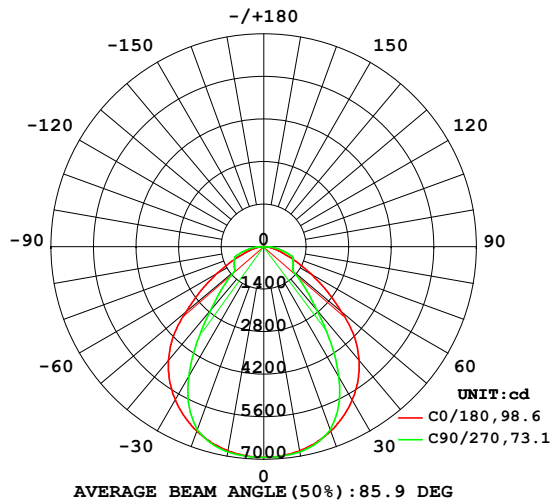


LUMINAIRE PHOTOMETRIC TEST REPORT

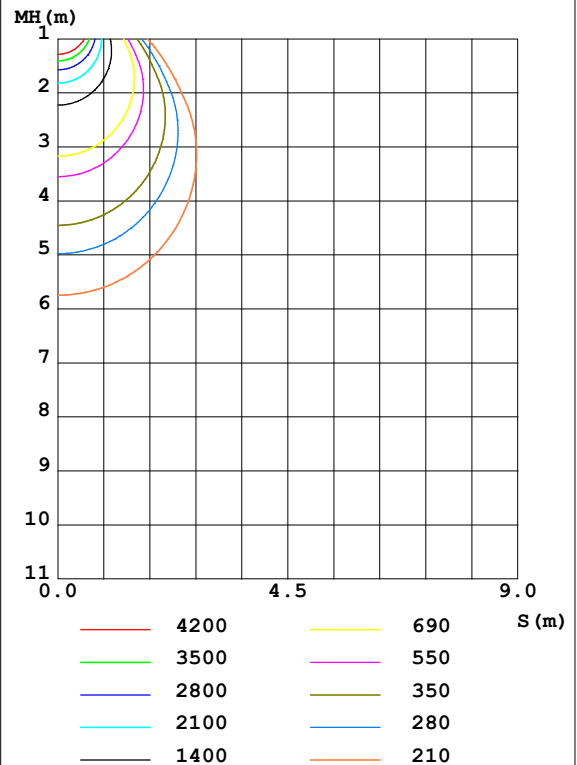
Test:U:230.0V I:0.5320A P:119.9W PF:0.9797 Lamp Flux:13985.6x1 lm		
NAME: LHB03-120	TYPE:120W	WEIGHT:
SPEC.:5000K Ra80 80100DEG L00303	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.66 lm/W			
MODEL	LHB03-120	Imax(cd)	6935	S/MH(C0/180)	1.25
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.06
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	13986	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	13985.6	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:2017-07-03

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	6906	6911	6916	6911	6906	6910	6916	6910	0- 5	165.5	165.5	1.18,1.18
10	6820	6837	6861	6837	6820	6837	6861	6837	5- 10	491.8	657.3	4.7,4.7
15	6670	6704	6701	6704	6670	6705	6701	6705	10- 15	802.9	1460	10.4,10.4
20	6455	6478	6416	6478	6455	6481	6416	6481	15- 20	1084	2544	18.2,18.2
25	6175	6129	5817	6129	6175	6136	5817	6136	20- 25	1314	3858	27.6,27.6
30	5825	5619	4943	5619	5825	5630	4943	5630	25- 30	1466	5324	38.1,38.1
35	5401	4942	3836	4942	5401	4958	3836	4958	30- 35	1515	6840	48.9,48.9
40	4883	4108	2705	4108	4883	4125	2705	4125	35- 40	1454	8293	59.3,59.3
45	4229	3198	1934	3198	4229	3210	1934	3210	40- 45	1304	9597	68.6,68.6
50	3335	2327	1241	2327	3335	2334	1241	2334	45- 50	1100	10697	76.5,76.5
55	2521	1662	1186	1662	2521	1663	1186	1663	50- 55	870.9	11568	82.7,82.7
60	1788	1102	1130	1102	1788	1096	1130	1096	55- 60	696.4	12264	87.7,87.7
65	1189	869.0	1075	869.0	1189	863.1	1075	863.1	60- 65	557.0	12821	91.7,91.7
70	746.1	633.9	1019	633.9	746.1	629.8	1019	629.8	65- 70	440.6	13262	94.8,94.8
75	463.7	396.0	767.9	396.0	463.7	394.0	767.9	394.0	70- 75	329.7	13591	97.2,97.2
80	259.6	255.9	516.3	255.9	259.6	254.4	516.3	254.4	75- 80	221.8	13813	98.8,98.8
85	87.59	132.6	264.7	132.6	87.59	131.7	264.7	131.7	80- 85	128.1	13941	99.7,99.7
90	4.164	11.44	13.11	11.44	4.164	11.25	13.11	11.25	85- 90	44.24	13986	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): 9597 lm

%lum = 68.6%

%lamp = 68.6%

Conical surface Flux(120deg): 12264 lm

%lum = 87.7%

%lamp = 87.7%

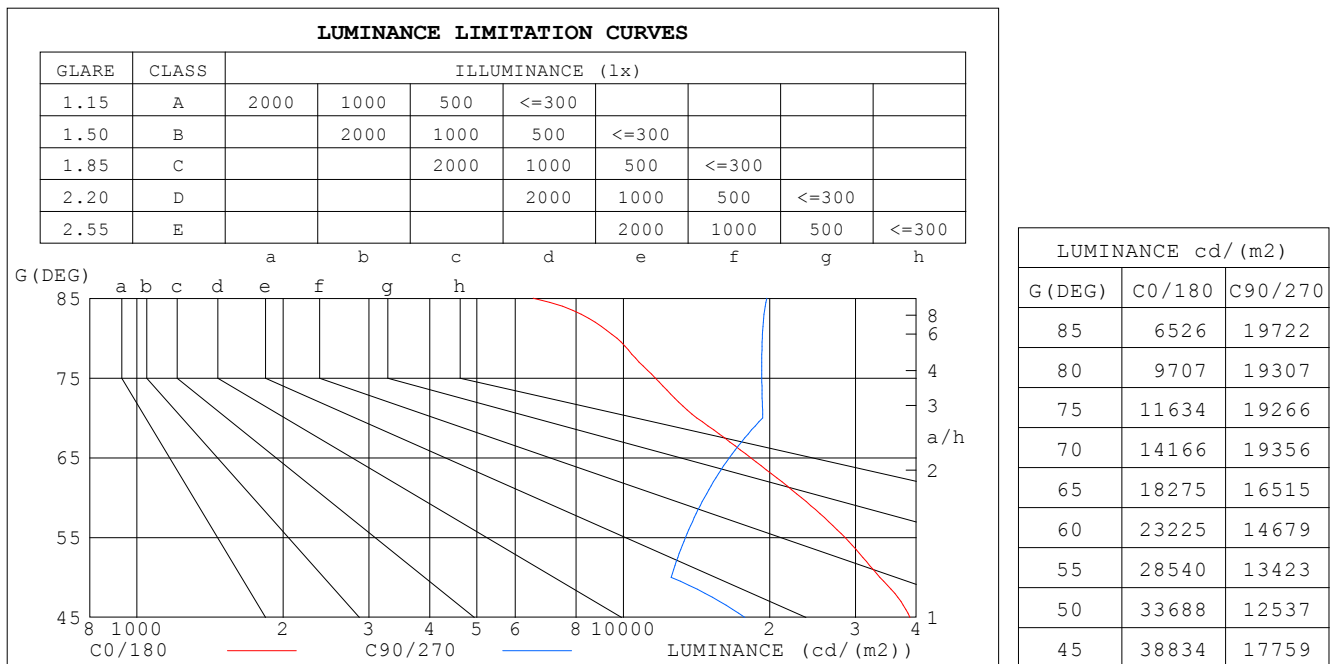
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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: 2017-07-03

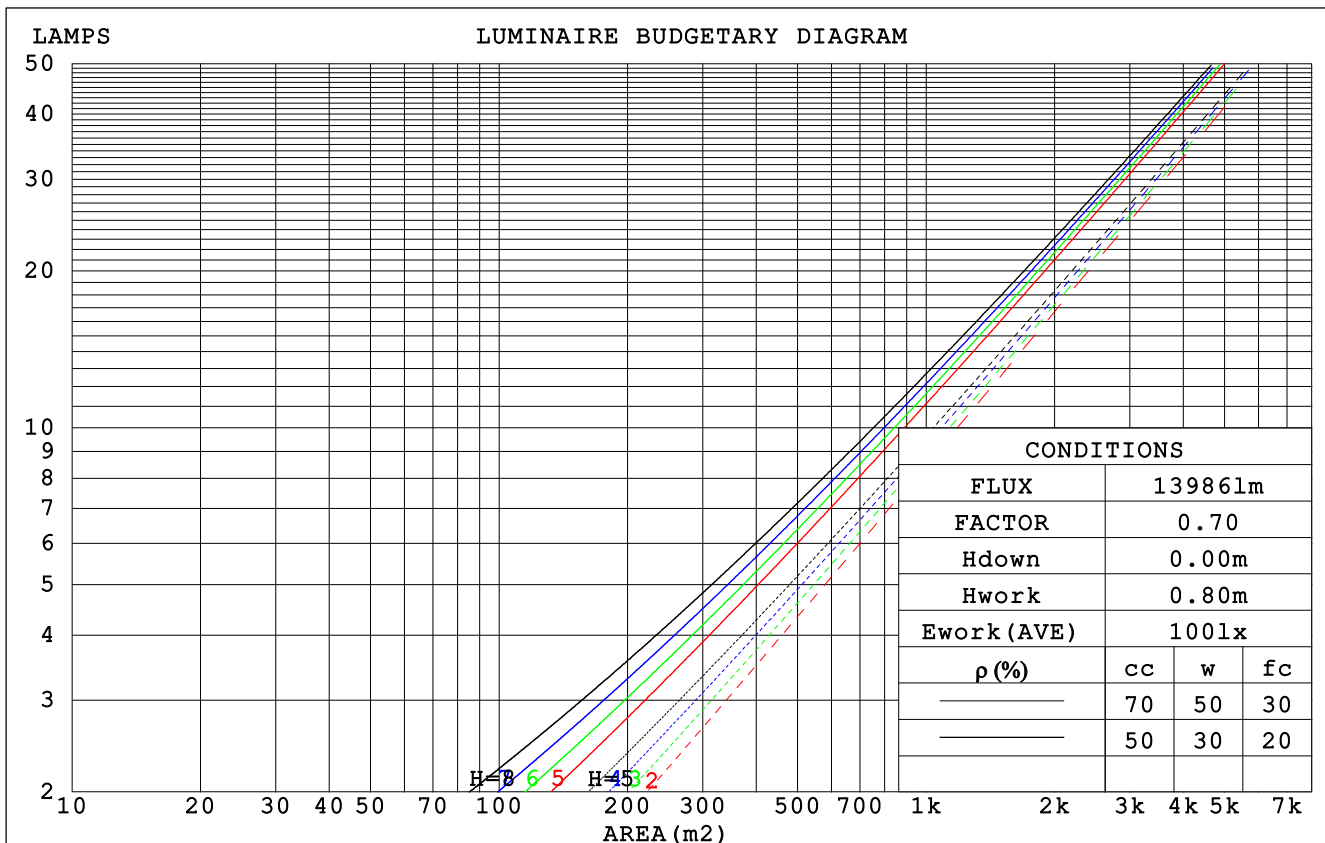
Checker:

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	.92	.91	.89	.87
2.0	.95	.89	.84	.93	.88	.83	.89	.85	.81	.86	.83	.79	.83	.80	.77	.76
3.0	.85	.78	.72	.83	.77	.71	.81	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.77	.69	.63	.75	.68	.62	.73	.67	.62	.71	.65	.61	.69	.64	.60	.58
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.55	.64	.59	.54	.63	.58	.53	.51
6.0	.63	.55	.49	.62	.55	.49	.61	.54	.49	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.50	.44	.56	.49	.44	.54	.48	.44	.53	.47	.43	.41
8.0	.53	.45	.40	.53	.45	.40	.51	.45	.40	.50	.44	.40	.49	.43	.39	.38
9.0	.49	.42	.37	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.36	.34
10.0	.46	.38	.33	.45	.38	.33	.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: 2017-07-03

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	.263	.150	.047	.256	.146	.046	.243	.140	.045	.231	.133	.043	.220	.128	.041		
2.0	.250	.137	.042	.244	.135	.041	.233	.130	.040	.222	.125	.039	.213	.120	.038		
3.0	.234	.125	.037	.229	.123	.037	.219	.119	.036	.210	.115	.035	.202	.112	.035		
4.0	.219	.114	.033	.214	.112	.033	.206	.109	.033	.198	.106	.032	.190	.103	.031		
5.0	.205	.104	.030	.201	.103	.030	.193	.100	.030	.186	.098	.029	.179	.096	.029		
6.0	.192	.096	.028	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026		
7.0	.180	.089	.025	.177	.088	.025	.171	.086	.025	.165	.085	.025	.160	.083	.024		
8.0	.170	.083	.023	.167	.082	.023	.161	.081	.023	.156	.079	.023	.151	.078	.023		
9.0	.160	.077	.022	.158	.077	.022	.153	.075	.021	.148	.074	.021	.144	.073	.021		
10.0	.152	.073	.020	.149	.072	.020	.145	.071	.020	.141	.070	.020	.137	.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	.152	.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	.158	.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	.015	.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	.101	.055	.023	.070	.038	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.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:2017-07-03

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	24.1	25.4	24.3	25.6	25.8	20.9	22.3	21.2	22.4	22.6
3H	24.7	25.9	24.9	26.1	26.3	22.8	24.0	23.1	24.2	24.5
4H	24.8	26.0	25.1	26.2	26.5	23.7	24.9	24.0	25.2	25.4
6H	24.9	26.0	25.2	26.3	26.5	24.5	25.6	24.8	25.9	26.2
8H	24.9	26.0	25.3	26.3	26.5	24.8	25.9	25.2	26.2	26.5
12H	24.9	25.9	25.2	26.2	26.5	25.1	26.1	25.4	26.4	26.7
4H 2H	24.1	25.3	24.4	25.5	25.7	21.4	22.6	21.7	22.9	23.1
3H	24.8	25.9	25.2	26.1	26.4	23.4	24.4	23.7	24.7	25.0
4H	25.1	26.0	25.5	26.4	26.7	24.4	25.4	24.8	25.7	26.0
6H	25.3	26.1	25.7	26.5	26.8	25.4	26.2	25.8	26.6	26.9
8H	25.3	26.1	25.7	26.5	26.8	25.8	26.6	26.2	26.9	27.3
12H	25.3	26.0	25.8	26.4	26.8	26.1	26.8	26.5	27.2	27.6
8H 4H	25.2	25.9	25.6	26.3	26.7	24.5	25.3	24.9	25.7	26.0
6H	25.4	26.1	25.9	26.5	26.9	25.6	26.3	26.1	26.7	27.1
8H	25.5	26.1	26.0	26.5	27.0	26.1	26.7	26.6	27.1	27.6
12H	25.6	26.0	26.0	26.5	27.0	26.6	27.1	27.1	27.5	28.0
12H 4H	25.2	25.9	25.6	26.2	26.6	24.5	25.2	24.9	25.6	26.0
6H	25.5	26.0	25.9	26.4	26.9	25.6	26.2	26.1	26.6	27.1
8H	25.6	26.1	26.1	26.5	27.0	26.2	26.7	26.6	27.1	27.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.5					+ 0.4 / - 0.4				
1.5H	+ 0.5 / - 0.8					+ 0.3 / - 0.4				
2.0H	+ 1.4 / - 1.6					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 13986 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.2)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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	64	55	50	44
0.80	76	66	60	75	66	60	73	65	59	53
1.00	84	74	68	82	74	68	80	75	67	61
1.25	90	81	75	88	80	75	86	79	74	68
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	87	98	92	87	95	89	85	78
2.50	103	96	91	101	95	91	97	93	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	100	107	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

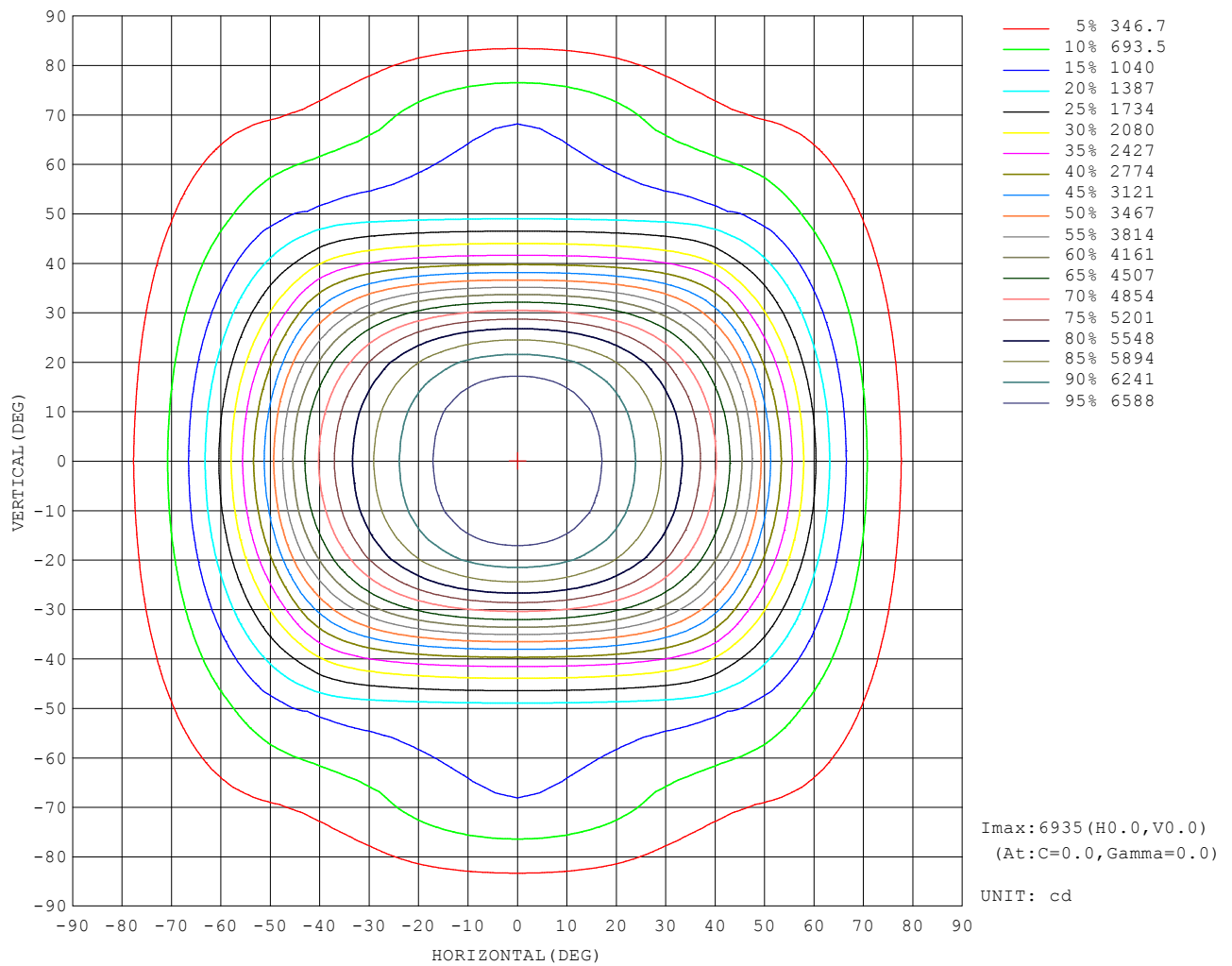
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



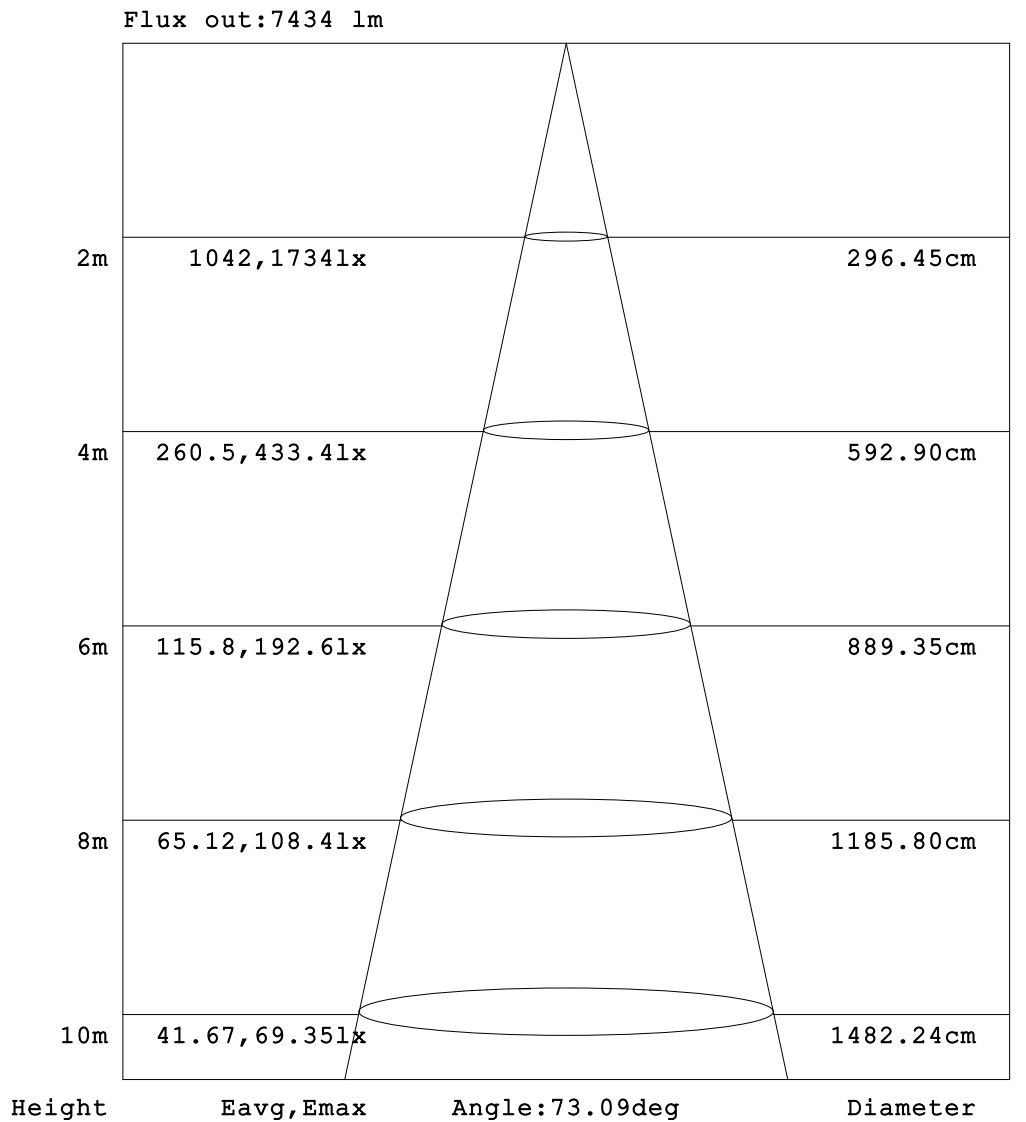
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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.

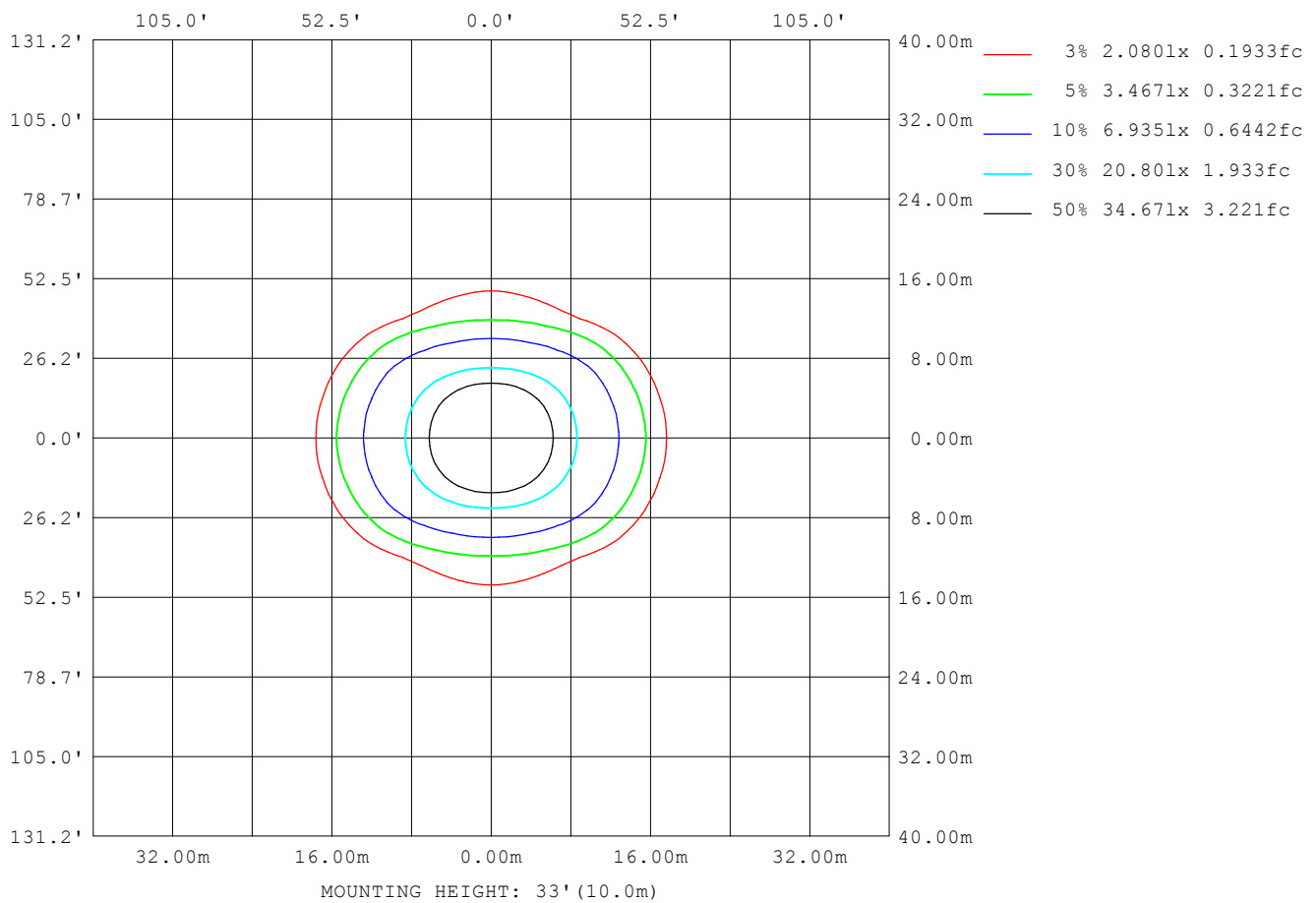
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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



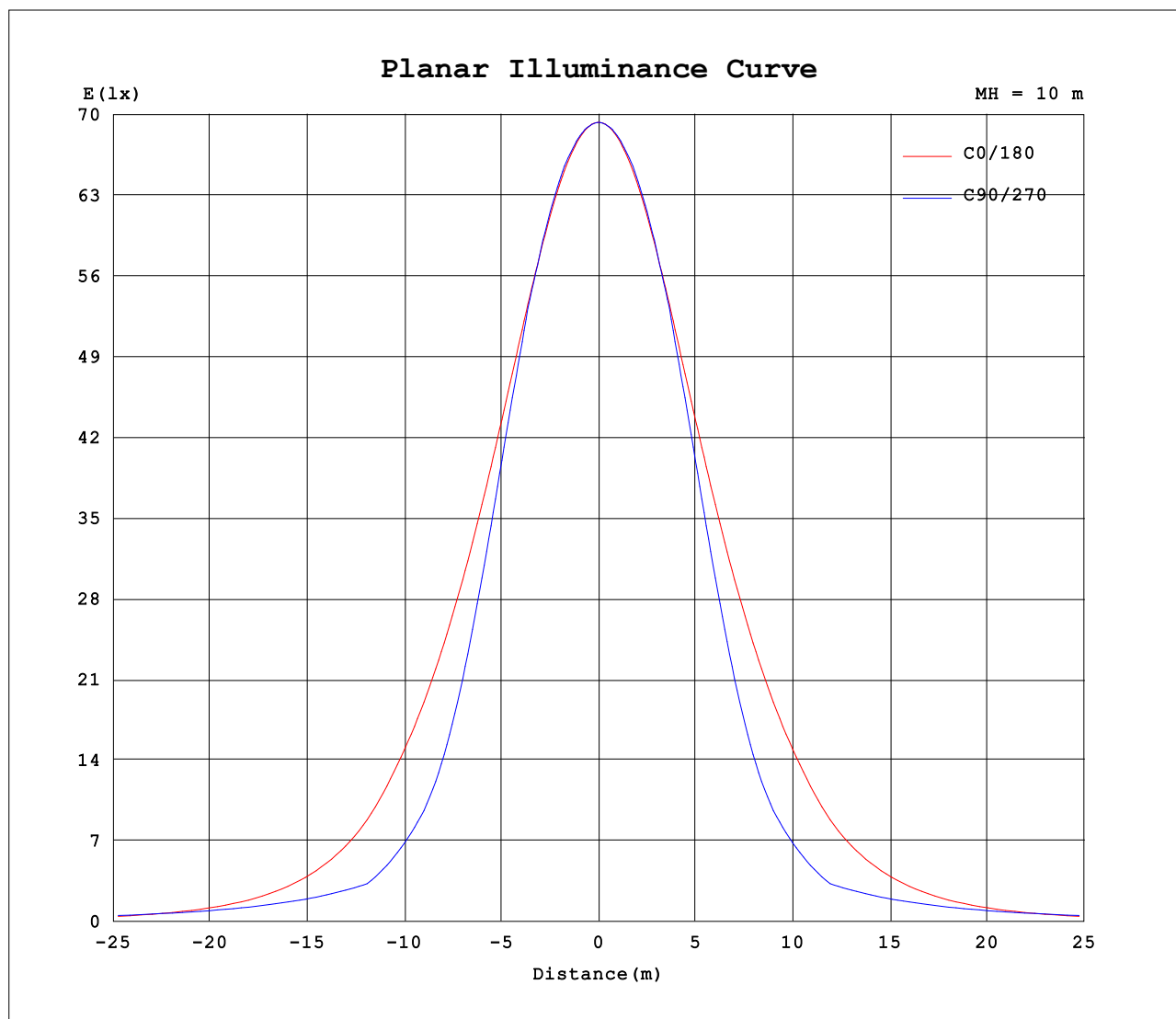
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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: 2017-07-03

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: