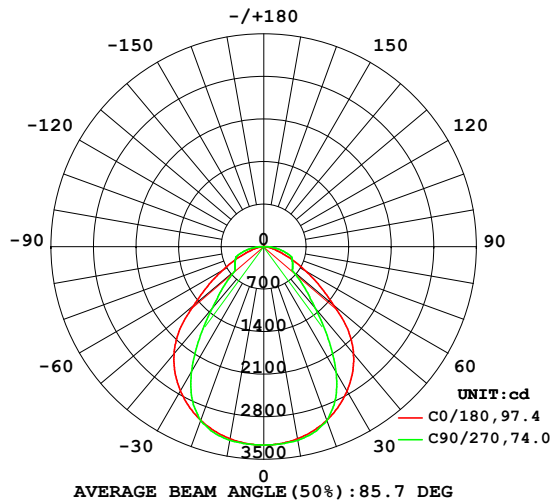


LUMINAIRE PHOTOMETRIC TEST REPORT

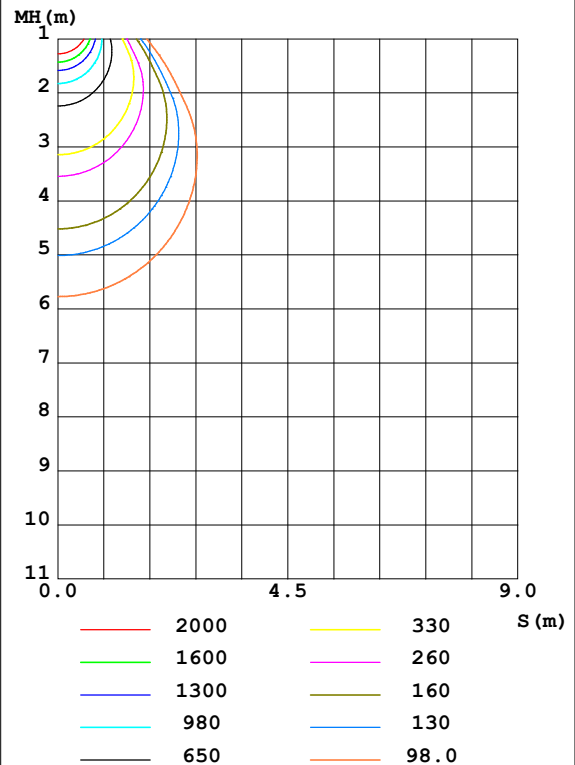
Test:U:230.1V I:0.2593A P:57.72W PF:0.9672 Lamp Flux:6605.57x1 lm		
NAME: LHB03-060	TYPE:60W	WEIGHT:
SPEC.:5000K Ra80 80100DEG L00303	DIM.: 0.336*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.28*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.45 lm/W			
MODEL	LHB03-060	I _{max} (cd)	3265	S/MH (C0/180)	1.25
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH (C90/270)	1.07
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	6605.6	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	6605.57	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: 2017-07-01

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	3251	3254	3257	3254	3251	3254	3257	3254	0- 5	77.92	77.92	1.18,1.18
10	3210	3222	3237	3222	3210	3222	3237	3222	5- 10	231.7	309.6	4.69,4.69
15	3139	3164	3170	3164	3139	3163	3170	3163	10- 15	378.6	688.2	10.4,10.4
20	3039	3064	3047	3064	3039	3064	3047	3064	15- 20	512.0	1200	18.2,18.2
25	2907	2906	2784	2906	2907	2908	2784	2908	20- 25	622.3	1823	27.6,27.6
30	2743	2674	2382	2674	2743	2678	2382	2678	25- 30	696.6	2519	38.1,38.1
35	2543	2365	1852	2365	2543	2371	1852	2371	30- 35	722.2	3241	49.1,49.1
40	2298	1972	1318	1972	2298	1978	1318	1978	35- 40	694.3	3936	59.6,59.6
45	1975	1540	947.6	1540	1975	1543	947.6	1543	40- 45	623.7	4559	69,69
50	1504	1126	614.1	1126	1504	1126	614.1	1126	45- 50	523.8	5083	77,77
55	1120	801.6	582.0	801.6	1120	800.3	582.0	800.3	50- 55	409.0	5492	83.1,83.1
60	791.4	521.9	549.9	521.9	791.4	517.0	549.9	517.0	55- 60	324.4	5817	88.1,88.1
65	523.7	405.6	517.9	405.6	523.7	401.8	517.9	401.8	60- 65	259.1	6076	92,92
70	319.4	293.1	485.8	293.1	319.4	291.9	485.8	291.9	65- 70	203.8	6279	95.1,95.1
75	191.7	181.0	366.5	181.0	191.7	181.7	366.5	181.7	70- 75	150.4	6430	97.3,97.3
80	98.85	116.8	247.2	116.8	98.85	116.8	247.2	116.8	75- 80	99.49	6529	98.8,98.8
85	19.77	61.24	127.9	61.24	19.77	60.93	127.9	60.93	80- 85	56.40	6586	99.7,99.7
90	1.675	7.001	8.596	7.001	1.675	6.597	8.596	6.597	85- 90	19.91	6606	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): 4559.3 lm

%lum = 69.0%

%lamp = 69.0%

Conical surface Flux(120deg): 5816.5 lm

%lum = 88.1%

%lamp = 88.1%

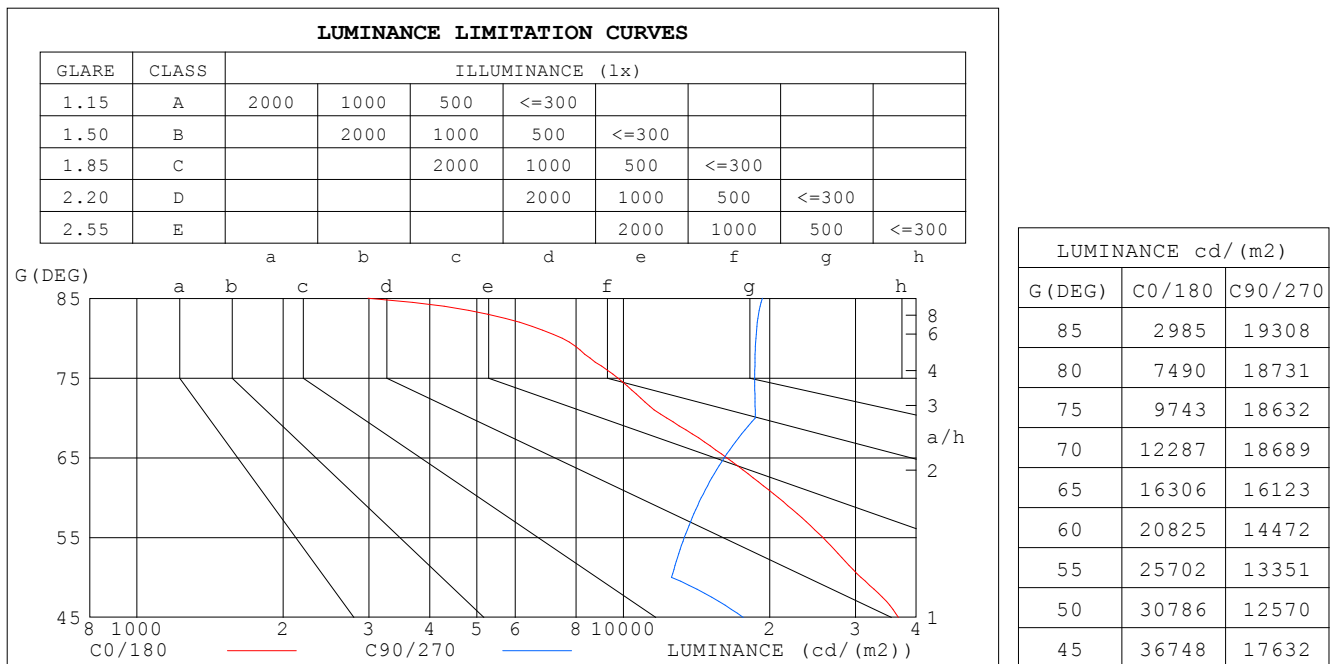
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-01

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: 2017-07-01

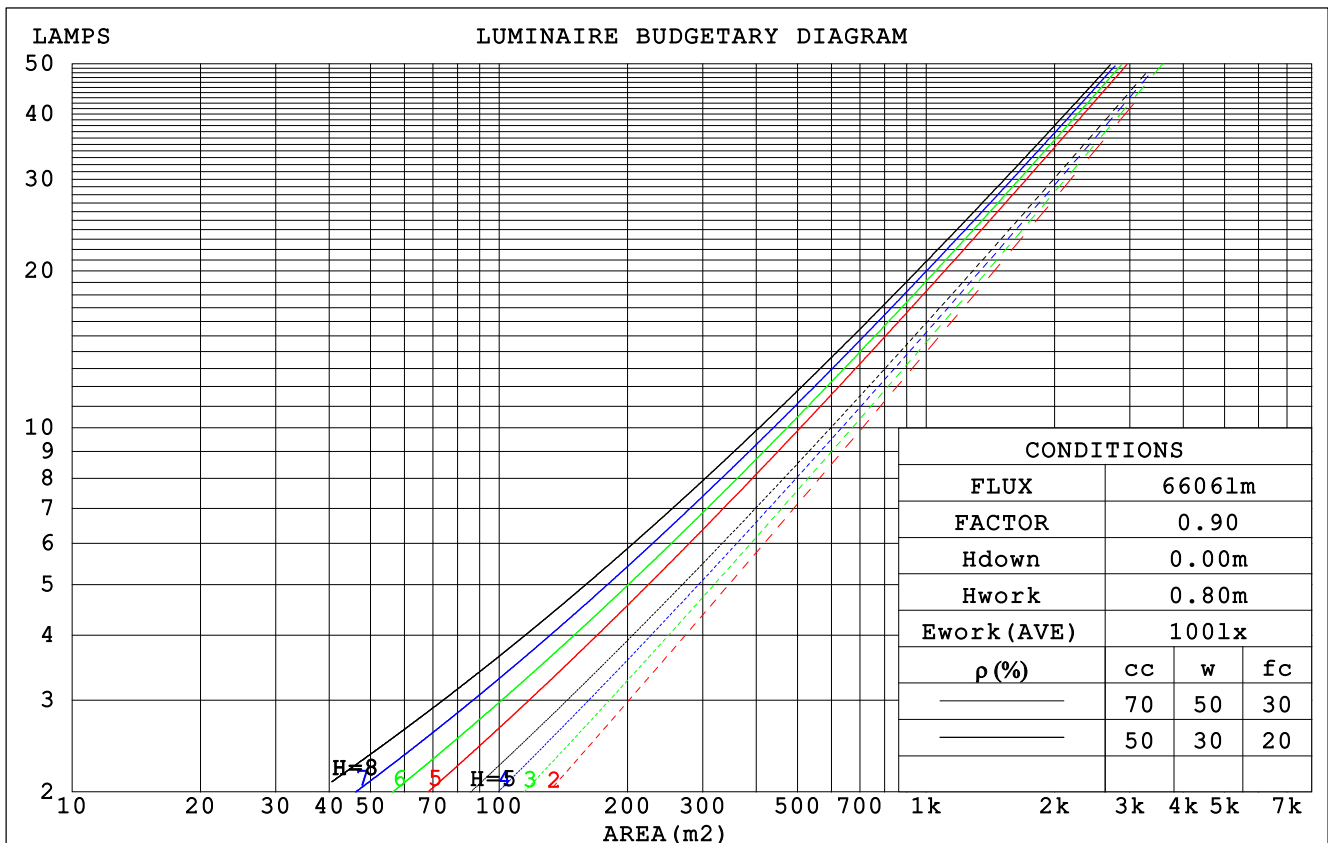
Checker:

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

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	1.06	1.03	.99	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.93	.91	.89	.87
2.0	.95	.89	.84	.93	.88	.83	.90	.85	.81	.86	.83	.79	.84	.80	.78	.76
3.0	.85	.78	.72	.84	.77	.72	.81	.75	.70	.78	.73	.69	.76	.72	.68	.66
4.0	.77	.69	.63	.75	.68	.63	.73	.67	.62	.71	.65	.61	.69	.64	.60	.58
5.0	.70	.61	.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	.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	.42	.37	.48	.41	.36	.47	.41	.36	.46	.40	.36	.34
10.0	.46	.38	.34	.45	.38	.34	.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: 2017-07-01

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	.261	.149	.047	.254	.145	.046	.241	.139	.044	.229	.132	.042	.218	.127	.041	
2.0	.249	.136	.042	.243	.134	.041	.232	.129	.040	.221	.124	.039	.211	.120	.038	
3.0	.233	.124	.037	.228	.122	.037	.218	.118	.036	.209	.115	.035	.201	.111	.034	
4.0	.218	.113	.033	.214	.112	.033	.205	.109	.032	.197	.106	.032	.189	.103	.031	
5.0	.204	.104	.030	.200	.103	.030	.192	.100	.029	.185	.098	.029	.179	.095	.029	
6.0	.191	.096	.027	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.180	.089	.025	.177	.088	.025	.171	.086	.025	.165	.084	.025	.159	.083	.024	
8.0	.169	.083	.023	.167	.082	.023	.161	.080	.023	.156	.079	.023	.151	.078	.023	
9.0	.160	.077	.022	.157	.077	.022	.152	.075	.021	.148	.074	.021	.143	.073	.021	
10.0	.151	.073	.020	.149	.072	.020	.145	.071	.020	.140	.070	.020	.136	.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	.151	.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	.157	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.149	.100	.063	.128	.087	.055	.088	.060	.038	.051	.035	.023	.016	.012	.007	
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	.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	.100	.055	.023	.070	.038	.017	.041	.023	.010	.013	.007	.003	
10.0	.111	.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:2017-07-01

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	23.7	25.1	24.0	25.2	25.4	21.0	22.3	21.2	22.5	22.7
3H	24.2	25.5	24.5	25.7	25.9	22.8	24.0	23.1	24.2	24.5
4H	24.3	25.5	24.7	25.8	26.0	23.7	24.9	24.0	25.1	25.4
6H	24.4	25.5	24.7	25.7	26.0	24.5	25.6	24.8	25.9	26.1
8H	24.4	25.4	24.7	25.7	26.0	24.8	25.9	25.1	26.1	26.4
12H	24.3	25.3	24.7	25.6	25.9	25.0	26.1	25.4	26.4	26.6
4H 2H	23.7	24.9	24.0	25.2	25.4	21.4	22.6	21.7	22.9	23.1
3H	24.4	25.4	24.8	25.7	26.0	23.3	24.3	23.7	24.6	24.9
4H	24.6	25.6	25.0	25.9	26.2	24.4	25.3	24.8	25.6	26.0
6H	24.7	25.5	25.1	25.9	26.3	25.4	26.2	25.7	26.5	26.9
8H	24.7	25.5	25.1	25.8	26.2	25.8	26.5	26.2	26.9	27.3
12H	24.7	25.4	25.1	25.8	26.2	26.1	26.8	26.5	27.2	27.6
8H 4H	24.7	25.4	25.1	25.8	26.2	24.5	25.2	24.9	25.6	26.0
6H	24.9	25.5	25.3	25.9	26.3	25.6	26.2	26.0	26.6	27.0
8H	24.9	25.5	25.4	25.9	26.3	26.1	26.6	26.5	27.0	27.5
12H	24.9	25.4	25.4	25.8	26.3	26.5	27.0	27.0	27.5	27.9
12H 4H	24.7	25.4	25.1	25.8	26.2	24.4	25.1	24.9	25.5	25.9
6H	24.9	25.5	25.4	25.9	26.3	25.6	26.1	26.0	26.5	27.0
8H	25.0	25.4	25.4	25.9	26.4	26.1	26.6	26.6	27.0	27.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.6					+ 0.4 / - 0.4				
1.5H	+ 0.6 / - 0.8					+ 0.3 / - 0.5				
2.0H	+ 1.7 / - 1.6					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 6606 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.6)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-01

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	66	56	50	65	56	50	44
0.80	76	66	60	75	66	60	74	65	59	54
1.00	84	74	68	83	74	68	81	75	67	61
1.25	90	81	75	89	81	75	86	79	74	68
1.50	94	86	80	93	85	80	90	84	79	72
2.00	100	93	88	98	92	87	95	90	85	78
2.50	103	97	92	101	95	91	97	93	89	81
3.00	106	100	96	104	99	94	100	96	92	85
4.00	109	104	100	107	102	99	103	99	96	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		

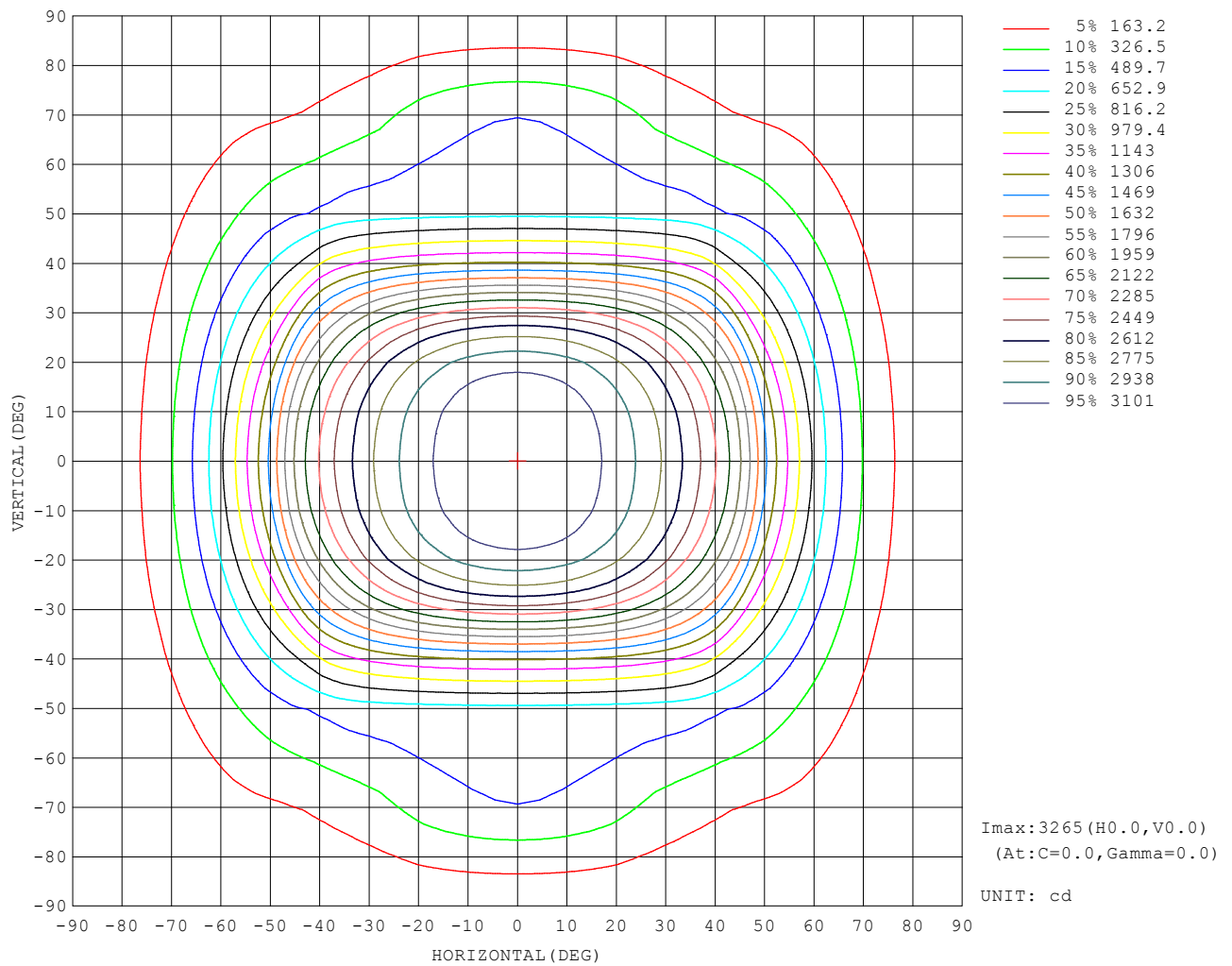
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-01

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



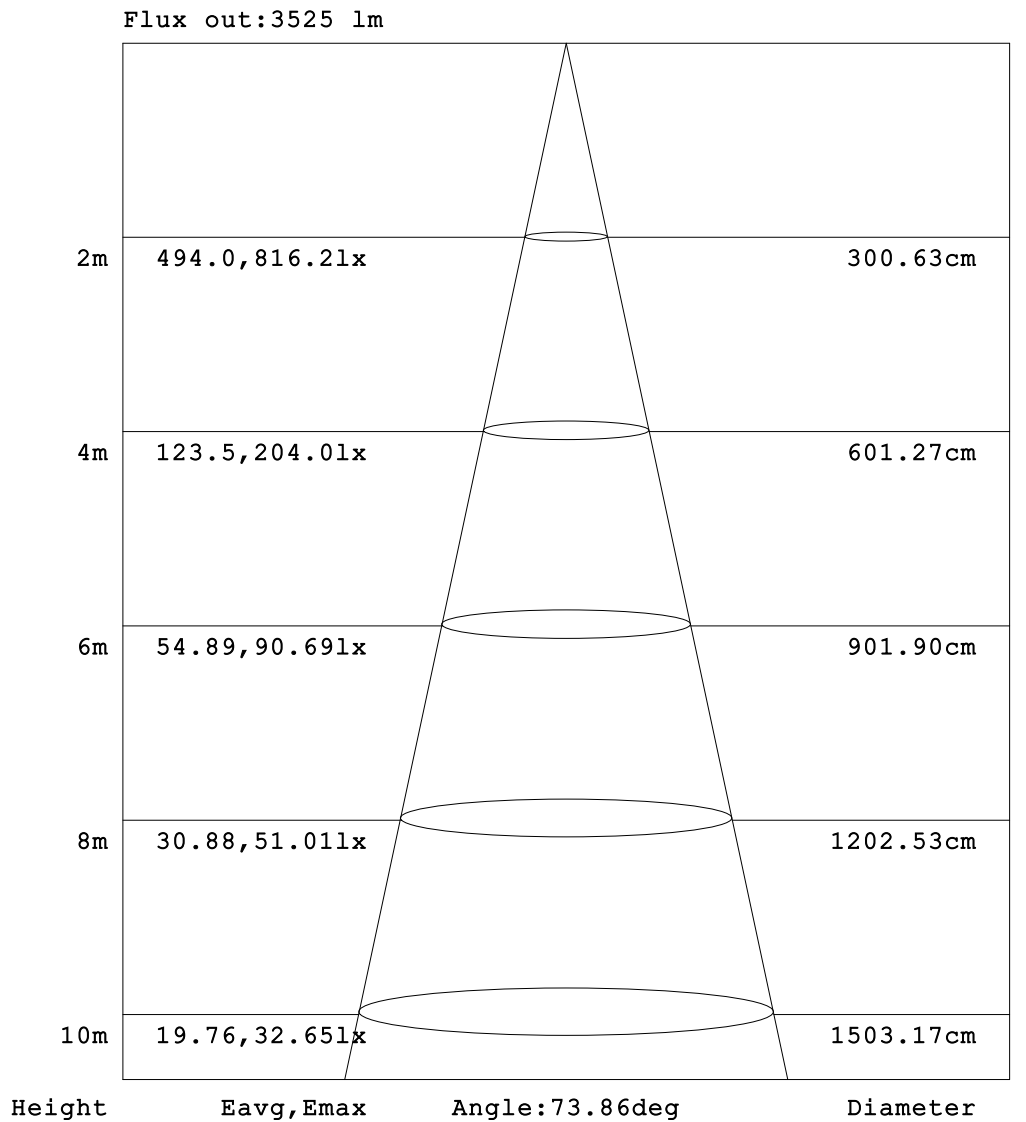
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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.

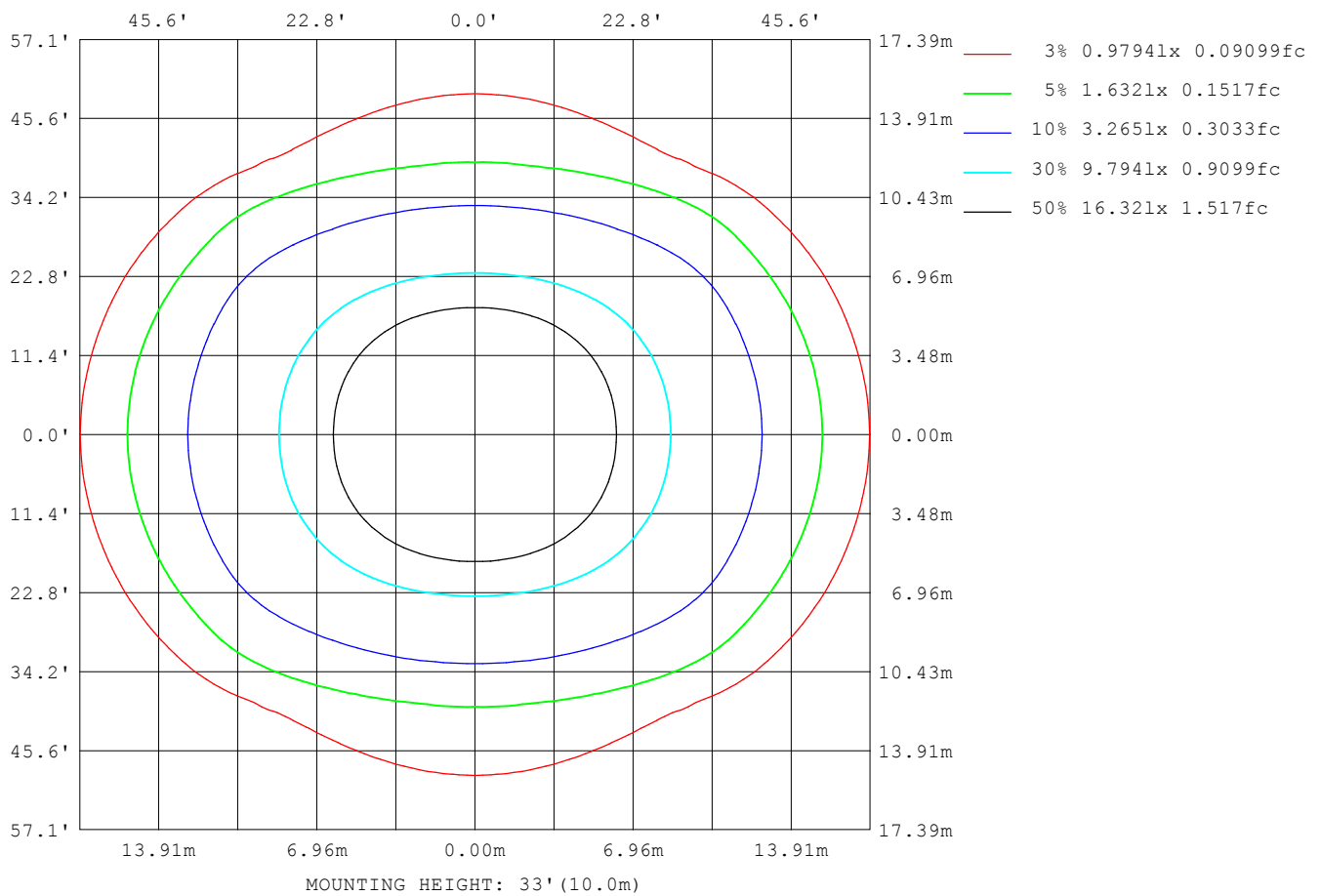
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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



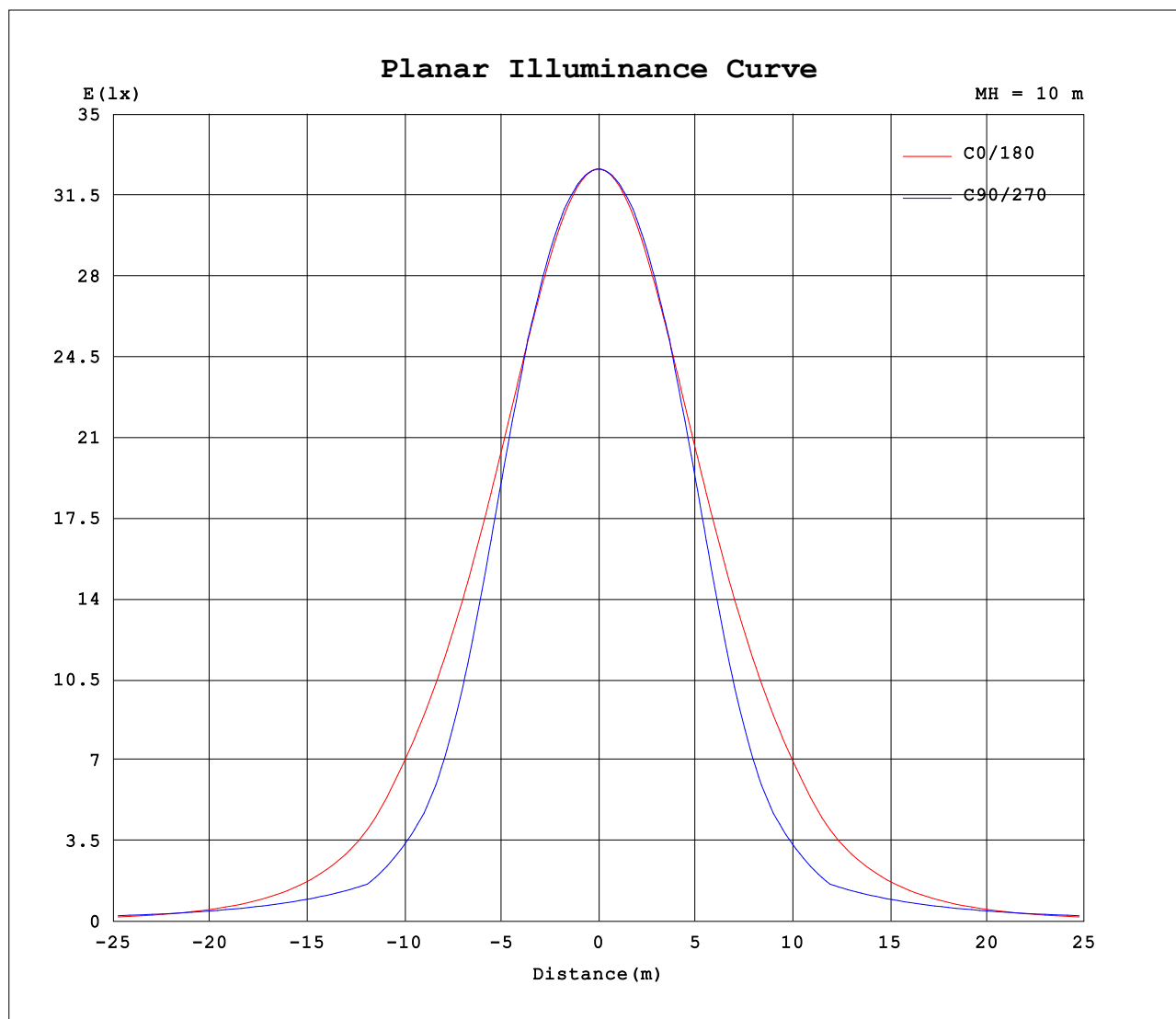
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-01

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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:

Assessor: