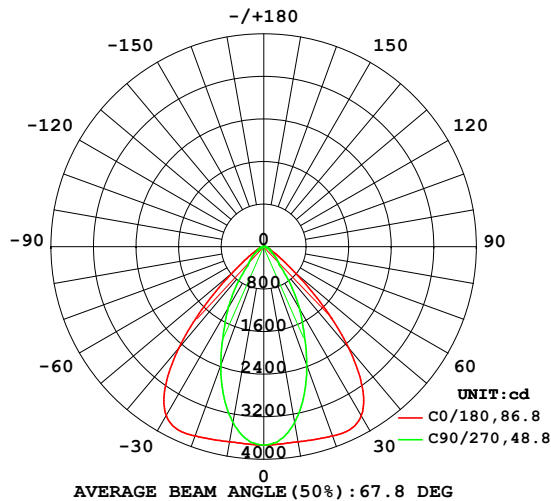


LUMINAIRE PHOTOMETRIC TEST REPORT

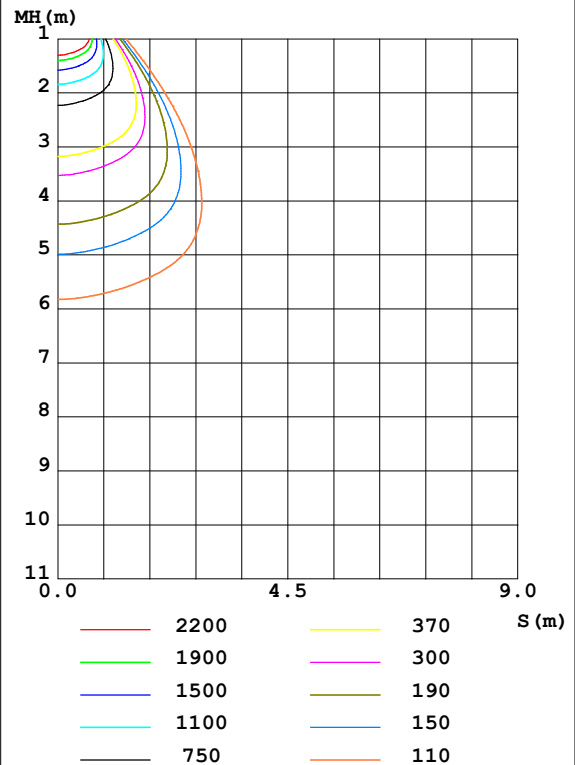
Test:U:230.1V I:0.1465A P:32.69W PF:0.9703 Lamp Flux:4540.77x1 lm		
NAME: LHB01-30H	TYPE:30W	WEIGHT:
SPEC.:4000K Ra80 5090DEG L06402	DIM.: 0.28*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.25*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 138.89 lm/W			
MODEL	LHB01-30H	I _{max} (cd)	3808	S/MH(C0/180)	1.25
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.76
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4540.8	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	4540.77	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.85

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:2017-06-01

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	3723	3676	3640	3688	3723	3688	3640	3676	0- 5	88.60	88.60	1.95,1.95
10	3726	3514	3357	3536	3726	3536	3357	3514	5- 10	258.0	346.6	7.63,7.63
15	3751	3269	2913	3285	3751	3285	2913	3269	10- 15	405.4	752.1	16.6,16.6
20	3788	2921	2372	2924	3788	2924	2372	2921	15- 20	519.1	1271	28,28
25	3804	2447	1803	2440	3804	2440	1803	2447	20- 25	588.3	1859	40.9,40.9
30	3669	1852	1348	1853	3669	1853	1348	1852	25- 30	606.2	2466	54.3,54.3
35	3233	1311	907.5	1317	3233	1317	907.5	1311	30- 35	571.0	3037	66.9,66.9
40	2484	947.9	467.2	954.7	2484	954.7	467.2	947.9	35- 40	480.2	3517	77.5,77.5
45	1577	612.8	365.0	620.8	1577	620.8	365.0	612.8	40- 45	356.0	3873	85.3,85.3
50	799.2	311.2	262.7	320.6	799.2	320.6	262.7	311.2	45- 50	239.5	4112	90.6,90.6
55	401.4	232.1	167.7	239.4	401.4	239.4	167.7	232.1	50- 55	149.8	4262	93.9,93.9
60	206.3	158.5	130.9	163.2	206.3	163.2	130.9	158.5	55- 60	95.39	4358	96,96
65	121.0	101.1	101.3	103.6	121.0	103.6	101.3	101.1	60- 65	65.01	4423	97.4,97.4
70	81.62	73.22	71.67	76.27	81.62	76.27	71.67	73.22	65- 70	46.69	4469	98.4,98.4
75	42.31	46.31	54.11	49.91	42.31	49.91	54.11	46.31	70- 75	33.03	4502	99.2,99.2
80	14.28	30.34	36.56	32.68	14.28	32.68	36.56	30.34	75- 80	21.66	4524	99.6,99.6
85	5.559	16.08	19.00	16.82	5.559	16.82	19.00	16.08	80- 85	12.33	4536	99.9,99.9
90	0.6870	2.033	1.444	1.125	0.6870	1.125	1.444	2.033	85- 90	4.529	4541	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): 3872.9 lm

%lum = 85.3%

%lamp = 85.3%

Conical surface Flux(120deg): 4357.5 lm

%lum = 96.0%

%lamp = 96.0%

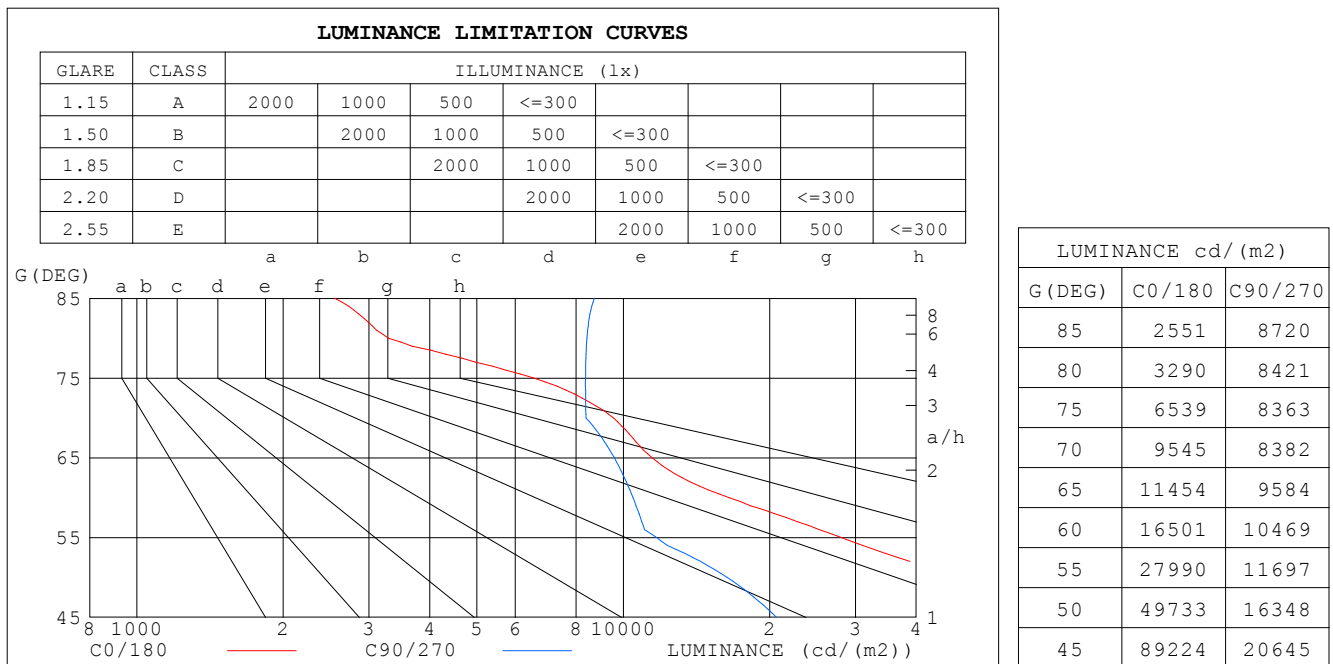
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-06-01

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: 2017-06-01

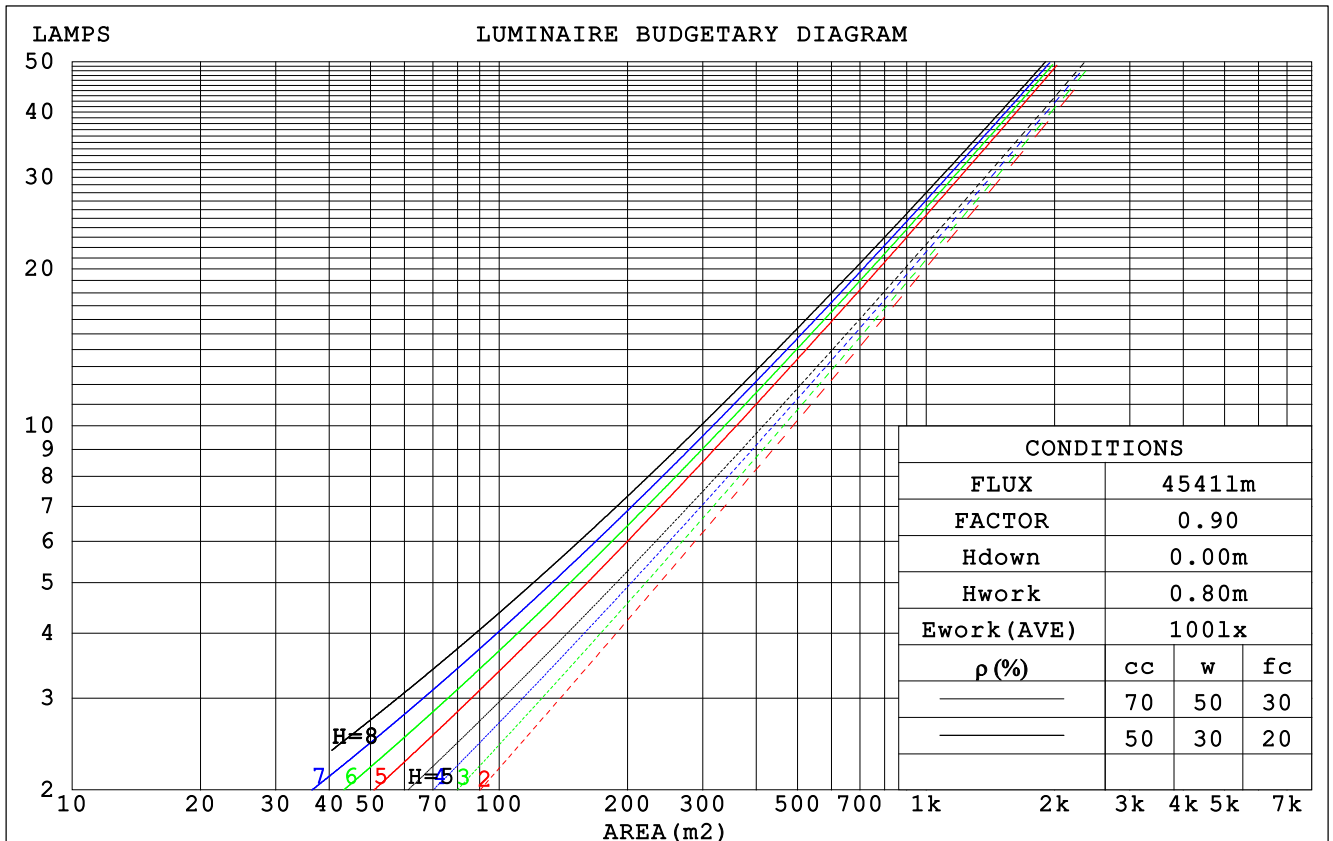
Checker:

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	1.09	1.06	1.03	1.07	1.04	1.02	1.03	1.01	.99	.99	.97	.96	.96	.94	.93	.91
2.0	.00	.95	.91	.98	.94	.90	.95	.91	.88	.92	.89	.86	.89	.86	.84	.82
3.0	.91	.86	.81	.90	.85	.80	.87	.83	.79	.85	.81	.78	.82	.79	.76	.75
4.0	.84	.78	.73	.83	.77	.72	.81	.75	.71	.79	.74	.70	.77	.73	.70	.68
5.0	.78	.71	.66	.77	.70	.65	.75	.69	.65	.73	.68	.64	.71	.67	.64	.62
6.0	.72	.65	.60	.71	.64	.60	.69	.64	.59	.68	.63	.59	.66	.62	.58	.57
7.0	.67	.60	.55	.66	.59	.55	.65	.59	.54	.63	.58	.54	.62	.57	.54	.52
8.0	.62	.55	.51	.62	.55	.51	.60	.54	.50	.59	.54	.50	.58	.53	.50	.48
9.0	.58	.51	.47	.58	.51	.47	.57	.51	.47	.56	.50	.46	.55	.50	.46	.45
10.0	.54	.48	.44	.54	.48	.43	.53	.47	.43	.52	.47	.43	.51	.47	.43	.42



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-06-01

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	.211	.120	.038	.204	.116	.037	.191	.110	.035	.180	.104	.033	.169	.098	.032		
2.0	.203	.111	.034	.197	.109	.033	.186	.104	.032	.176	.099	.031	.167	.094	.030		
3.0	.193	.103	.031	.188	.101	.030	.178	.097	.029	.170	.093	.029	.162	.089	.028		
4.0	.183	.095	.028	.178	.093	.028	.170	.090	.027	.163	.087	.026	.155	.084	.026		
5.0	.173	.088	.026	.169	.087	.025	.162	.084	.025	.155	.082	.024	.149	.080	.024		
6.0	.164	.082	.024	.161	.081	.023	.154	.079	.023	.148	.077	.023	.143	.075	.022		
7.0	.156	.077	.022	.153	.076	.022	.147	.074	.021	.142	.073	.021	.137	.071	.021		
8.0	.148	.072	.020	.146	.072	.020	.140	.070	.020	.136	.069	.020	.131	.067	.020		
9.0	.141	.068	.019	.139	.068	.019	.134	.066	.019	.130	.065	.019	.126	.064	.018		
10.0	.135	.065	.018	.132	.064	.018	.128	.063	.018	.124	.062	.018	.121	.061	.017		

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	.173	.157	.142	.148	.135	.122	.102	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.160	.132	.109	.137	.114	.094	.094	.079	.066	.054	.046	.038	.017	.015	.013	
3.0	.150	.114	.085	.128	.098	.074	.088	.068	.052	.051	.040	.031	.016	.013	.010	
4.0	.140	.100	.068	.121	.086	.059	.083	.060	.042	.048	.035	.025	.015	.011	.008	
5.0	.133	.088	.056	.114	.076	.048	.078	.053	.034	.045	.031	.020	.015	.010	.007	
6.0	.126	.079	.046	.108	.069	.040	.074	.048	.028	.043	.028	.017	.014	.009	.006	
7.0	.119	.072	.039	.103	.062	.034	.071	.044	.024	.041	.026	.014	.013	.008	.005	
8.0	.114	.066	.033	.098	.057	.029	.068	.040	.021	.039	.024	.012	.013	.008	.004	
9.0	.108	.061	.029	.093	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.104	.057	.026	.089	.049	.022	.062	.035	.016	.036	.020	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

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	24.6	25.7	24.8	25.9	26.1	18.7	19.9	19.0	20.1	20.2
3H	24.6	25.6	24.8	25.8	26.0	19.2	20.2	19.5	20.5	20.7
4H	24.5	25.5	24.8	25.7	26.0	19.5	20.4	19.7	20.7	20.9
6H	24.5	25.4	24.8	25.6	25.9	19.7	20.6	20.0	20.9	21.1
8H	24.4	25.3	24.7	25.6	25.8	19.8	20.7	20.1	20.9	21.2
12H	24.4	25.2	24.7	25.5	25.8	19.9	20.7	20.2	21.0	21.3
4H 2H	24.4	25.4	24.7	25.6	25.8	19.0	20.0	19.3	20.2	20.4
3H	24.4	25.3	24.8	25.5	25.8	19.6	20.4	19.9	20.7	21.0
4H	24.4	25.2	24.8	25.5	25.8	19.9	20.7	20.3	21.0	21.3
6H	24.4	25.1	24.8	25.4	25.8	20.3	21.0	20.7	21.3	21.7
8H	24.4	25.0	24.8	25.3	25.7	20.5	21.1	20.9	21.4	21.8
12H	24.3	24.9	24.7	25.3	25.7	20.6	21.2	21.0	21.5	21.9
8H 4H	24.3	25.0	24.7	25.3	25.7	20.0	20.6	20.4	21.0	21.3
6H	24.3	24.9	24.8	25.3	25.7	20.5	21.0	20.9	21.4	21.8
8H	24.3	24.8	24.8	25.2	25.6	20.7	21.2	21.2	21.6	22.0
12H	24.3	24.7	24.8	25.1	25.6	20.9	21.3	21.4	21.8	22.2
12H 4H	24.3	24.9	24.7	25.3	25.6	20.0	20.5	20.4	20.9	21.3
6H	24.3	24.8	24.8	25.2	25.6	20.5	20.9	20.9	21.3	21.8
8H	24.3	24.7	24.8	25.1	25.6	20.8	21.1	21.2	21.6	22.1
Variations with the observer position at spacings:										
S = 1.0H	+ 3.1 / - 3.7					+ 0.9 / - 1.2				
1.5H	+ 4.2 / - 4.2					+ 1.0 / - 0.9				
2.0H	+ 5.9 / - 4.1					+ 1.1 / - 0.8				

CIE Pub.117 Corrected 4541 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.3)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

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) $k(RI) \times RCR = 5$									
$k = 0.60$	77	69	64	77	69	64	76	69	64	60
0.80	86	78	73	85	78	73	84	77	73	68
1.00	92	85	80	91	85	80	90	85	80	75
1.25	98	91	86	96	90	86	94	89	85	80
1.50	101	95	90	100	94	90	97	92	89	84
2.00	105	100	96	103	99	95	101	97	93	87
2.50	107	102	99	106	101	98	102	99	96	89
3.00	109	105	102	107	104	100	104	101	98	91
4.00	112	108	105	110	107	104	106	103	101	94
5.00	113	110	108	111	108	106	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

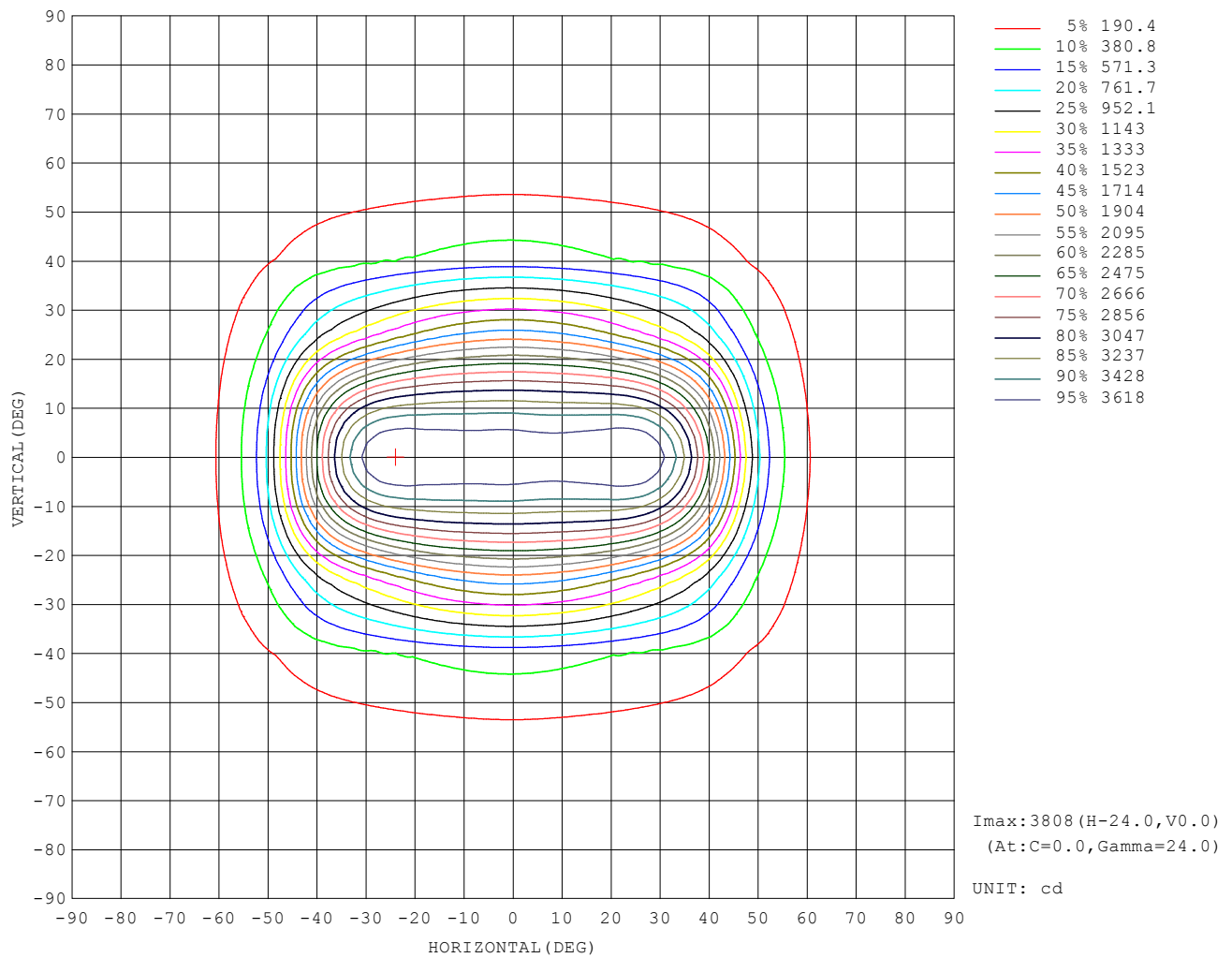
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-06-01

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



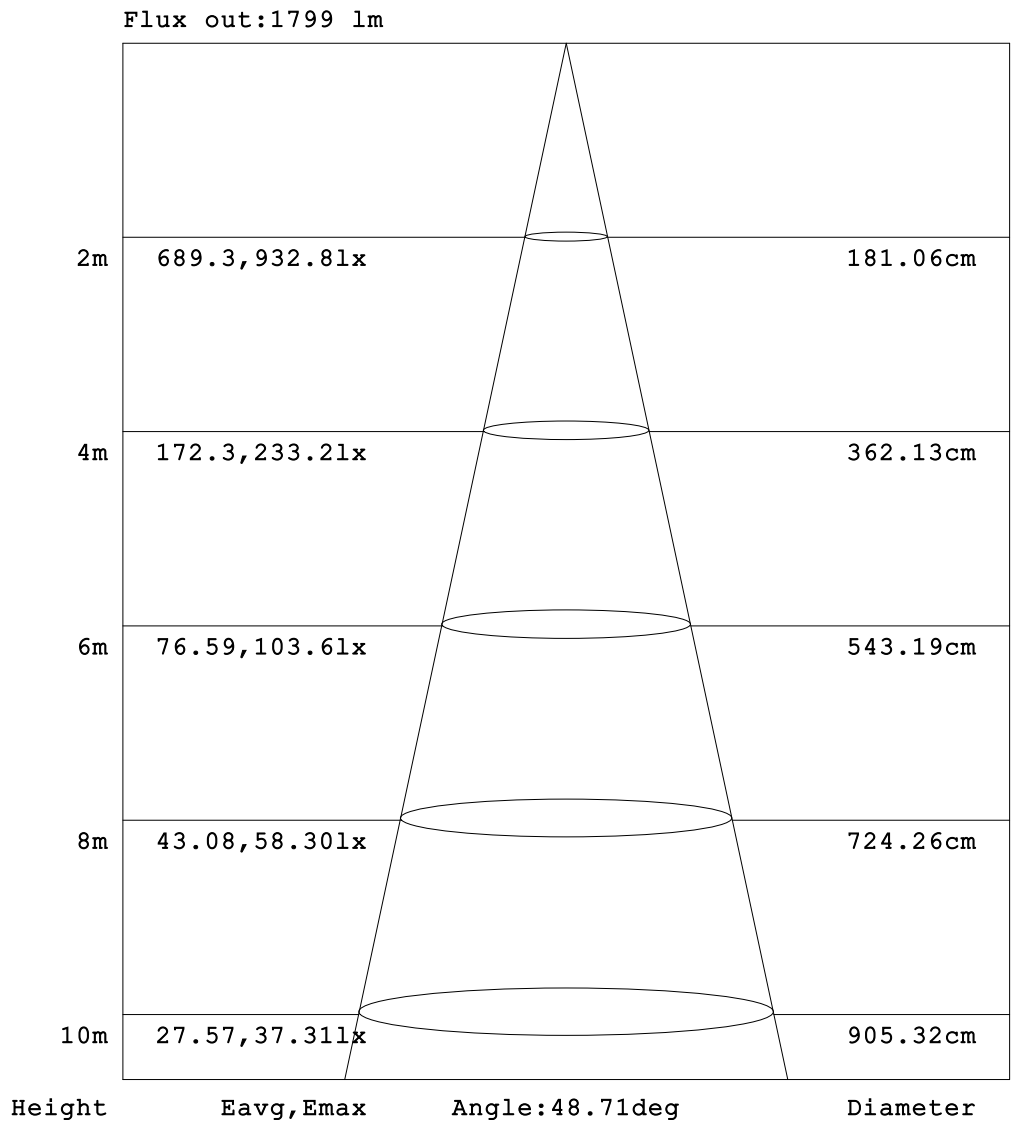
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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.

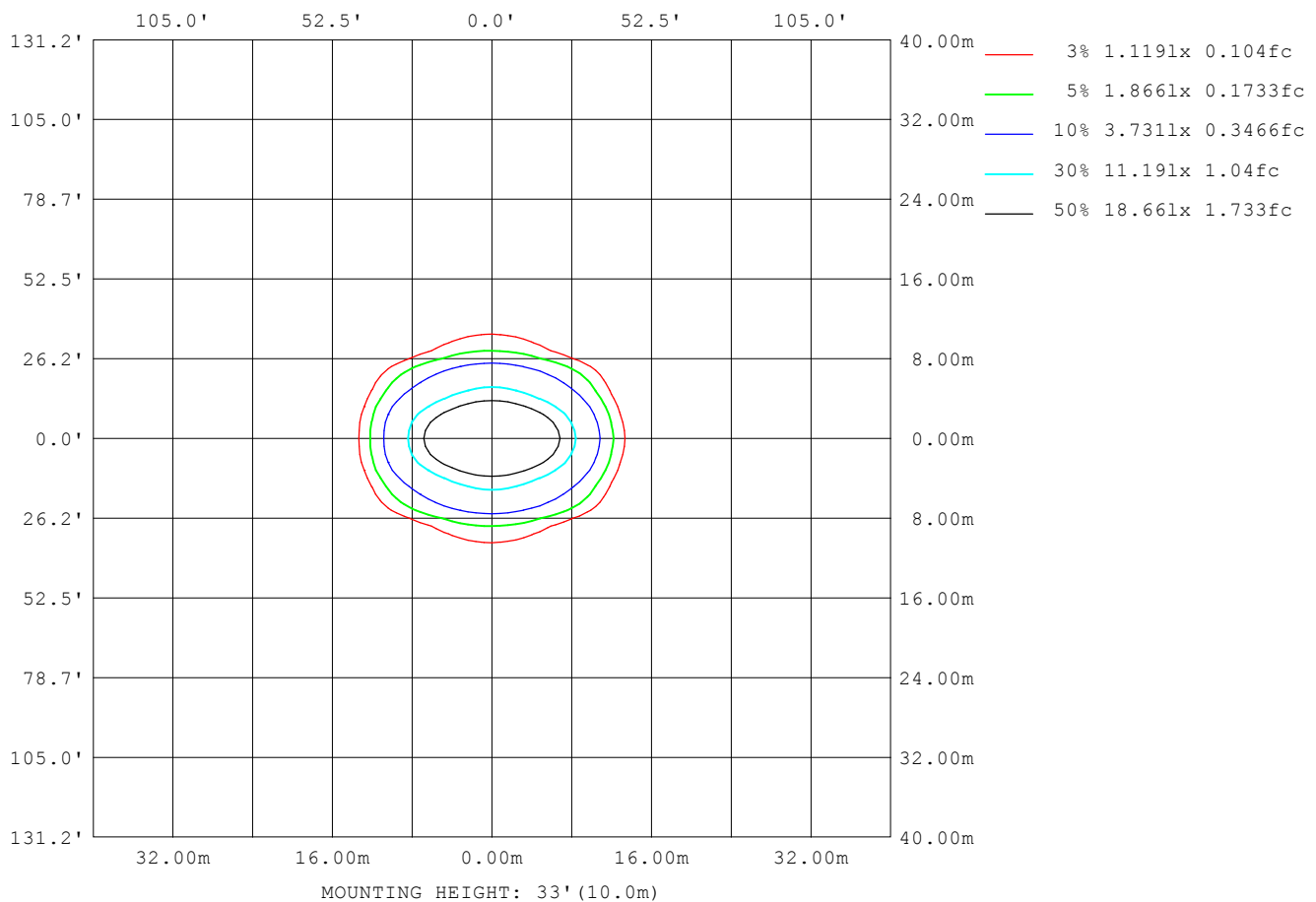
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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



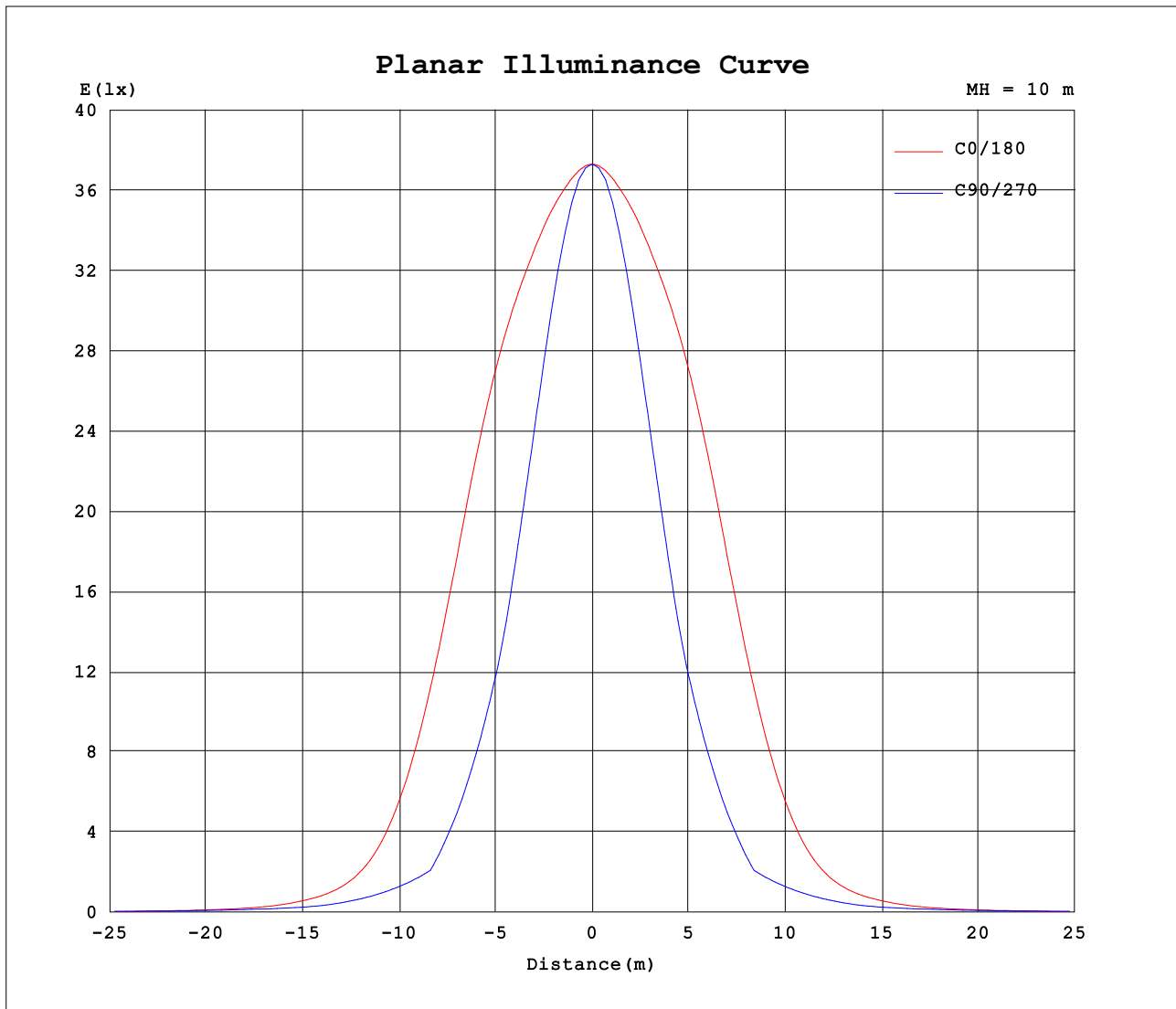
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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: 2017-06-01

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: cd

Assessor: