	25.1	26.1	25.5	26.4	26.7
4H	26.7	27.6	27.0	27.9	28.2	26.2	27.2	26.6	27.5	27.8
6H	26.9	27.7	27.3	28.0	28.4	27.2	28.0	27.6	28.4	28.7
8H	26.9	27.7	27.3	28.1	28.4	27.6	28.4	28.0	28.7	29.1
12H	26.9	27.6	27.4	28.0	28.4	27.9	28.6	28.3	29.0	29.4
8H 4H	26.7	27.5	27.1	27.9	28.2	26.3	27.1	26.7	27.5	27.8
6H	27.0	27.7	27.5	28.1	28.5	27.4	28.1	27.9	28.5	28.9
8H	27.2	27.7	27.6	28.1	28.6	27.9	28.5	28.4	28.9	29.4
12H	27.2	27.7	27.7	28.1	28.6	28.4	28.9	28.9	29.3	29.8
12H 4H	26.7	27.4	27.1	27.8	28.2	26.3	27.0	26.7	27.4	27.8
6H	27.1	27.6	27.5	28.1	28.5	27.4	28.0	27.9	28.4	28.9
8H	27.2	27.7	27.7	28.1	28.6	28.0	28.5	28.5	28.9	29.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.5					+ 0.4 / - 0.4				
1.5H	+ 0.4 / - 0.7					+ 0.3 / - 0.4				
2.0H	+ 1.3 / - 1.5					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 22185 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.8)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	66	56	50	65	56	50	44
0.80	76	66	60	75	66	60	73	65	59	53
1.00	83	74	68	82	74	68	80	75	67	61
1.25	90	81	75	88	80	75	86	79	74	68
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	87	98	91	87	95	89	85	78
2.50	103	96	91	101	95	90	97	92	89	81
3.00	105	100	95	103	98	94	100	95	92	84
4.00	109	104	100	106	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		

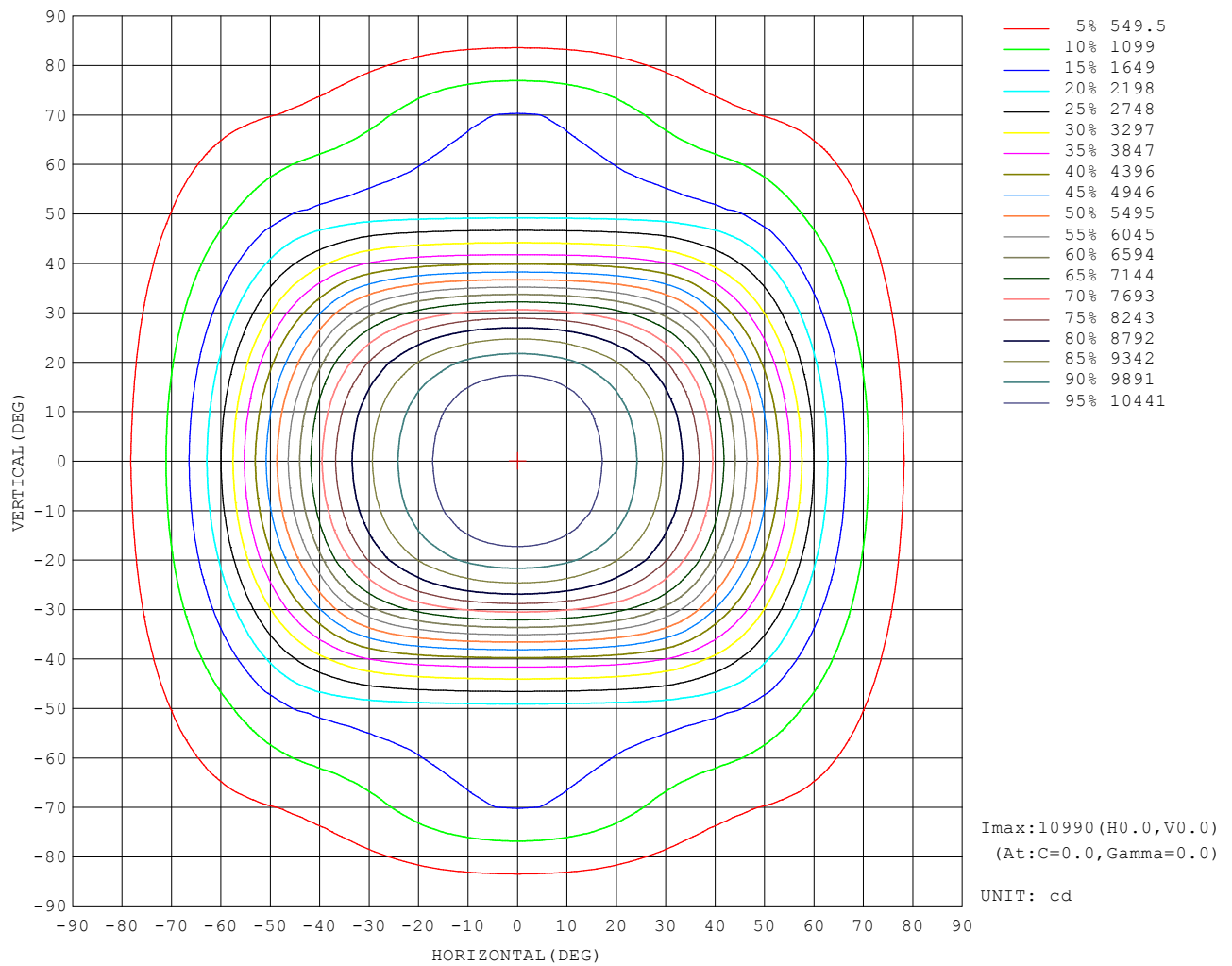
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



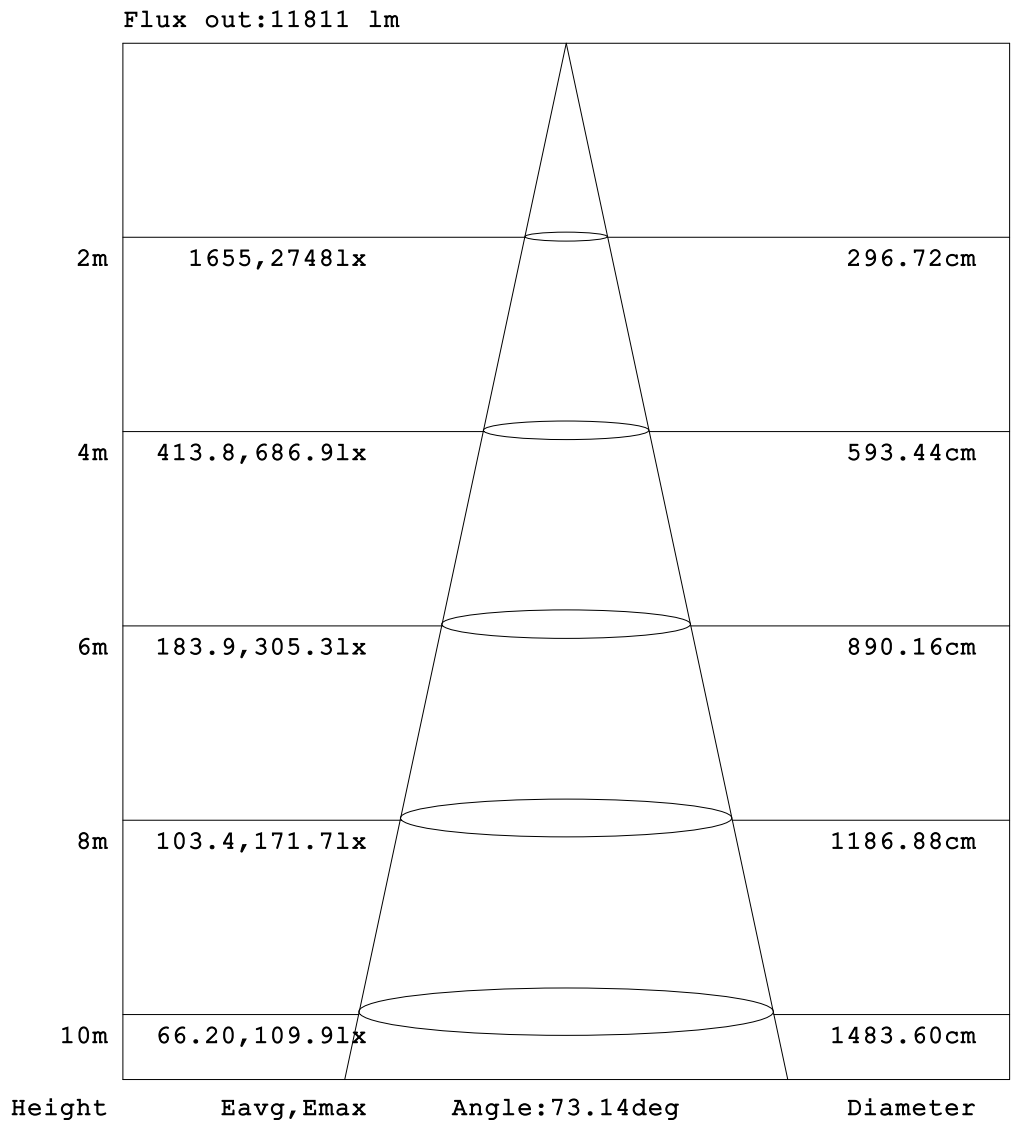
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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.

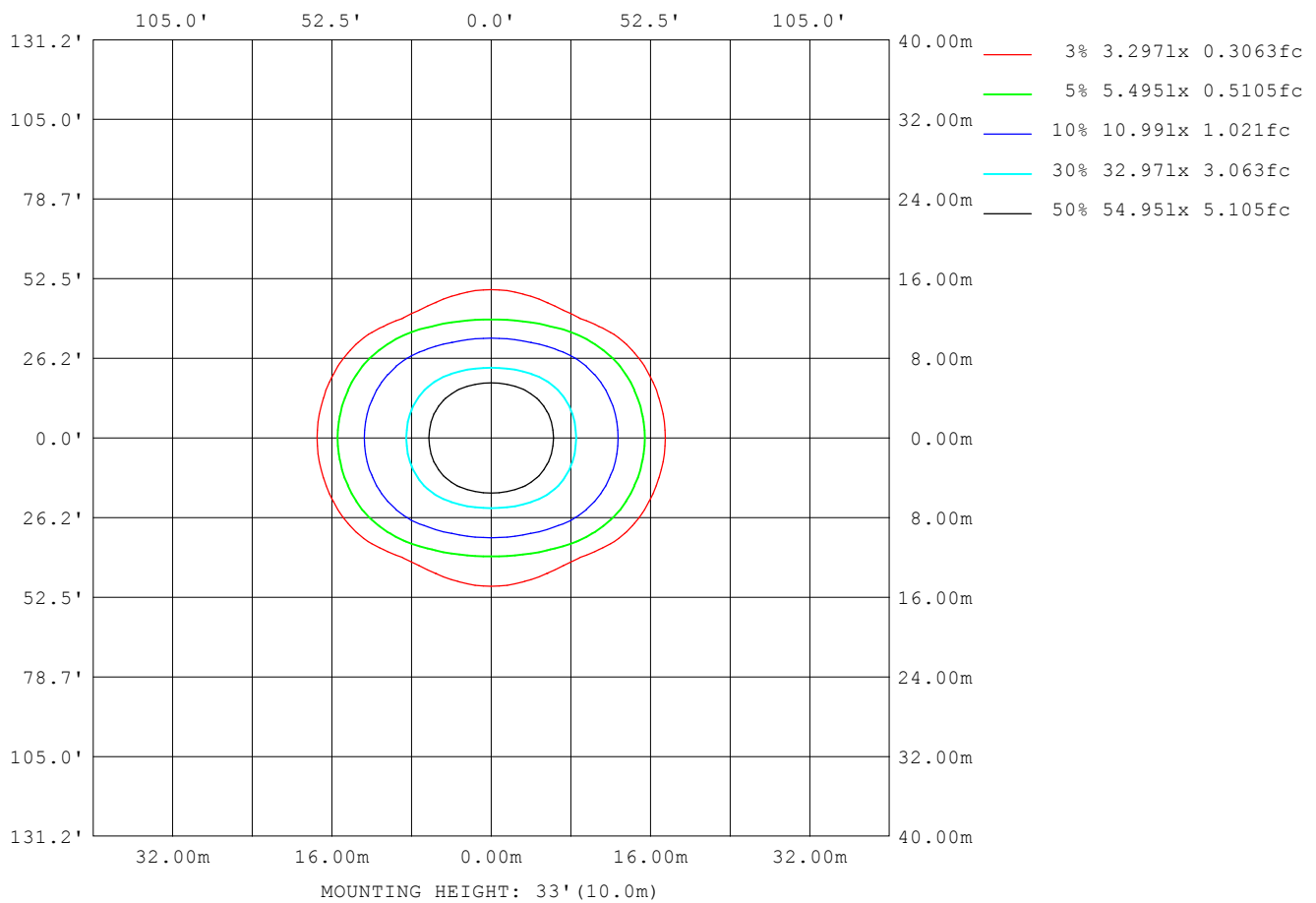
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



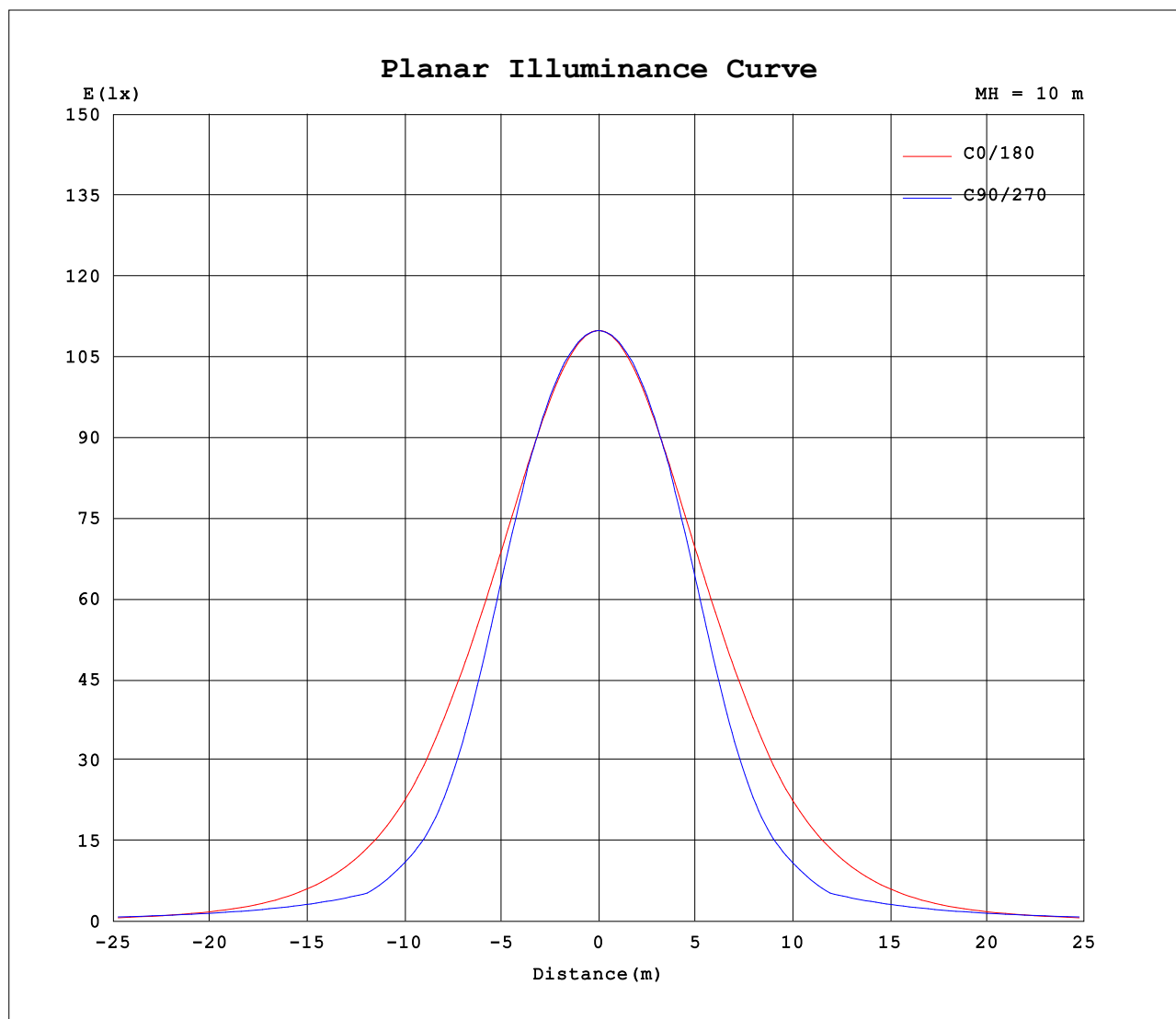
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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: