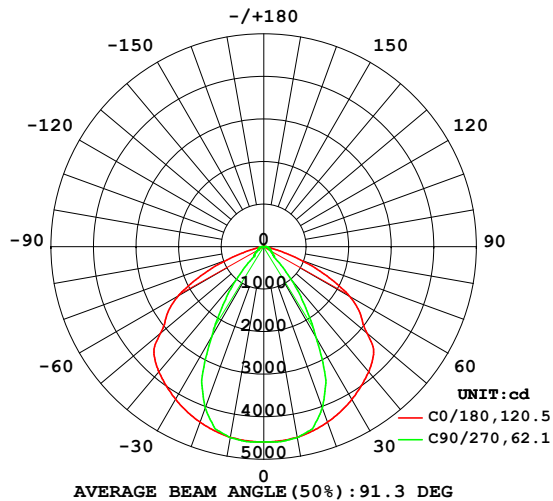


LUMINAIRE PHOTOMETRIC TEST REPORT

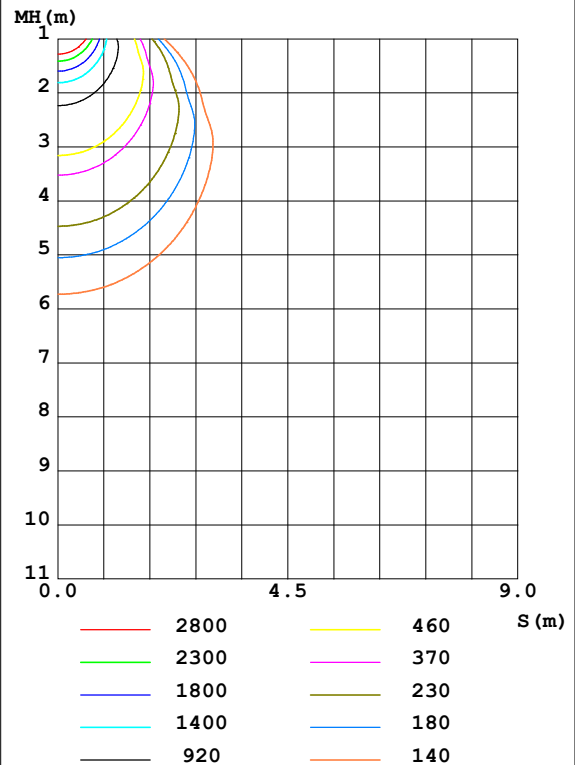
Test:U:220.0V I:0.2828A P:61.54W PF:0.9893 Lamp Flux:7819x1 lm		
NAME: LHB03-060	TYPE:60W	WEIGHT:
SPEC.:5000K Ra70 60120DEG L00302	DIM.: 0.34*0.3*0.065	SERIAL No.:
MFR.: EVERFINE	SUR.:0.28*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 127.06 lm/W			
MODEL	LHB03-060	I _{max} (cd)	4600	S/MH (C0/180)	1.35
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH (C90/270)	0.93
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	7819.0	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	7819	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	1.05

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:2017-01-09

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	4580	4592	4600	4592	4580	4592	4600	4592	0- 5	109.8	109.8	1.4,1.4
10	4548	4555	4555	4555	4548	4557	4555	4557	5- 10	327.2	437.0	5.59,5.59
15	4480	4476	4431	4476	4480	4478	4431	4478	10- 15	535.3	972.3	12.4,12.4
20	4390	4329	4036	4329	4390	4329	4036	4329	15- 20	719.9	1692	21.6,21.6
25	4278	3972	3465	3972	4278	3969	3465	3969	20- 25	859.4	2552	32.6,32.6
30	4144	3467	2465	3467	4144	3460	2465	3460	25- 30	929.7	3481	44.5,44.5
35	3997	2759	1666	2759	3997	2747	1666	2747	30- 35	912.1	4393	56.2,56.2
40	3838	1872	1003	1872	3838	1855	1003	1855	35- 40	833.2	5227	66.8,66.8
45	3644	1250	340.0	1250	3644	1232	340.0	1232	40- 45	708.3	5935	75.9,75.9
50	3171	874.0	281.1	874.0	3171	867.8	281.1	867.8	45- 50	562.7	6498	83.1,83.1
55	2777	565.7	222.1	565.7	2777	572.0	222.1	572.0	50- 55	428.2	6926	88.6,88.6
60	2325	421.6	163.2	421.6	2325	424.7	163.2	424.7	55- 60	322.8	7249	92.7,92.7
65	1636	299.0	145.4	299.0	1636	303.4	145.4	303.4	60- 65	230.4	7479	95.7,95.7
70	914.0	216.0	127.7	216.0	914.0	219.3	127.7	219.3	65- 70	156.7	7636	97.7,97.7
75	363.2	137.3	109.9	137.3	363.2	140.1	109.9	140.1	70- 75	96.08	7732	98.9,98.9
80	103.6	61.36	79.66	61.36	103.6	63.16	79.66	63.16	75- 80	51.67	7784	99.5,99.5
85	13.98	34.13	49.42	34.13	13.98	35.64	49.42	35.64	80- 85	25.09	7809	99.9,99.9
90	2.437	6.400	19.19	6.400	2.437	7.257	19.19	7.257	85- 90	10.36	7819	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:cd									UNIT:lm		

Conical surface Flux(90deg): 5935 lm

%lum = 75.9%

%lamp = 75.9%

Conical surface Flux(120deg): 7248.6 lm

%lum = 92.7%

%lamp = 92.7%

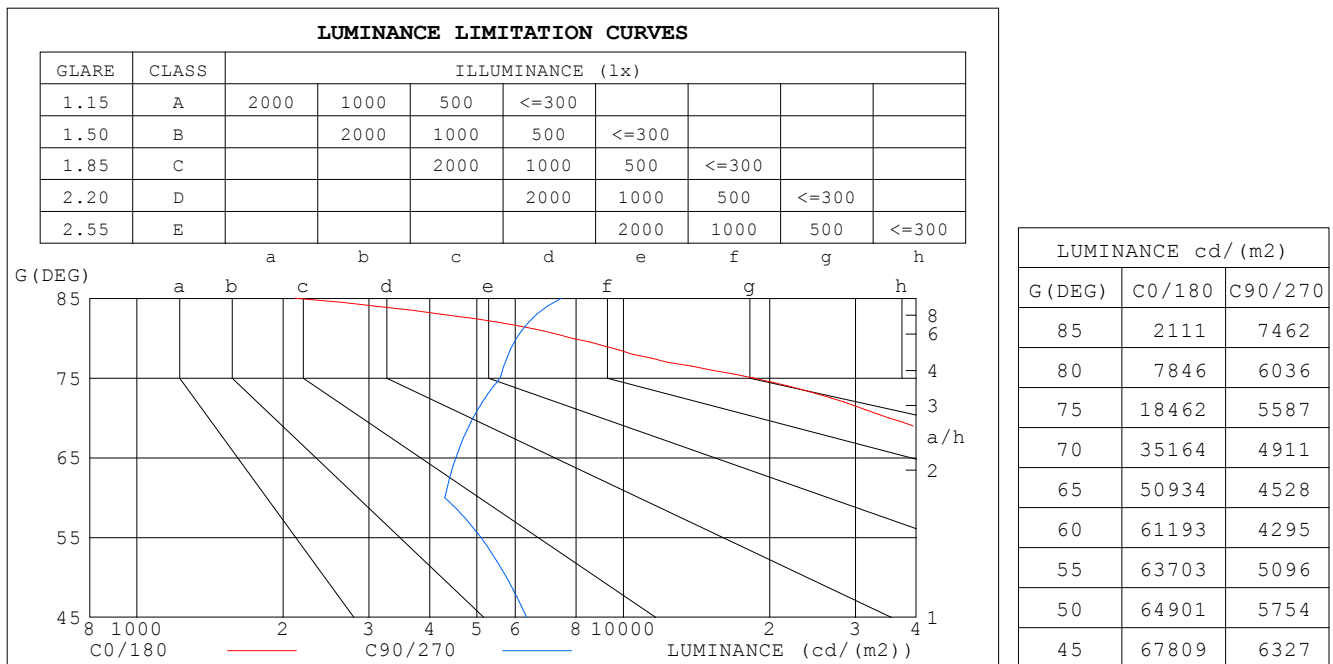
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-01-09

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: 2017-01-09

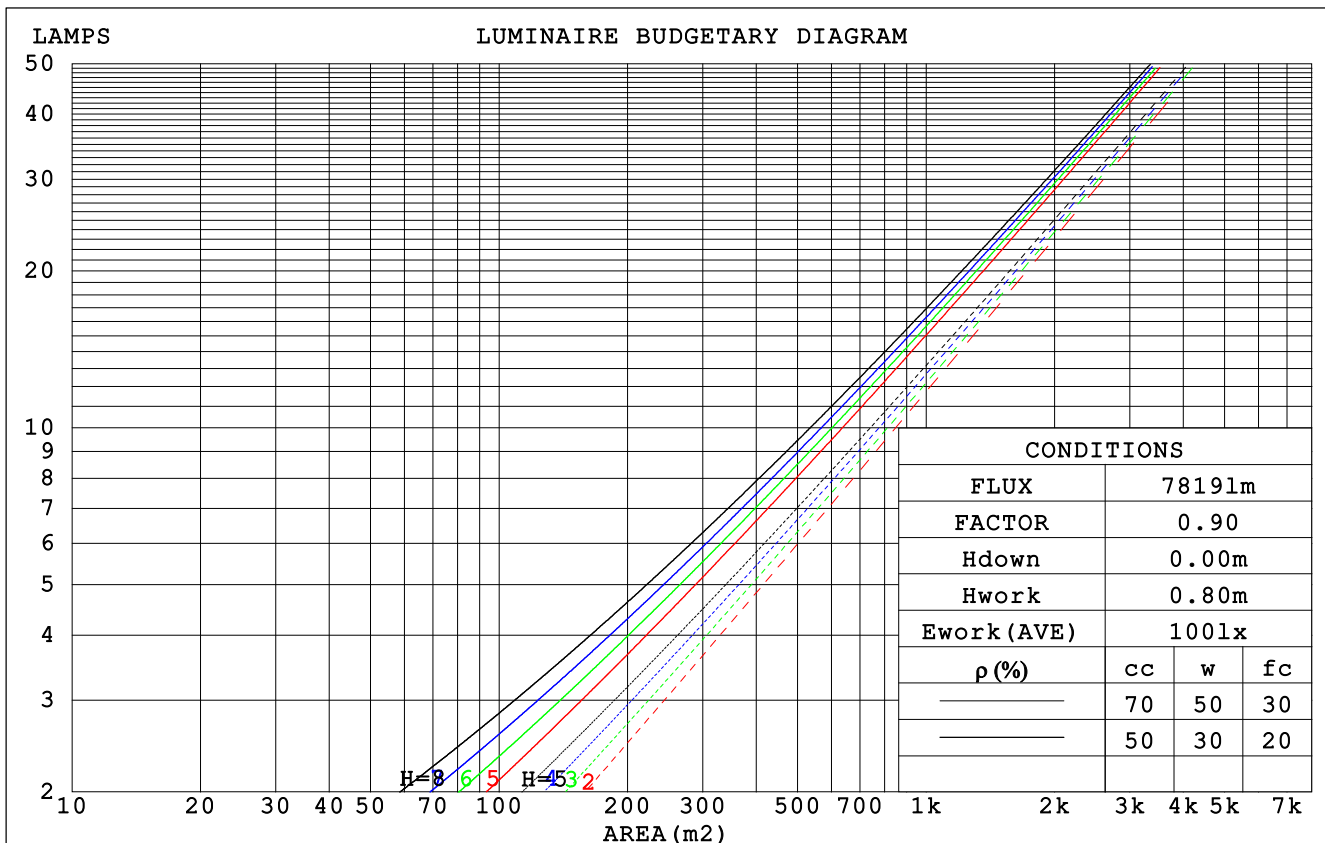
Checker:

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

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	1.08	1.05	1.02	1.06	1.03	1.00	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.88	.96	.91	.86	.92	.88	.85	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.82	.76	.87	.81	.76	.84	.79	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.76	.71	.66	.74	.69	.65	.72	.68	.64	.63
5.0	.73	.66	.60	.72	.65	.60	.70	.64	.59	.68	.63	.59	.66	.62	.58	.56
6.0	.67	.59	.54	.66	.59	.54	.64	.58	.53	.63	.57	.53	.61	.56	.52	.51
7.0	.62	.54	.49	.61	.54	.49	.59	.53	.48	.58	.52	.48	.57	.52	.48	.46
8.0	.57	.50	.44	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.38	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

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	.234	.133	.042	.227	.129	.041	.214	.123	.039	.202	.117	.037	.191	.111	.036		
2.0	.226	.124	.038	.220	.121	.037	.209	.116	.036	.199	.111	.035	.189	.107	.034		
3.0	.214	.114	.034	.209	.112	.034	.200	.108	.033	.191	.104	.032	.182	.101	.031		
4.0	.202	.105	.031	.198	.104	.031	.189	.100	.030	.181	.097	.029	.174	.095	.029		
5.0	.191	.097	.028	.187	.096	.028	.179	.093	.027	.172	.091	.027	.166	.089	.027		
6.0	.180	.090	.026	.176	.089	.026	.170	.087	.025	.164	.085	.025	.158	.083	.025		
7.0	.170	.084	.024	.167	.083	.024	.161	.081	.023	.155	.080	.023	.150	.078	.023		
8.0	.161	.079	.022	.158	.078	.022	.153	.076	.022	.148	.075	.022	.143	.073	.021		
9.0	.152	.074	.021	.150	.073	.021	.145	.072	.020	.141	.070	.020	.136	.069	.020		
10.0	.145	.069	.019	.143	.069	.019	.138	.068	.019	.134	.067	.019	.130	.066	.019		

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	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016		
2.0	.163	.132	.106	.140	.114	.092	.096	.079	.064	.055	.046	.037	.018	.015	.012		
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010		
4.0	.145	.100	.065	.125	.086	.057	.086	.060	.040	.050	.035	.024	.016	.011	.008		
5.0	.138	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006		
6.0	.131	.080	.044	.112	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005		
7.0	.125	.073	.037	.107	.063	.032	.074	.044	.023	.043	.026	.014	.014	.009	.005		
8.0	.119	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004		
9.0	.113	.062	.028	.098	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003		
10.0	.108	.058	.024	.093	.050	.021	.065	.035	.015	.038	.021	.009	.012	.007	.003		

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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	27.5	26.5	27.7	27.9	17.2	18.4	17.4	18.6	18.8
3H	27.1	28.2	27.4	28.4	28.7	17.5	18.6	17.8	18.8	19.1
4H	27.2	28.3	27.5	28.5	28.7	17.8	18.8	18.1	19.1	19.3
6H	27.1	28.2	27.5	28.4	28.7	18.1	19.1	18.4	19.4	19.6
8H	27.1	28.1	27.4	28.3	28.6	18.3	19.2	18.6	19.5	19.8
12H	27.1	28.0	27.4	28.3	28.6	18.4	19.4	18.8	19.6	19.9
4H 2H	26.0	27.1	26.3	27.4	27.6	17.8	18.9	18.1	19.1	19.3
3H	26.9	27.8	27.2	28.1	28.4	18.2	19.1	18.5	19.4	19.7
4H	27.0	27.8	27.4	28.2	28.5	18.5	19.3	18.8	19.6	19.9
6H	27.0	27.7	27.4	28.1	28.4	18.9	19.6	19.3	20.0	20.3
8H	26.9	27.6	27.3	28.0	28.4	19.1	19.8	19.5	20.2	20.5
12H	26.9	27.5	27.3	27.9	28.3	19.3	20.0	19.8	20.4	20.8
8H 4H	26.9	27.6	27.3	27.9	28.3	18.7	19.4	19.1	19.7	20.1
6H	26.9	27.4	27.3	27.8	28.3	19.2	19.7	19.6	20.1	20.6
8H	26.9	27.4	27.3	27.8	28.2	19.4	19.9	19.9	20.4	20.8
12H	26.8	27.2	27.3	27.7	28.2	19.8	20.2	20.2	20.6	21.1
12H 4H	26.8	27.5	27.3	27.9	28.2	18.7	19.3	19.1	19.7	20.1
6H	26.8	27.3	27.3	27.8	28.2	19.2	19.7	19.6	20.1	20.6
8H	26.8	27.2	27.3	27.7	28.2	19.5	19.9	20.0	20.4	20.8
Variations with the observer position at spacings:										
S = 1.0H	+ 1.4 / - 2.5					+ 1.0 / - 1.4				
1.5H	+ 2.3 / - 5.4					+ 1.3 / - 1.5				
2.0H	+ 3.7 / - 7.4					+ 1.4 / - 1.2				

CIE Pub.117 Corrected 7819 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.1)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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) $k(RI) \times RCR = 5$									
$k = 0.60$	71	61	56	70	61	56	69	61	55	50
0.80	80	71	65	79	71	65	78	70	65	60
1.00	87	79	74	86	78	73	84	79	73	67
1.25	93	86	80	92	85	80	90	84	79	73
1.50	97	90	85	96	89	85	93	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	107	103	99	106	101	97	102	98	95	88
4.00	110	106	103	108	105	101	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

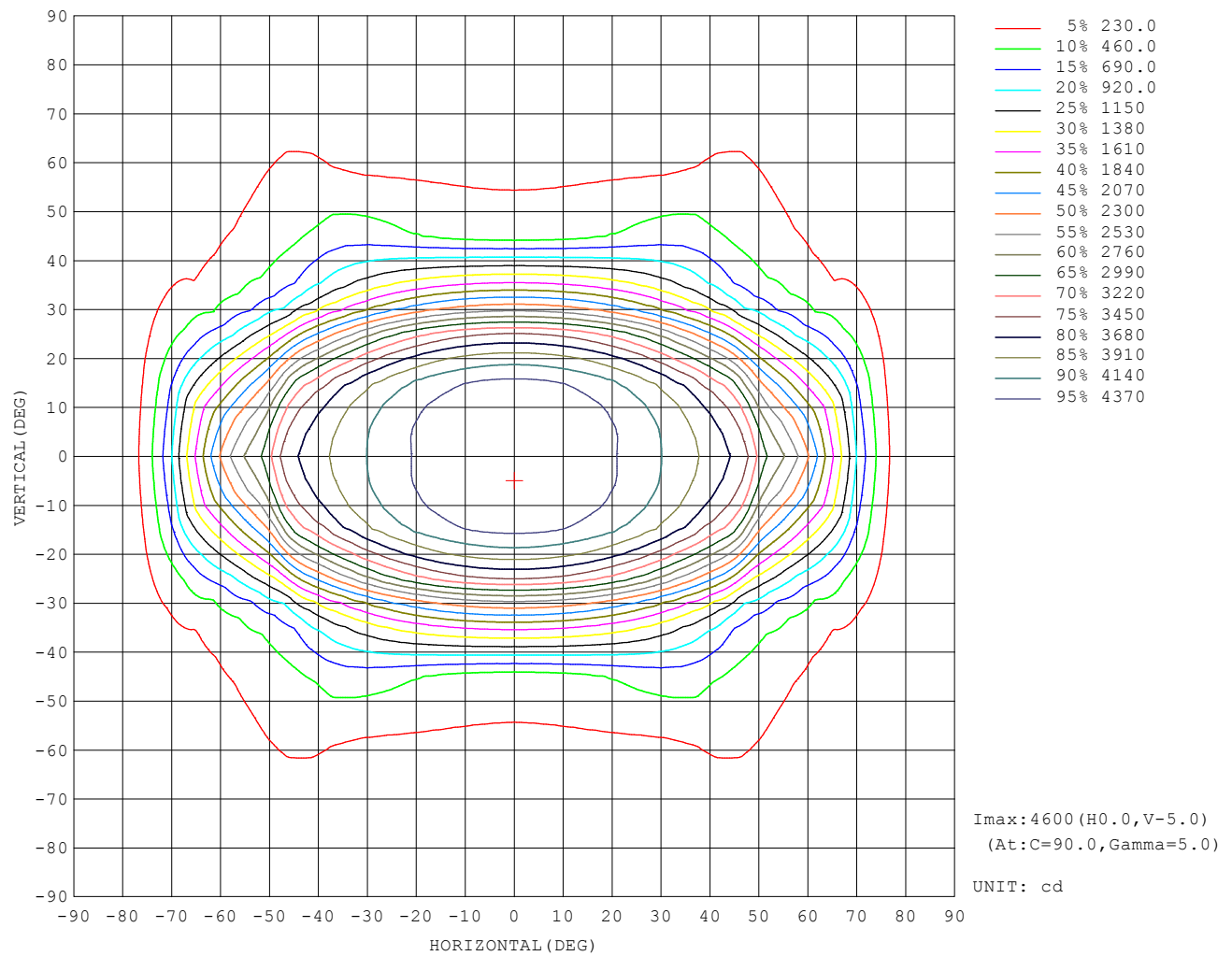
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

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



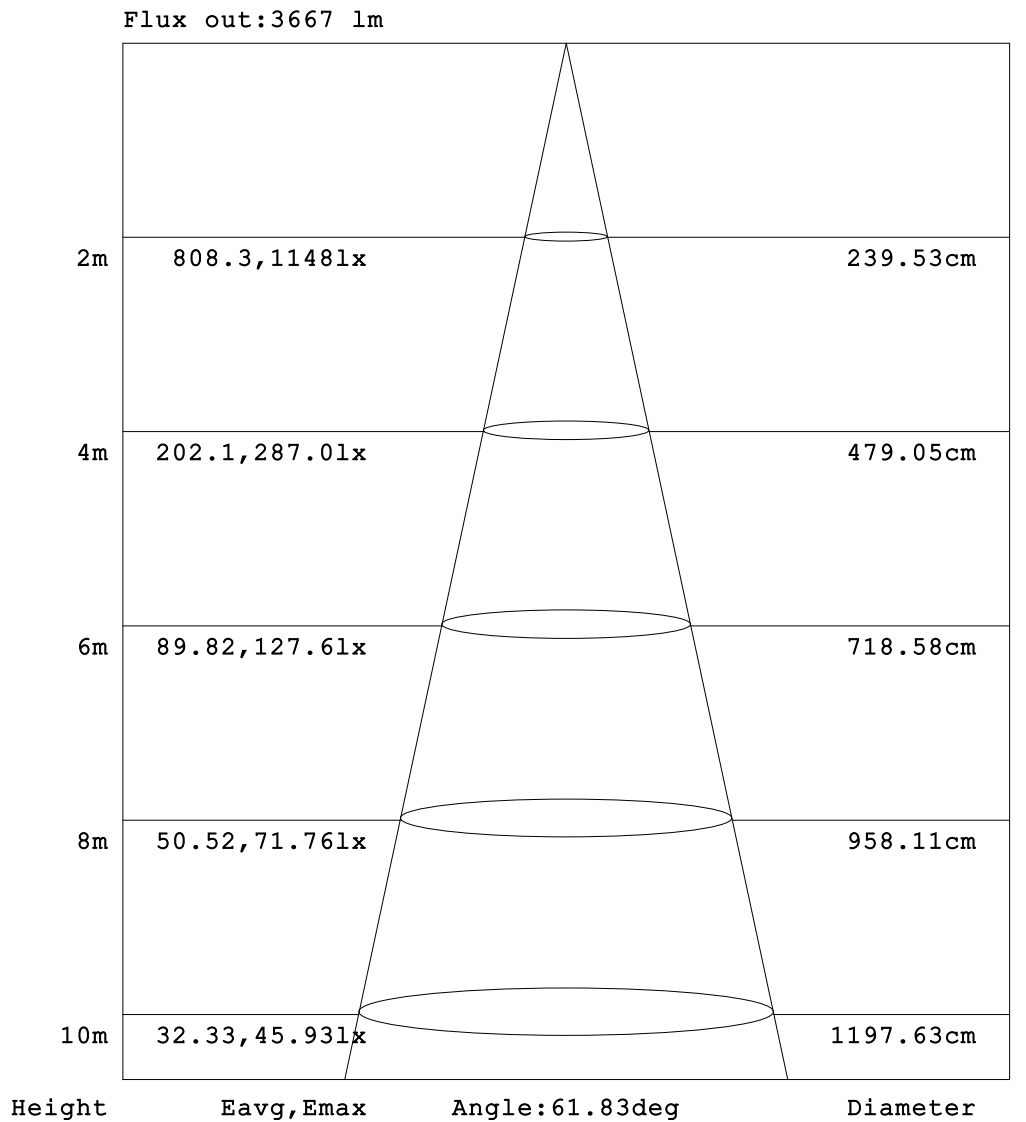
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

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.

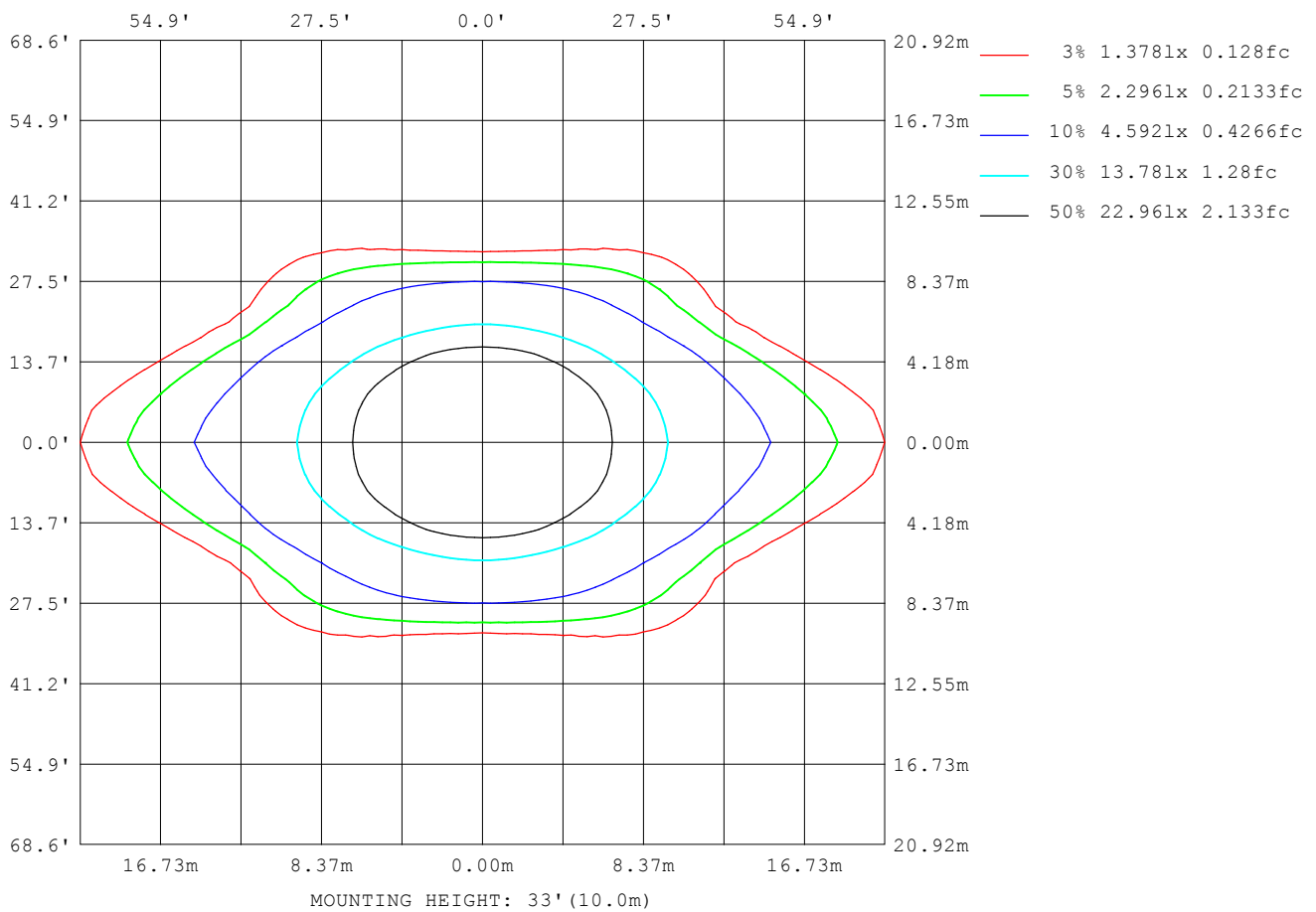
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

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



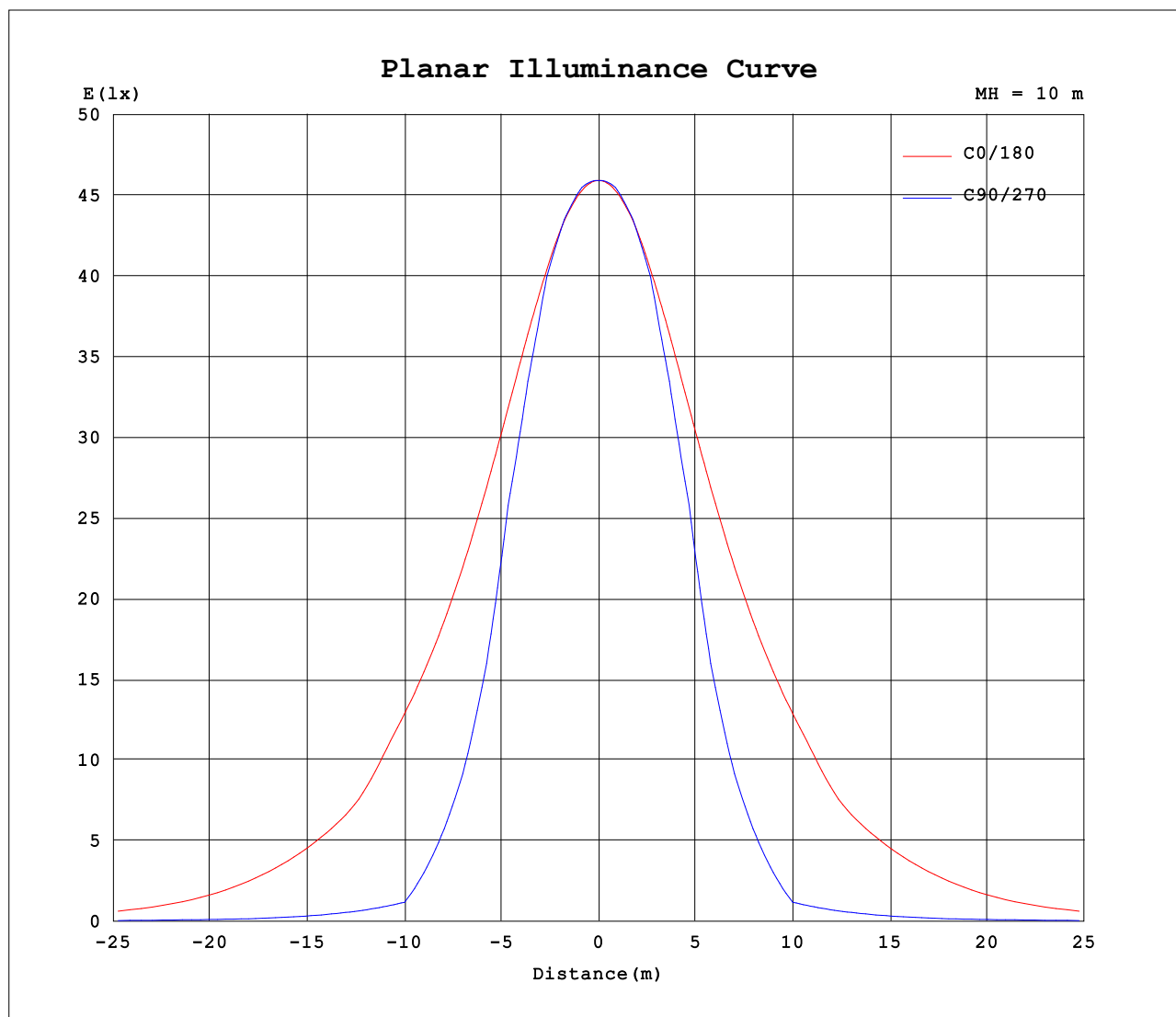
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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: 2017-01-09

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:

