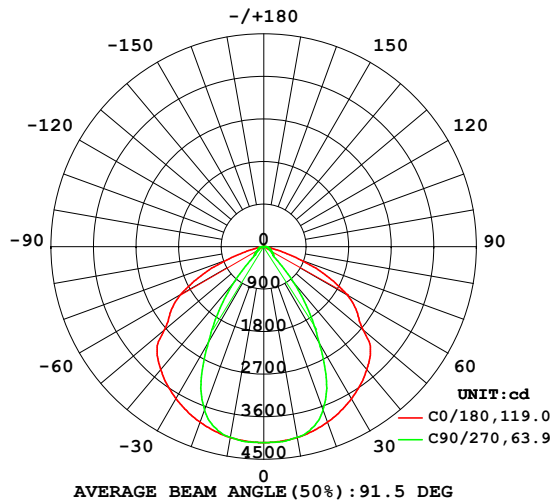


LUMINAIRE PHOTOMETRIC TEST REPORT

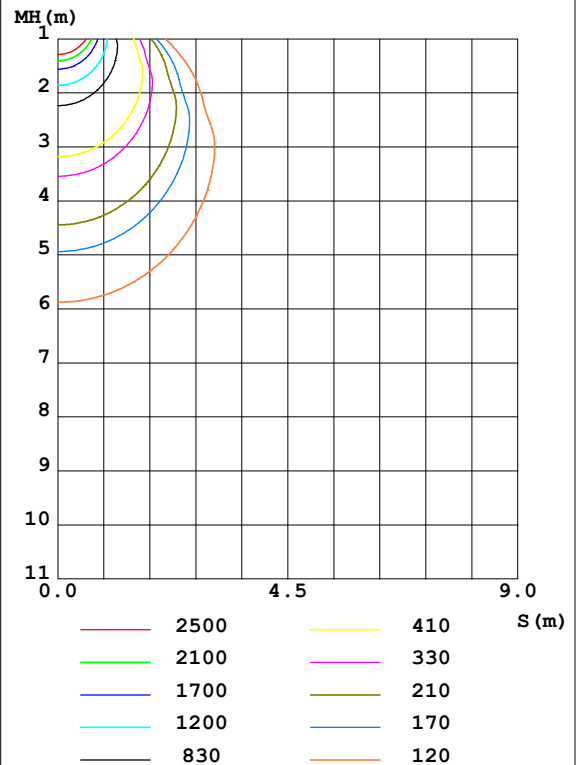
Test:U:230.0V I:0.2595A P:57.76W PF:0.9676 Lamp Flux:7160.76x1 lm		
NAME: LHB03-060	TYPE:60W	WEIGHT:
SPEC.:5000K Ra80 60120DEG L00302	DIM.: 0.336*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.28*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.97 lm/W			
MODEL	LHB03-060	I _{max} (cd)	4145	S/MH (C0/180)	1.34
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH (C90/270)	0.95
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	7160.8	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	7160.76	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)	230	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:2017-07-01

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	4132	4135	4141	4135	4132	4136	4141	4136	0- 5	98.99	98.99	1.38,1.38
10	4100	4100	4094	4100	4100	4102	4094	4102	5- 10	294.7	393.6	5.5,5.5
15	4036	4027	3970	4027	4036	4028	3970	4028	10- 15	481.8	875.4	12.2,12.2
20	3950	3884	3674	3884	3950	3887	3674	3887	15- 20	649.1	1524	21.3,21.3
25	3843	3623	3138	3623	3843	3637	3138	3637	20- 25	778.1	2303	32.2,32.2
30	3713	3175	2343	3175	3713	3182	2343	3182	25- 30	845.3	3148	44,44
35	3567	2505	1660	2505	3567	2518	1660	2518	30- 35	838.1	3986	55.7,55.7
40	3394	1749	977.2	1749	3394	1762	977.2	1762	35- 40	773.2	4759	66.5,66.5
45	3193	1286	358.0	1286	3193	1292	358.0	1292	40- 45	658.5	5418	75.7,75.7
50	2749	882.0	248.2	882.0	2749	881.6	248.2	881.6	45- 50	523.2	5941	83,83
55	2407	542.7	202.1	542.7	2407	541.9	202.1	541.9	50- 55	399.1	6340	88.5,88.5
60	2028	384.6	156.0	384.6	2028	388.7	156.0	388.7	55- 60	300.0	6640	92.7,92.7
65	1478	272.8	137.7	272.8	1478	271.9	137.7	271.9	60- 65	212.6	6853	95.7,95.7
70	835.8	198.5	119.4	198.5	835.8	198.3	119.4	198.3	65- 70	143.1	6996	97.7,97.7
75	334.1	126.4	99.82	126.4	334.1	127.0	99.82	127.0	70- 75	87.26	7083	98.9,98.9
80	93.54	54.73	69.94	54.73	93.54	55.95	69.94	55.95	75- 80	46.91	7130	99.6,99.6
85	14.16	30.77	38.78	30.77	14.16	31.48	38.78	31.48	80- 85	22.31	7152	99.9,99.9
90	2.064	6.150	7.624	6.150	2.064	6.132	7.624	6.132	85- 90	8.637	7161	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): 5417.6 lm

%lum = 75.7%

%lamp = 75.7%

Conical surface Flux(120deg): 6640 lm

%lum = 92.7%

%lamp = 92.7%

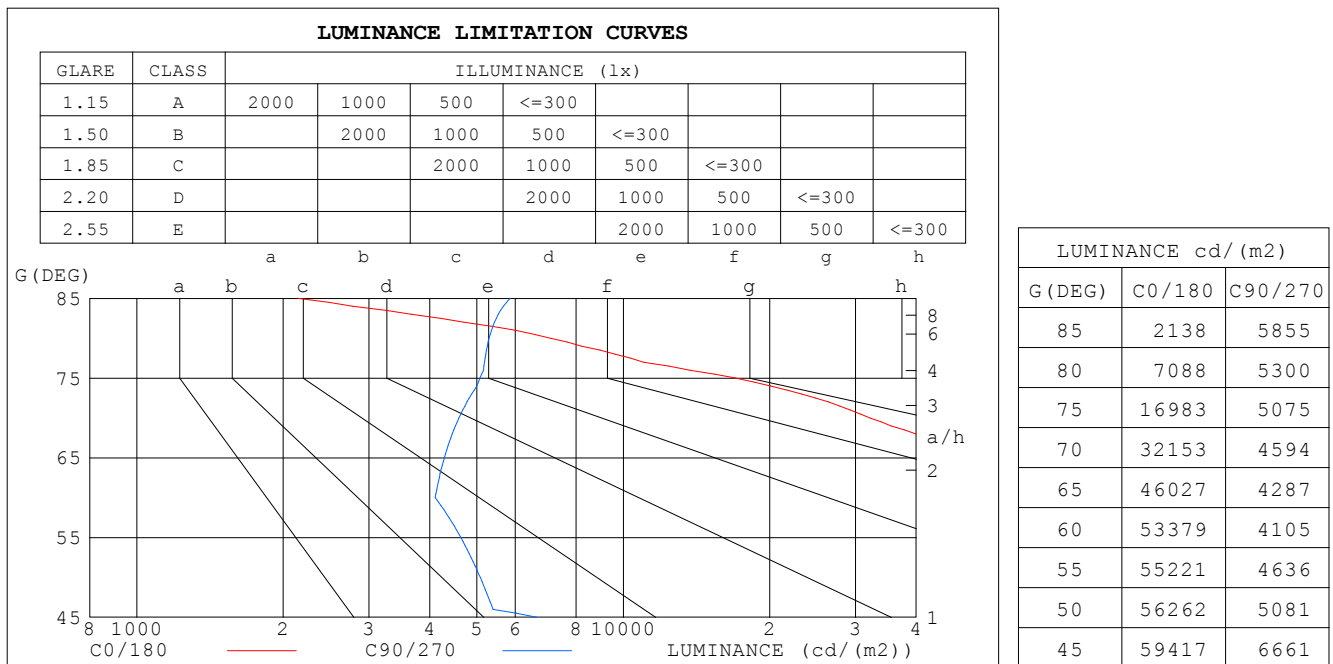
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-01

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

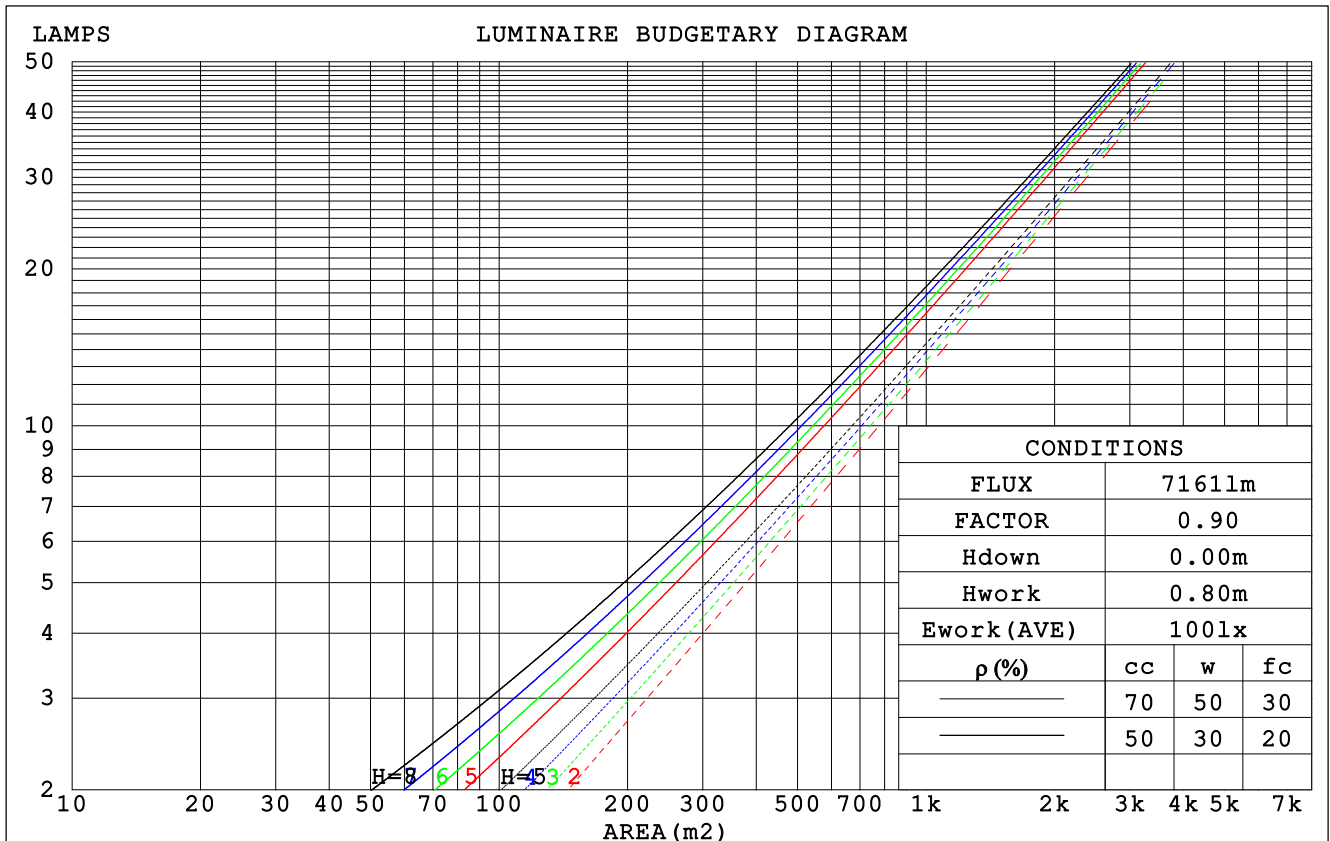
Checker:

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	.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	.87	.95	.91	.86	.92	.88	.84	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.76	.84	.79	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.76	.70	.66	.74	.69	.65	.72	.68	.64	.62
5.0	.73	.65	.60	.72	.65	.59	.70	.64	.59	.68	.63	.58	.66	.62	.58	.56
6.0	.67	.59	.54	.66	.59	.53	.64	.58	.53	.63	.57	.53	.61	.56	.52	.50
7.0	.61	.54	.49	.61	.53	.48	.59	.53	.48	.58	.52	.48	.57	.51	.47	.46
8.0	.57	.49	.44	.56	.49	.44	.55	.48	.44	.54	.48	.44	.53	.47	.43	.42
9.0	.53	.45	.40	.52	.45	.40	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.37	.48	.42	.37	.48	.41	.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: 2017-07-01

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	.234	.133	.042	.227	.130	.041	.214	.123	.039	.203	.117	.037	.192	.111	.036	
2.0	.226	.124	.038	.221	.121	.037	.209	.116	.036	.199	.112	.035	.190	.107	.034	
3.0	.215	.114	.034	.210	.112	.034	.200	.108	.033	.191	.105	.032	.183	.101	.031	
4.0	.203	.105	.031	.198	.104	.031	.190	.101	.030	.182	.098	.029	.175	.095	.029	
5.0	.191	.098	.028	.187	.096	.028	.180	.094	.028	.173	.091	.027	.166	.089	.027	
6.0	.181	.091	.026	.177	.089	.026	.170	.087	.025	.164	.085	.025	.158	.083	.025	
7.0	.171	.084	.024	.167	.083	.024	.161	.082	.024	.156	.080	.023	.151	.078	.023	
8.0	.161	.079	.022	.159	.078	.022	.153	.077	.022	.148	.075	.022	.143	.074	.021	
9.0	.153	.074	.021	.150	.073	.021	.146	.072	.020	.141	.071	.020	.137	.069	.020	
10.0	.145	.070	.019	.143	.069	.019	.139	.068	.019	.135	.067	.019	.131	.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	.164	.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	.082	.054	.033	.047	.032	.019	.015	.010	.006		
6.0	.131	.080	.044	.113	.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	.114	.062	.028	.098	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003		
10.0	.109	.058	.024	.094	.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:2017-07-01

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	25.9	27.2	26.2	27.4	27.5	17.2	18.4	17.4	18.6	18.8
3H	26.7	27.9	27.0	28.1	28.3	17.4	18.6	17.7	18.8	19.0
4H	26.8	27.9	27.1	28.1	28.4	17.7	18.8	18.0	19.0	19.3
6H	26.8	27.8	27.1	28.1	28.3	18.0	19.0	18.3	19.3	19.5
8H	26.7	27.7	27.1	28.0	28.3	18.1	19.1	18.4	19.4	19.6
12H	26.7	27.6	27.0	27.9	28.2	18.2	19.2	18.6	19.5	19.7
4H 2H	25.7	26.8	26.0	27.0	27.3	17.7	18.8	18.0	19.1	19.3
3H	26.5	27.5	26.9	27.7	28.0	18.1	19.0	18.4	19.3	19.6
4H	26.6	27.5	27.0	27.8	28.1	18.4	19.2	18.8	19.6	19.9
6H	26.6	27.4	27.0	27.7	28.1	18.8	19.5	19.2	19.9	20.2
8H	26.6	27.3	27.0	27.6	28.0	19.0	19.6	19.4	20.0	20.4
12H	26.5	27.2	27.0	27.6	27.9	19.1	19.8	19.5	20.1	20.5
8H 4H	26.5	27.2	26.9	27.6	28.0	18.6	19.3	19.0	19.7	20.0
6H	26.5	27.1	27.0	27.5	27.9	19.0	19.6	19.5	20.0	20.4
8H	26.5	27.0	27.0	27.4	27.9	19.3	19.8	19.7	20.2	20.7
12H	26.5	26.9	26.9	27.3	27.8	19.5	20.0	20.0	20.4	20.9
12H 4H	26.5	27.1	26.9	27.5	27.9	18.6	19.2	19.0	19.6	20.0
6H	26.5	27.0	26.9	27.4	27.9	19.1	19.6	19.5	20.0	20.4
8H	26.5	26.9	26.9	27.3	27.8	19.3	19.8	19.8	20.2	20.7
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 2.4					+ 1.2 / - 1.6				
1.5H	+ 2.2 / - 4.4					+ 1.5 / - 1.6				
2.0H	+ 3.4 / - 7.2					+ 1.6 / - 1.2				

CIE Pub.117 Corrected 7161 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.8)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	70	61	55	70	61	55	69	60	55	50
0.80	80	71	65	79	71	65	78	70	65	59
1.00	87	79	73	86	78	73	84	79	72	67
1.25	93	85	80	92	85	80	90	83	79	73
1.50	97	90	85	96	89	84	93	88	83	77
2.00	102	96	91	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	107	102	98	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	99	91
5.00	112	108	106	110	107	104	105	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

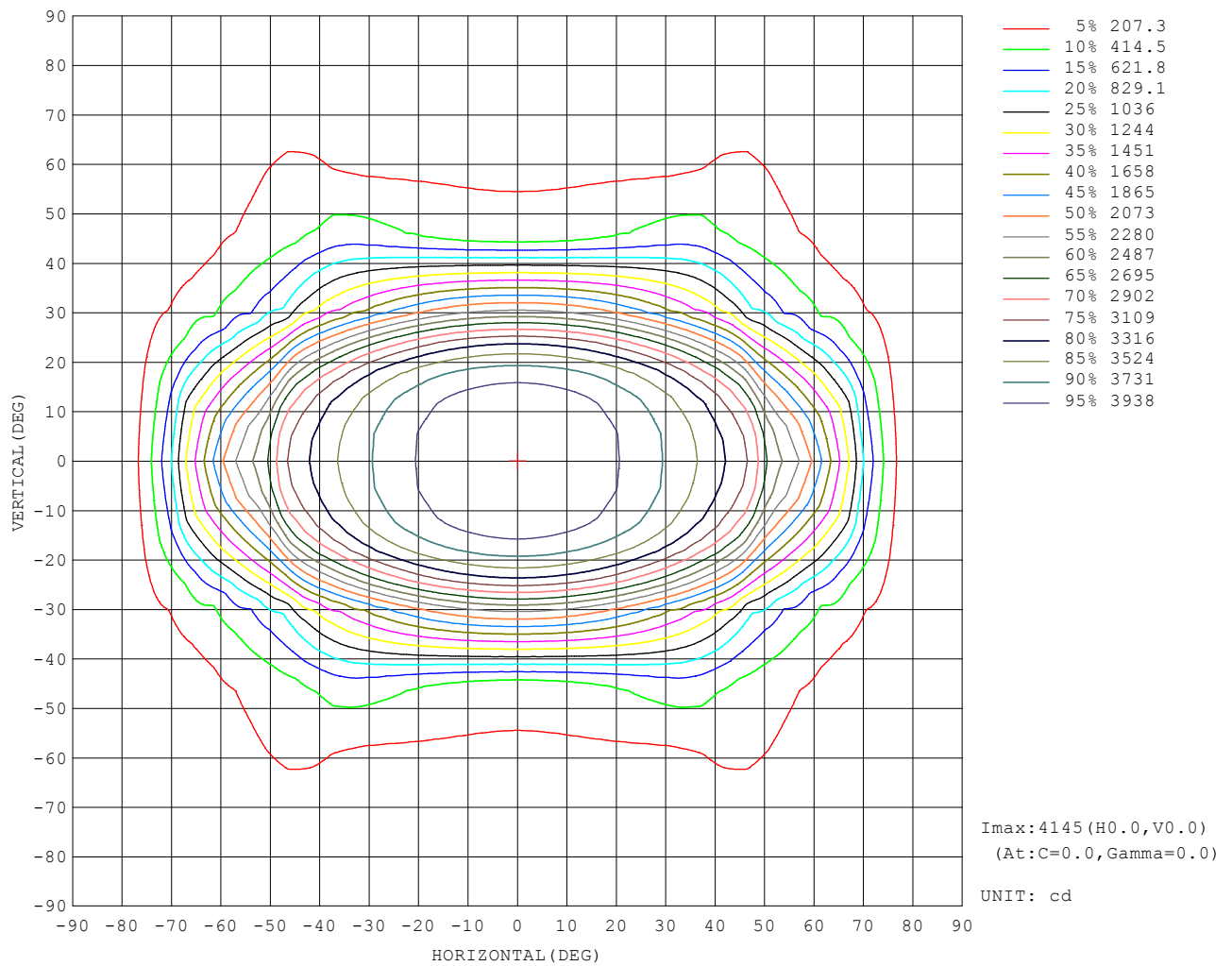
C Range: 0 - 360DEG
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 Test Speed: HIGH
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 Operators:
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Checker:

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



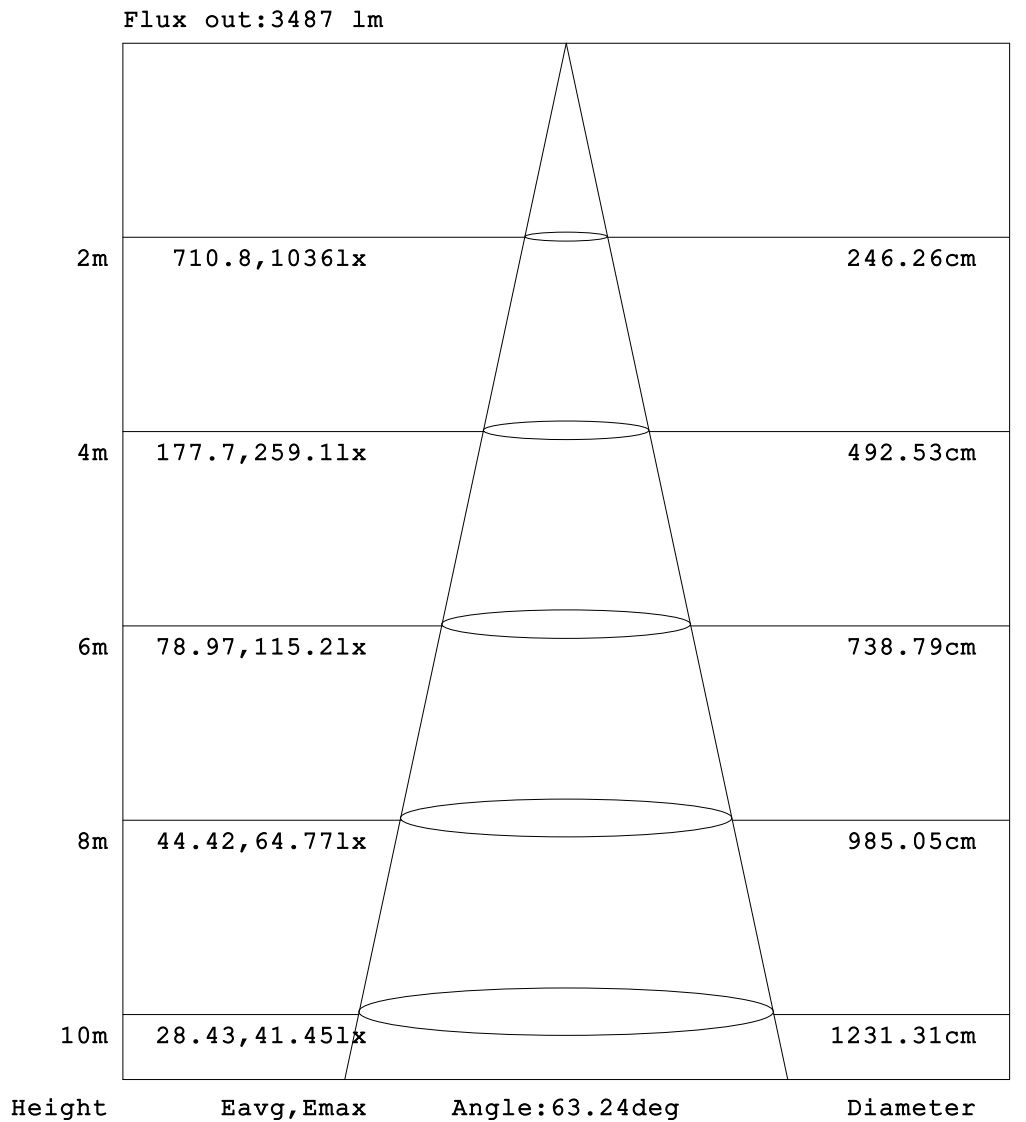
C Range: 0 - 360DEG
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Operators:
Test Date: 2017-07-01

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.

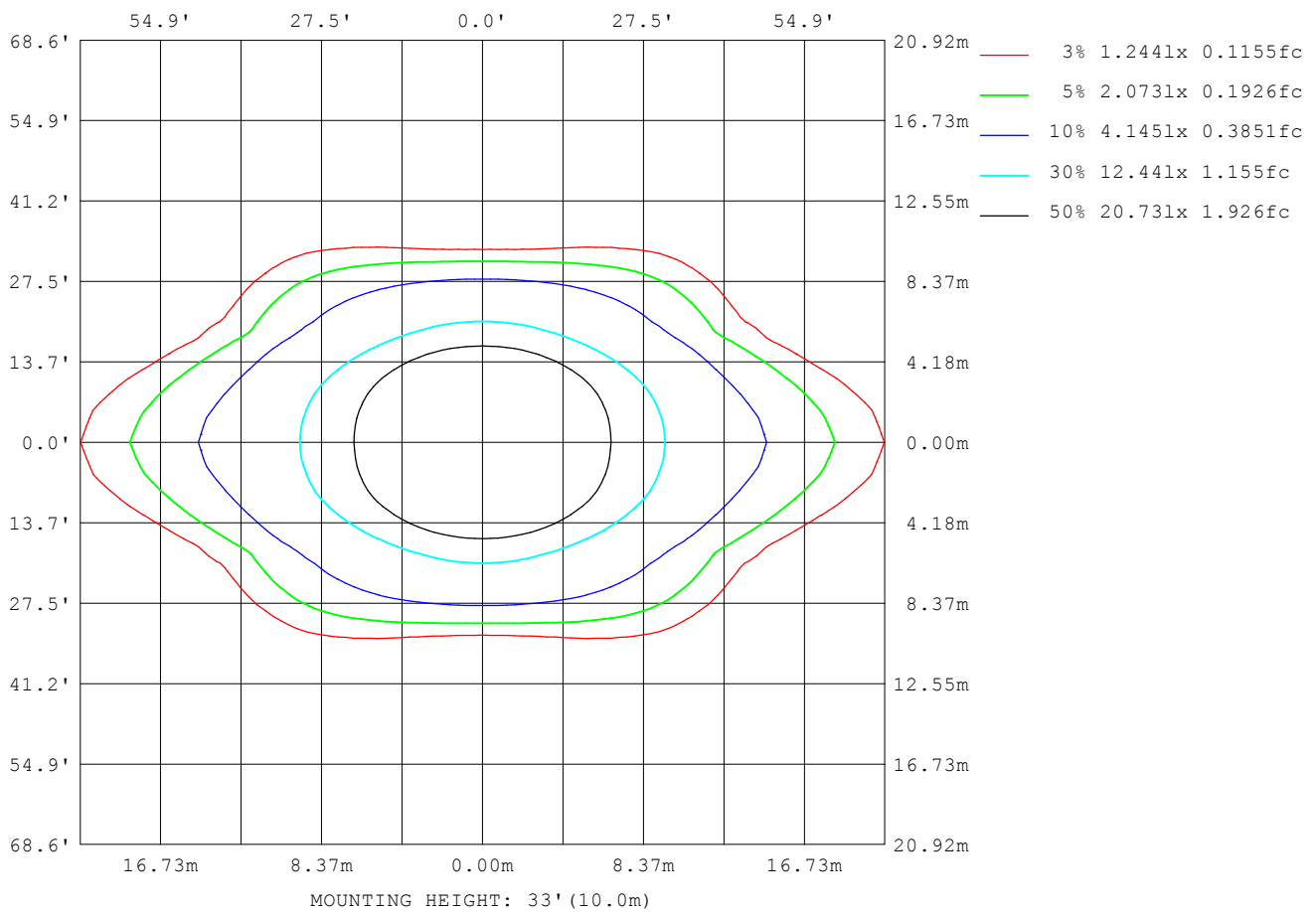
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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



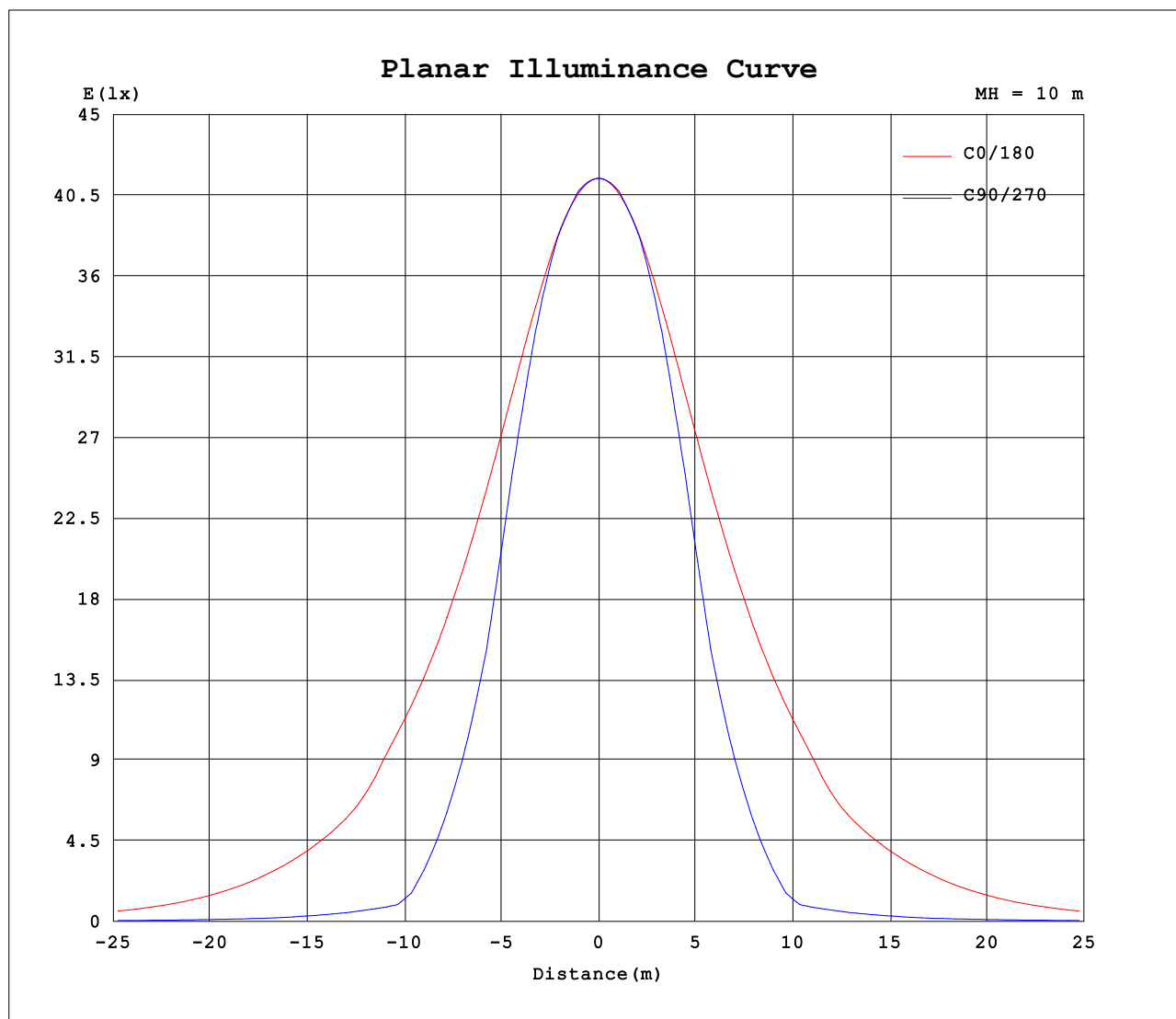
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
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γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

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:

UNIT: cd

Assessor: