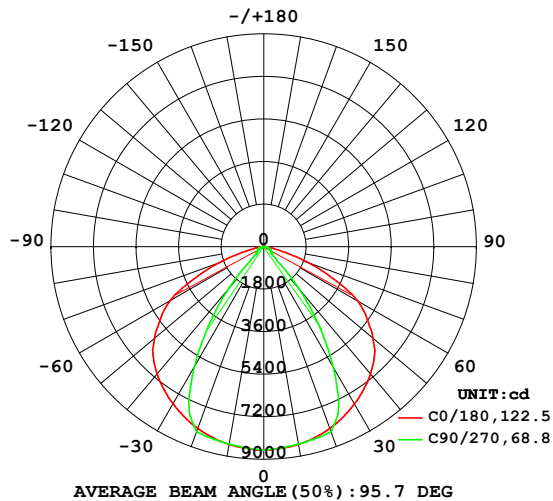


LUMINAIRE PHOTOMETRIC TEST REPORT

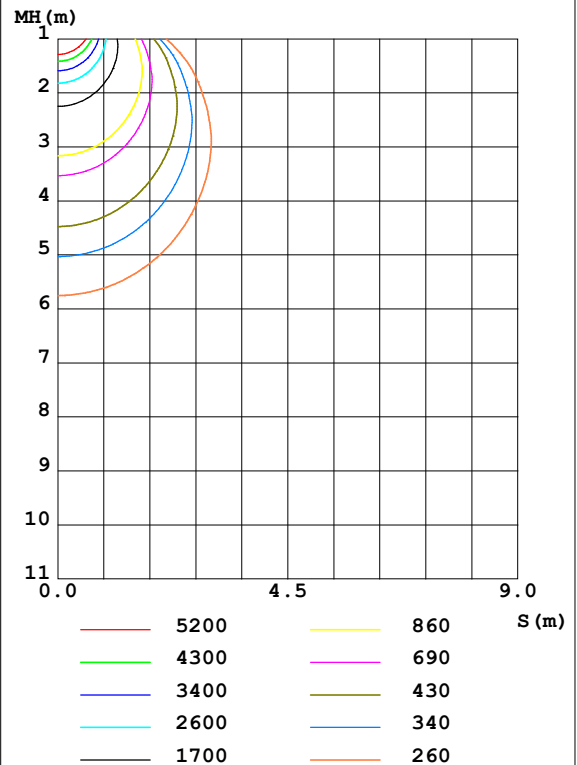
Test:U:230.1V I:0.5329A P:119.2W PF:0.9719 Lamp Flux:16176.6x1 lm		
NAME: LHB03-120	TYPE:120W	WEIGHT:
SPEC.:5000K Ra70 60*120DEG L00302	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 135.74 lm/W			
MODEL	LHB03-120	I _{max} (cd)	8609	S/MH(C0/180)	1.33
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.01
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	16177	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	16176.6	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	1.15

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:2017-03-02

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	8572	8544	8546	8544	8572	8544	8546	8544	0- 5	204.9	204.9	1.27,1.27
10	8496	8463	8483	8463	8496	8463	8483	8463	5- 10	608.7	813.6	5.03,5.03
15	8363	8359	8410	8359	8363	8359	8410	8359	10- 15	998.7	1812	11.2,11.2
20	8181	8200	8336	8200	8181	8200	8336	8200	15- 20	1368	3180	19.7,19.7
25	7955	7990	7490	7990	7955	7990	7490	7990	20- 25	1691	4871	30.1,30.1
30	7680	7396	5885	7396	7680	7396	5885	7396	25- 30	1894	6765	41.8,41.8
35	7374	6219	4087	6219	7374	6219	4087	6219	30- 35	1926	8691	53.7,53.7
40	7028	4582	2288	4582	7028	4582	2288	4582	35- 40	1797	10488	64.8,64.8
45	6615	3252	663.5	3252	6615	3252	663.5	3252	40- 45	1526	12014	74.3,74.3
50	6031	2071	431.3	2071	6031	2071	431.3	2071	45- 50	1207	13222	81.7,81.7
55	5346	1123	373.2	1123	5346	1123	373.2	1123	50- 55	953.6	14175	87.6,87.6
60	4584	822.9	315.0	822.9	4584	822.9	315.0	822.9	55- 60	729.6	14905	92.1,92.1
65	3297	575.1	264.2	575.1	3297	575.1	264.2	575.1	60- 65	527.1	15432	95.4,95.4
70	2034	397.9	213.3	397.9	2034	397.9	213.3	397.9	65- 70	353.0	15785	97.6,97.6
75	898.1	255.5	162.4	255.5	898.1	255.5	162.4	255.5	70- 75	213.9	15999	98.9,98.9
80	275.0	110.3	111.8	110.3	275.0	110.3	111.8	110.3	75- 80	111.1	16110	99.6,99.6
85	56.40	61.98	61.21	61.98	56.40	61.98	61.21	61.98	80- 85	48.89	16159	99.9,99.9
90	5.046	11.08	10.60	11.08	5.046	11.08	10.60	11.08	85- 90	17.74	16177	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): 12014 lm

%lum = 74.3%

%lamp = 74.3%

Conical surface Flux(120deg): 14905 lm

%lum = 92.1%

%lamp = 92.1%

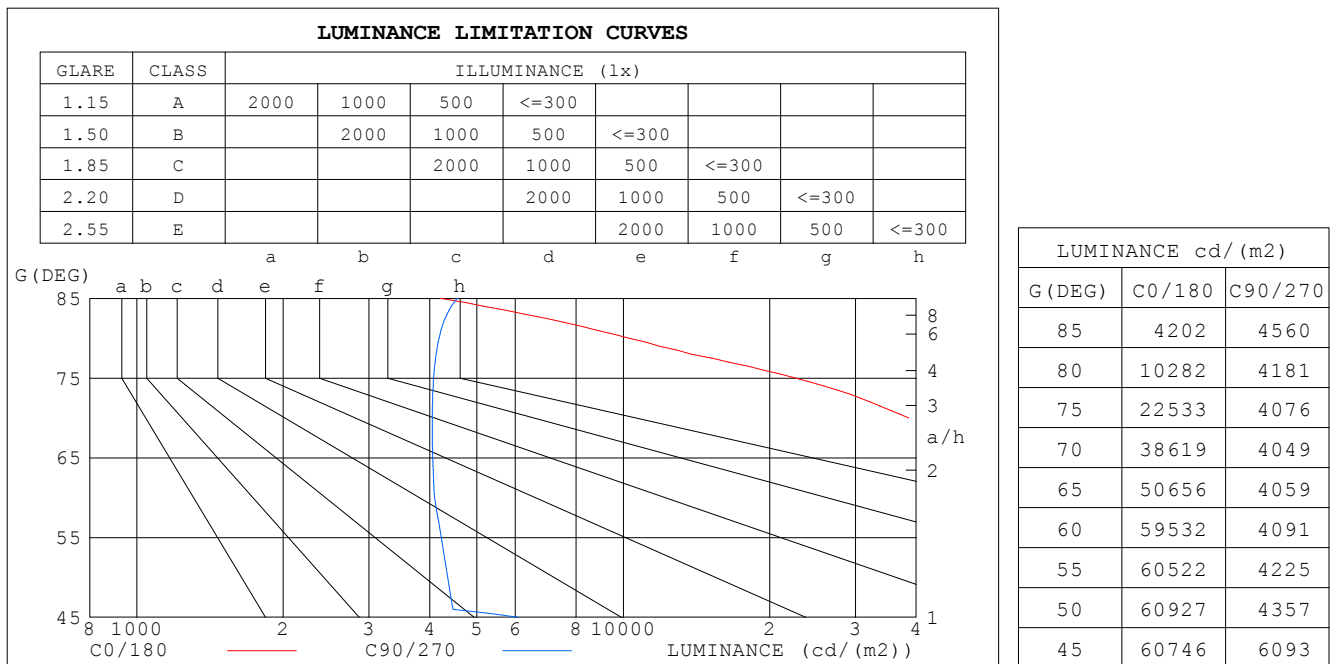
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-02

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: 2017-03-02

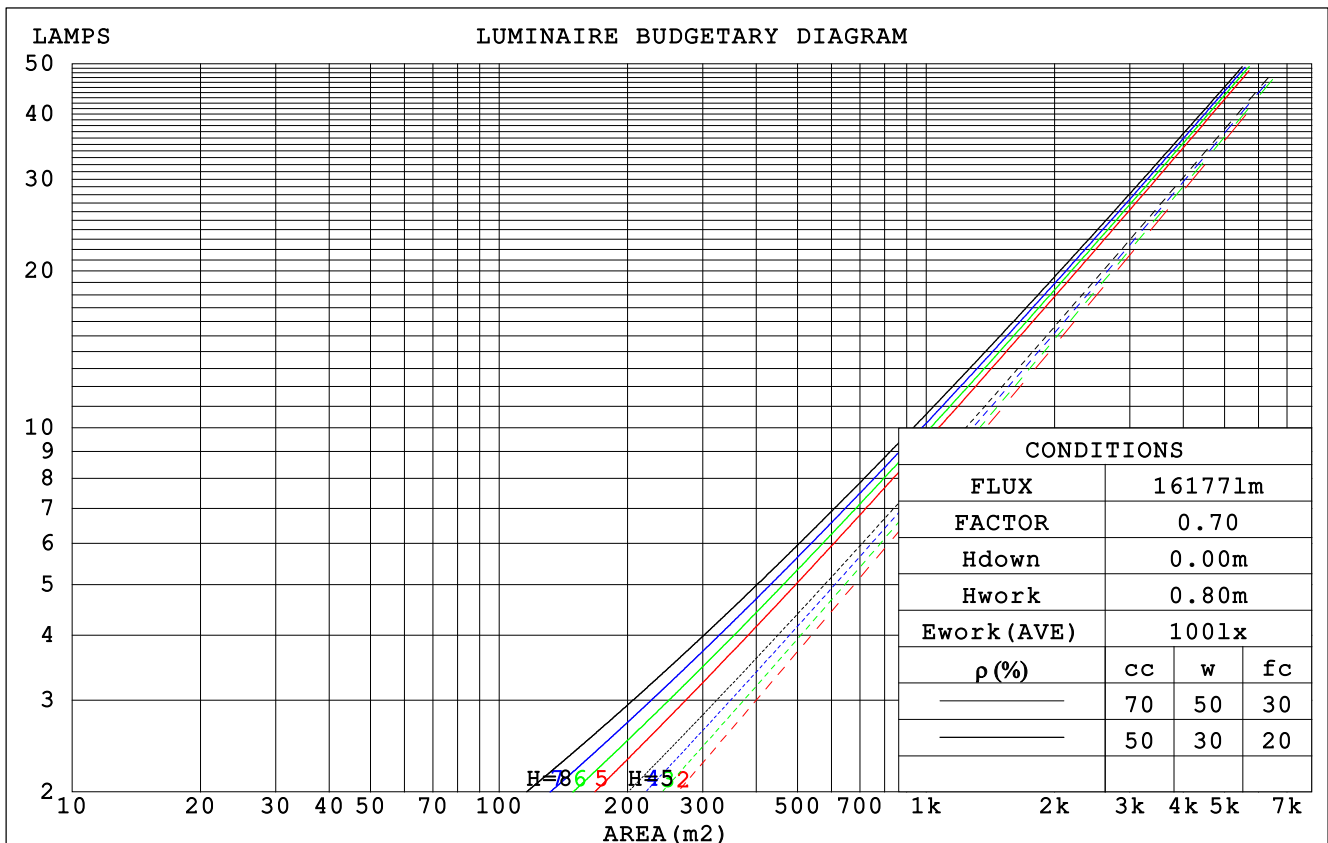
Checker:

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	1.04	1.01	1.05	1.02	.00	1.01	.99	.97	.97	.95	.94	.94	.92	.91	.89
2.0	.97	.91	.87	.95	.90	.86	.92	.87	.84	.88	.85	.82	.86	.83	.80	.78
3.0	.87	.81	.75	.86	.80	.75	.83	.78	.73	.80	.76	.72	.78	.74	.71	.69
4.0	.79	.72	.66	.78	.71	.66	.75	.70	.65	.73	.68	.64	.71	.67	.63	.61
5.0	.72	.64	.59	.71	.64	.58	.69	.63	.58	.67	.62	.57	.65	.61	.57	.55
6.0	.66	.58	.52	.65	.58	.52	.63	.57	.52	.62	.56	.51	.60	.55	.51	.49
7.0	.60	.53	.47	.60	.52	.47	.58	.52	.47	.57	.51	.47	.56	.50	.46	.45
8.0	.56	.48	.43	.55	.48	.43	.54	.47	.43	.53	.47	.42	.52	.46	.42	.40
9.0	.52	.44	.39	.51	.44	.39	.50	.43	.39	.49	.43	.39	.48	.43	.39	.37
10.0	.48	.41	.36	.47	.41	.36	.46	.40	.36	.46	.40	.36	.45	.39	.36	.34



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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	.238	.135	.043	.231	.132	.042	.218	.125	.040	.206	.119	.038	.196	.113	.037	
2.0	.231	.126	.039	.225	.124	.038	.214	.119	.037	.203	.114	.036	.194	.110	.035	
3.0	.219	.117	.035	.214	.115	.034	.204	.111	.034	.195	.107	.033	.187	.103	.032	
4.0	.207	.107	.032	.202	.106	.031	.194	.103	.031	.186	.100	.030	.178	.097	.030	
5.0	.195	.099	.029	.191	.098	.029	.183	.095	.028	.176	.093	.028	.170	.091	.027	
6.0	.184	.092	.026	.180	.091	.026	.173	.089	.026	.167	.087	.026	.161	.085	.025	
7.0	.173	.086	.024	.170	.085	.024	.164	.083	.024	.159	.081	.024	.153	.080	.023	
8.0	.164	.080	.023	.161	.079	.022	.156	.078	.022	.151	.076	.022	.146	.075	.022	
9.0	.155	.075	.021	.153	.074	.021	.148	.073	.021	.143	.072	.021	.139	.071	.020	
10.0	.147	.071	.020	.145	.070	.020	.141	.069	.019	.137	.068	.019	.133	.067	.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	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.164	.132	.105	.141	.114	.091	.096	.079	.064	.056	.046	.037	.018	.015	.012	
3.0	.155	.114	.082	.133	.098	.071	.091	.068	.050	.053	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.126	.086	.056	.086	.060	.040	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.052	.119	.077	.046	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.132	.080	.043	.114	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.013	.014	.009	.004	
8.0	.120	.068	.031	.103	.059	.027	.071	.041	.019	.042	.024	.012	.013	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.068	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.094	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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	26.8	28.1	27.1	28.3	28.5	17.7	19.0	18.0	19.2	19.4
3H	27.8	29.0	28.1	29.2	29.4	17.9	19.0	18.1	19.3	19.5
4H	28.0	29.1	28.3	29.3	29.6	18.0	19.1	18.3	19.3	19.5
6H	28.0	29.0	28.3	29.3	29.5	18.1	19.1	18.4	19.4	19.6
8H	27.9	28.9	28.3	29.2	29.5	18.1	19.1	18.5	19.4	19.7
12H	27.9	28.9	28.2	29.1	29.4	18.2	19.1	18.5	19.4	19.7
4H 2H	26.6	27.7	26.9	27.9	28.2	18.3	19.5	18.6	19.7	19.9
3H	27.6	28.5	27.9	28.8	29.1	18.5	19.5	18.9	19.8	20.1
4H	27.8	28.6	28.1	29.0	29.3	18.7	19.5	19.0	19.9	20.2
6H	27.8	28.6	28.2	28.9	29.3	18.8	19.6	19.2	20.0	20.3
8H	27.8	28.5	28.2	28.8	29.2	18.9	19.6	19.3	20.0	20.4
12H	27.7	28.4	28.2	28.8	29.2	19.0	19.7	19.4	20.0	20.4
8H 4H	27.7	28.4	28.1	28.7	29.1	18.9	19.6	19.3	19.9	20.3
6H	27.7	28.3	28.1	28.7	29.1	19.1	19.7	19.5	20.1	20.5
8H	27.7	28.2	28.1	28.6	29.1	19.2	19.8	19.7	20.2	20.6
12H	27.7	28.1	28.1	28.5	29.0	19.4	19.8	19.8	20.3	20.7
12H 4H	27.6	28.3	28.0	28.6	29.0	18.9	19.5	19.3	19.9	20.3
6H	27.7	28.2	28.1	28.6	29.0	19.1	19.6	19.6	20.1	20.5
8H	27.6	28.1	28.1	28.5	29.0	19.3	19.7	19.8	20.2	20.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 1.2					+ 1.5 / - 2.5				
1.5H	+ 1.5 / - 3.6					+ 2.1 / - 2.2				
2.0H	+ 2.7 / - 7.2					+ 1.9 / - 1.2				

CIE Pub.117 Corrected 16177 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.7)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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) $k(RI) \times RCR = 5$									
$k = 0.60$	69	60	54	69	60	54	68	59	54	49
0.80	79	70	64	78	69	64	77	69	63	58
1.00	86	78	72	85	77	72	83	78	71	66
1.25	93	85	79	91	84	79	89	83	78	72
1.50	97	89	84	95	88	84	93	87	83	76
2.00	102	96	91	100	94	90	97	92	88	82
2.50	105	99	94	103	98	93	99	95	92	85
3.00	107	102	98	105	101	97	101	98	95	87
4.00	110	106	102	108	104	101	104	101	98	90
5.00	112	108	105	110	106	104	105	103	101	92
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

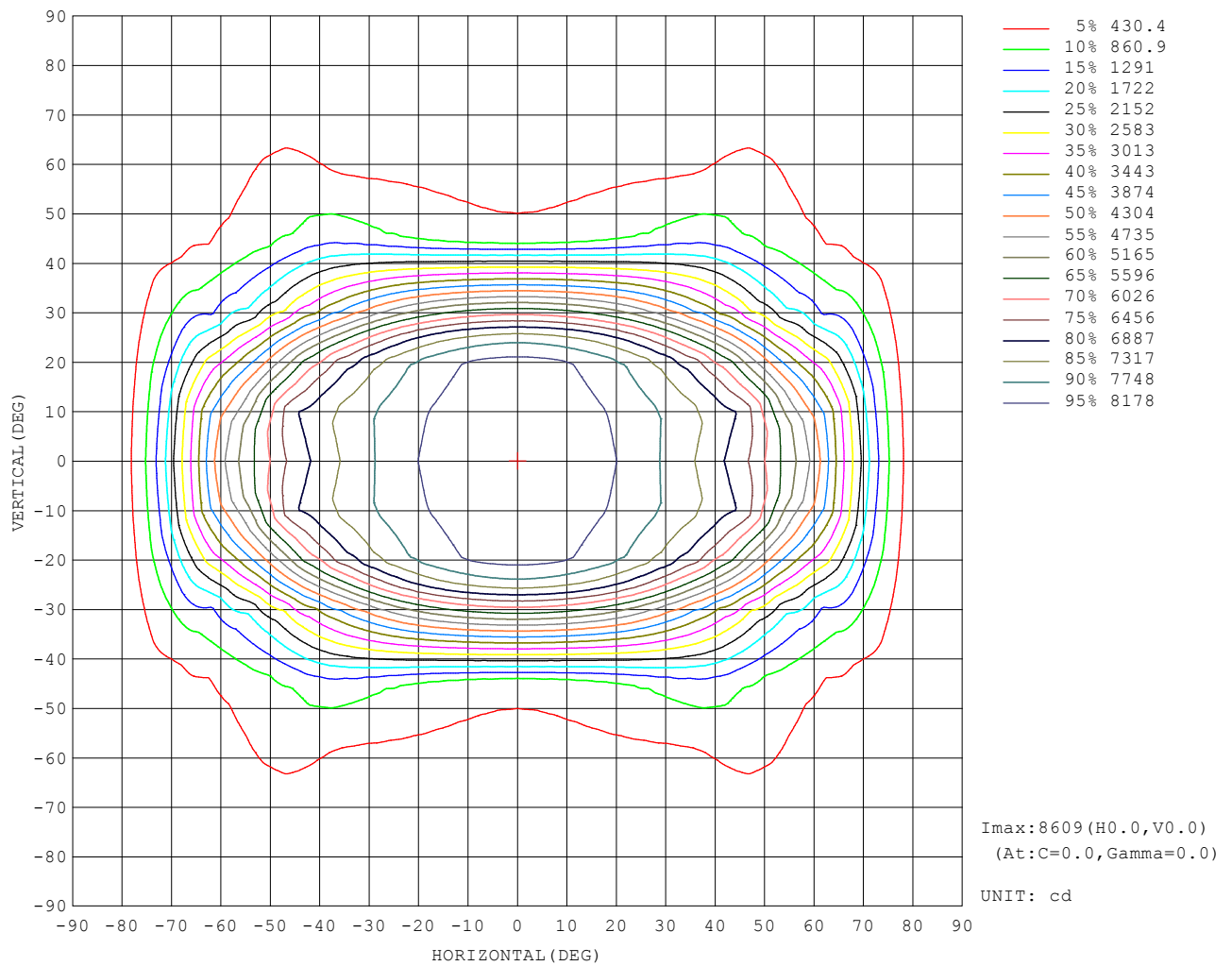
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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



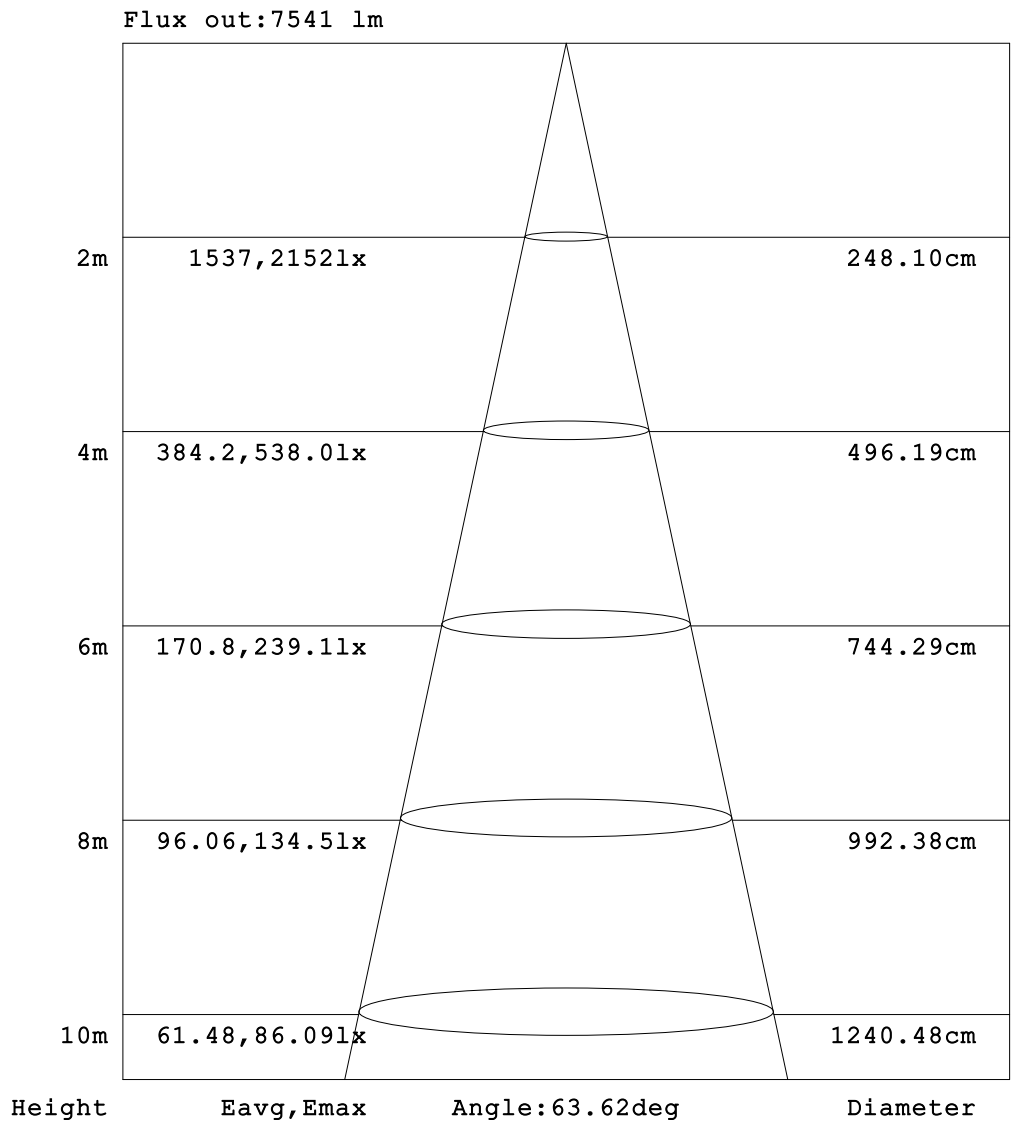
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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.

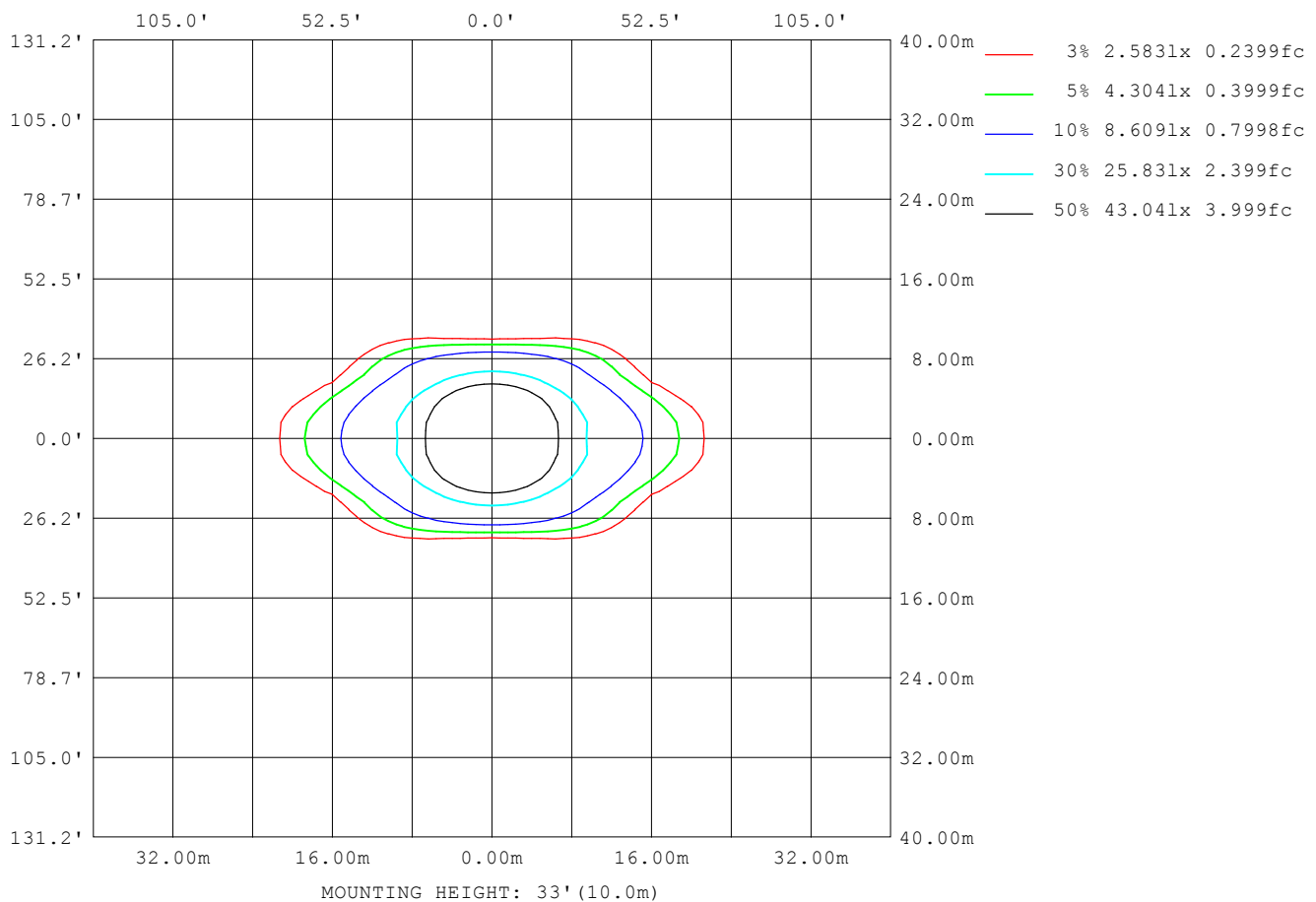
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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



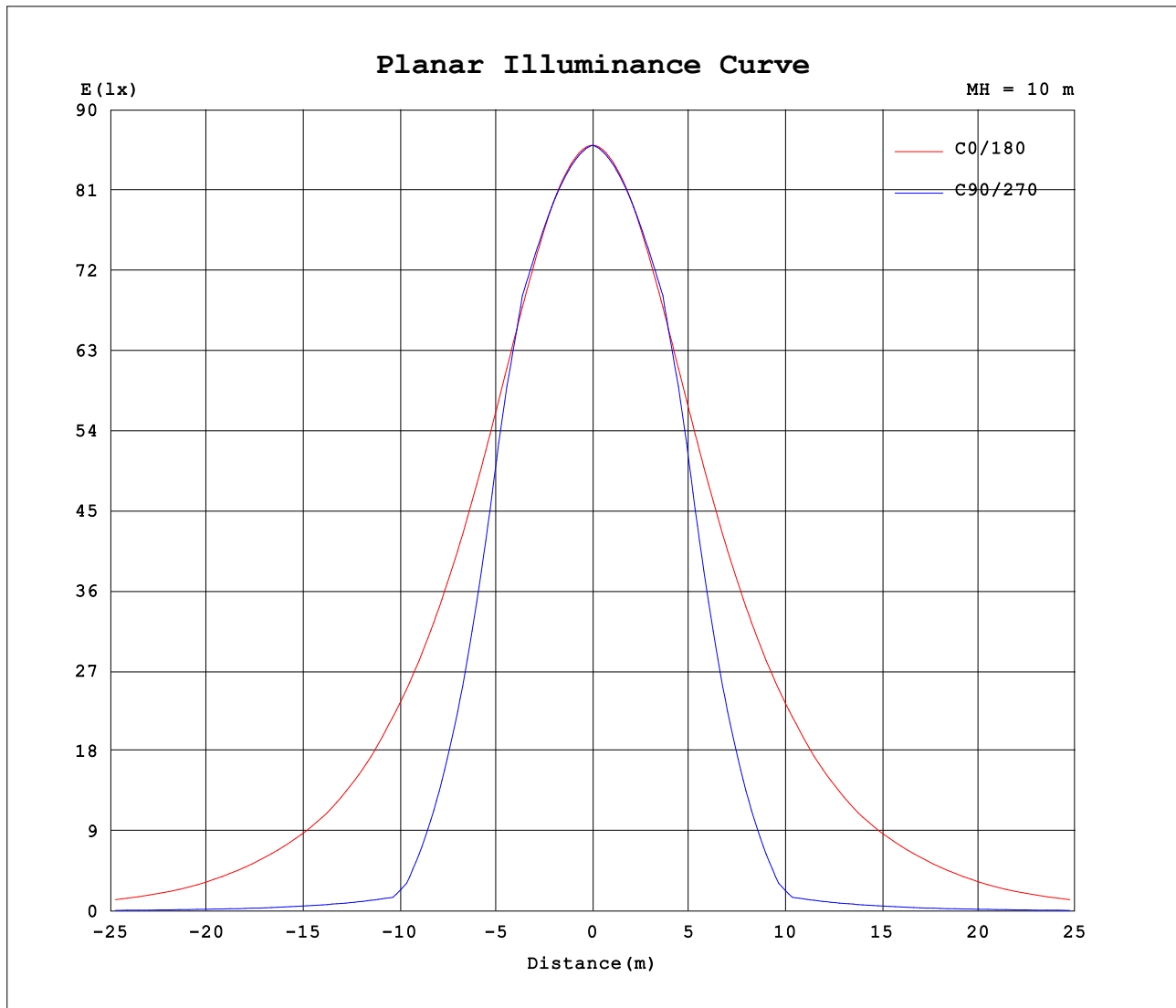
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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: 2017-03-02

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: