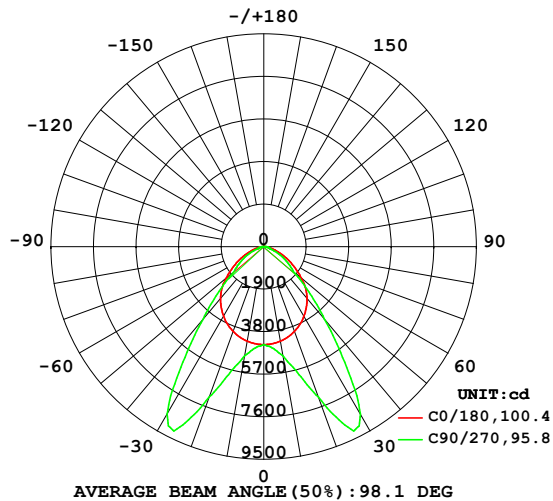


LUMINAIRE PHOTOMETRIC TEST REPORT

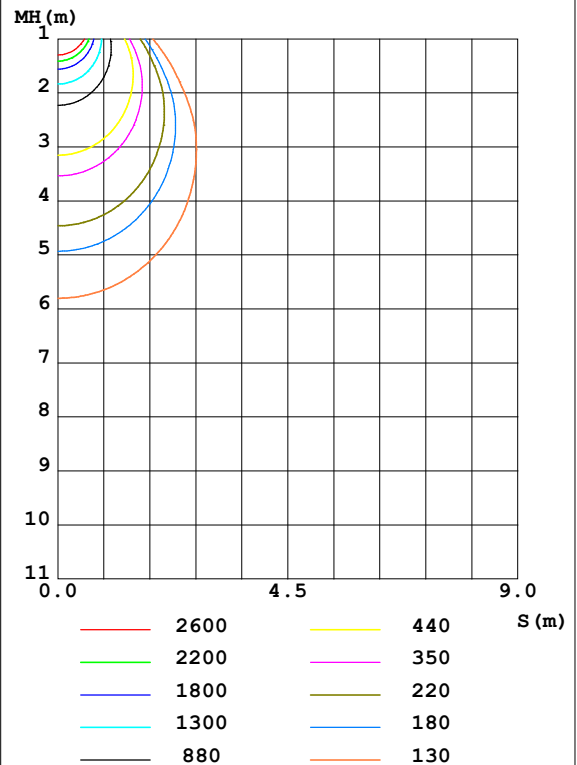
Test:U:230.0V I:0.5446A P:121.6W PF:0.9707 Lamp Flux:15602x1 lm		
NAME: LHB03-120	TYPE:120W	WEIGHT:
SPEC.:5000K Ra70 L00304	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.34 lm/W			
MODEL	LHB03-120	I _{max} (cd)	9168	S/MH(C0/180)	1.23
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.38
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	15602	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	15602	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:2017-08-05

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	4355	4466	4548	4466	4355	4466	4548	4466	0- 5	106.0	106.0	0.68,0.68
10	4290	4656	4952	4656	4290	4658	4952	4658	5- 10	326.0	432.0	2.77,2.77
15	4181	4960	5821	4960	4181	4963	5821	4963	10- 15	571.3	1003	6.43,6.43
20	4027	5457	7156	5457	4027	5463	7156	5463	15- 20	867.9	1871	12,12
25	3833	6145	8887	6145	3833	6148	8887	6148	20- 25	1243	3115	20,20
30	3600	6984	8632	6984	3600	6990	8632	6990	25- 30	1656	4770	30.6,30.6
35	3320	7776	6307	7776	3320	7808	6307	7808	30- 35	1899	6669	42.7,42.7
40	3009	7690	4215	7690	3009	7731	4215	7731	35- 40	1898	8567	54.9,54.9
45	2653	6414	2843	6414	2653	6418	2843	6418	40- 45	1740	10307	66.1,66.1
50	2208	4376	1733	4376	2208	4313	1733	4313	45- 50	1483	11790	75.6,75.6
55	1758	2497	1377	2497	1758	2442	1377	2442	50- 55	1177	12966	83.1,83.1
60	1356	1357	1022	1357	1356	1340	1022	1340	55- 60	903.9	13870	88.9,88.9
65	982.0	1043	666.1	1043	982.0	1030	666.1	1030	60- 65	673.3	14544	93.2,93.2
70	650.0	708.0	310.6	708.0	650.0	694.0	310.6	694.0	65- 70	473.6	15017	96.3,96.3
75	407.0	333.1	236.7	333.1	407.0	328.9	236.7	328.9	70- 75	295.1	15312	98.1,98.1
80	215.6	206.7	162.7	206.7	215.6	204.6	162.7	204.6	75- 80	168.2	15481	99.2,99.2
85	61.57	111.2	88.78	111.2	61.57	110.0	88.78	110.0	80- 85	89.70	15570	99.8,99.8
90	4.890	13.38	14.84	13.38	4.890	13.09	14.84	13.09	85- 90	31.77	15602	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): 10307 lm

%lum = 66.1%

%lamp = 66.1%

Conical surface Flux(120deg): 13870 lm

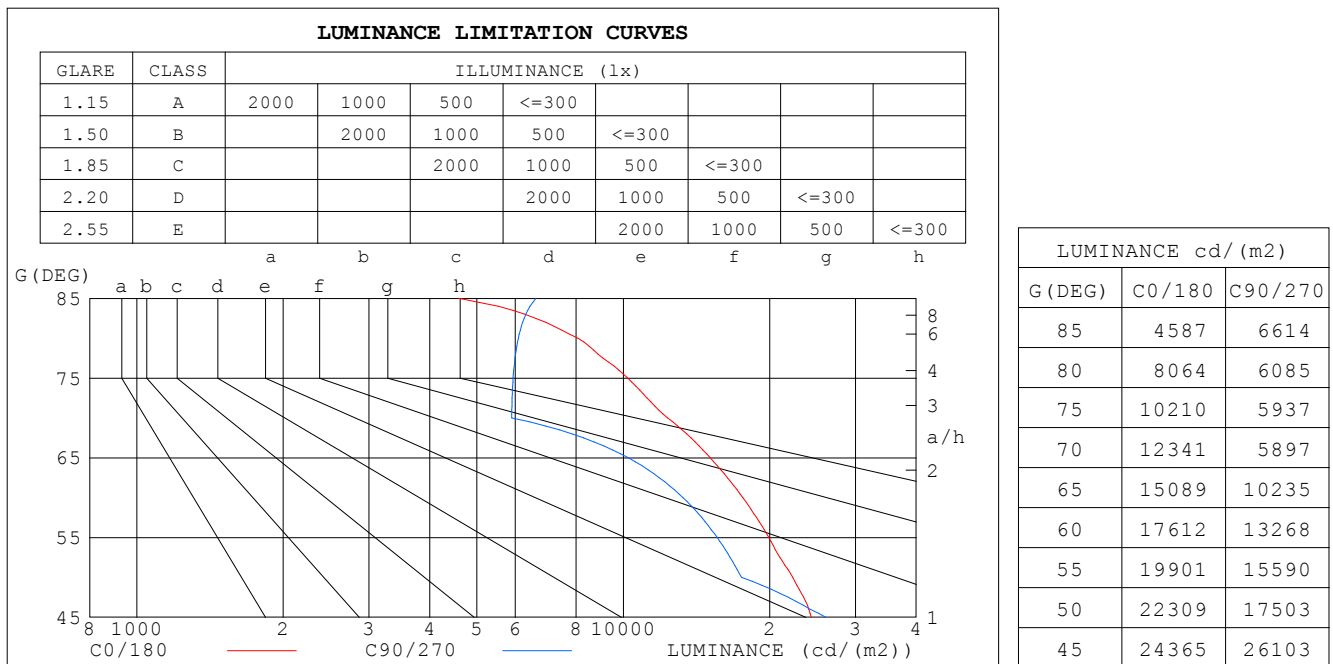
%lum = 88.9%

%lamp = 88.9%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-08-05

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:

LUMINANCE LIMITATION CURVES

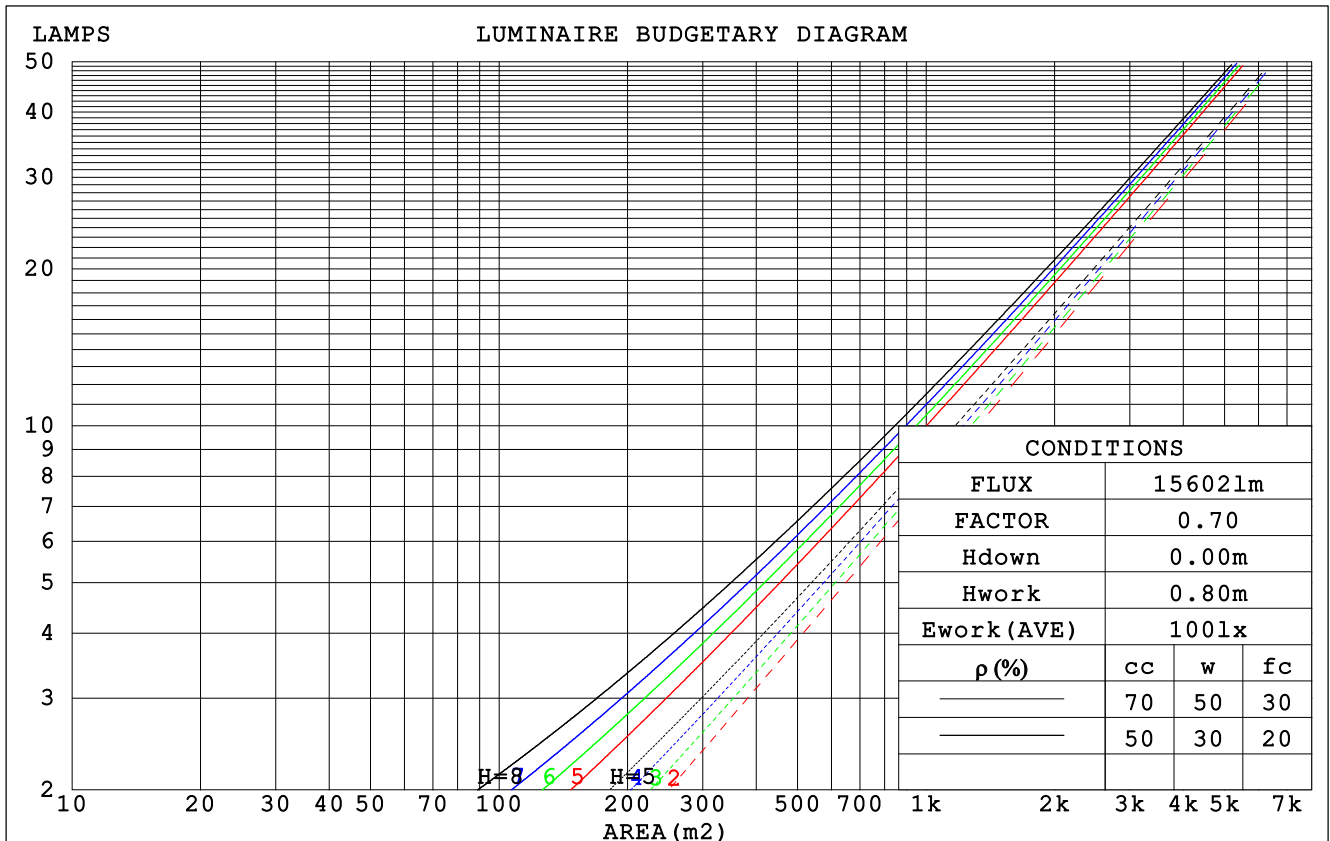


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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			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	1.06	1.03	.99	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.92	.91	.89	.87
2.0	.94	.88	.83	.92	.87	.82	.89	.84	.80	.86	.82	.79	.83	.80	.77	.75
3.0	.84	.76	.71	.82	.75	.70	.79	.74	.69	.77	.72	.68	.74	.70	.67	.64
4.0	.75	.67	.61	.74	.66	.60	.71	.65	.59	.69	.63	.59	.67	.62	.58	.56
5.0	.67	.59	.53	.66	.58	.52	.64	.57	.52	.62	.56	.51	.60	.55	.51	.49
6.0	.61	.52	.46	.60	.52	.46	.58	.51	.46	.56	.50	.45	.55	.49	.45	.43
7.0	.55	.47	.41	.54	.46	.41	.53	.46	.40	.51	.45	.40	.50	.44	.40	.38
8.0	.50	.42	.36	.50	.42	.36	.48	.41	.36	.47	.41	.36	.46	.40	.36	.34
9.0	.46	.38	.33	.45	.38	.33	.44	.37	.32	.43	.37	.32	.42	.36	.32	.30
10.0	.42	.35	.30	.42	.34	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-08-05

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:

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	.264	.150	.048	.257	.147	.047	.244	.140	.045	.232	.134	.043	.221	.128	.041	
2.0	.255	.140	.043	.249	.137	.042	.238	.132	.041	.227	.127	.040	.217	.123	.039	
3.0	.241	.128	.038	.236	.126	.038	.226	.122	.037	.217	.119	.036	.208	.115	.036	
4.0	.227	.118	.035	.222	.116	.034	.213	.113	.034	.205	.110	.033	.197	.107	.033	
5.0	.213	.108	.031	.209	.107	.031	.201	.105	.031	.194	.102	.030	.187	.100	.030	
6.0	.200	.100	.029	.196	.099	.029	.189	.097	.028	.183	.095	.028	.177	.093	.028	
7.0	.188	.093	.026	.185	.092	.026	.178	.090	.026	.173	.088	.026	.167	.087	.026	
8.0	.177	.087	.024	.174	.086	.024	.169	.084	.024	.163	.083	.024	.158	.081	.024	
9.0	.167	.081	.023	.165	.080	.023	.160	.079	.022	.155	.078	.022	.150	.076	.022	
10.0	.158	.076	.021	.156	.075	.021	.151	.074	.021	.147	.073	.021	.143	.072	.021	

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	.102	.143	.114	.089	.098	.079	.062	.057	.046	.036	.018	.015	.012	
3.0	.159	.114	.078	.136	.098	.068	.094	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.151	.100	.062	.130	.087	.054	.089	.061	.038	.052	.035	.022	.017	.012	.007	
5.0	.144	.090	.050	.124	.078	.043	.085	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.138	.081	.041	.118	.071	.036	.082	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.075	.035	.113	.065	.030	.078	.045	.021	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.108	.060	.026	.075	.042	.018	.043	.025	.011	.014	.008	.004	
9.0	.120	.064	.026	.103	.055	.023	.072	.039	.016	.042	.023	.010	.013	.008	.003	
10.0	.115	.060	.023	.099	.052	.020	.069	.036	.014	.040	.022	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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:

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	25.4	26.8	25.6	27.0	27.2	22.8	24.2	23.1	24.4	24.6
3H	25.9	27.2	26.2	27.4	27.6	22.9	24.2	23.2	24.5	24.7
4H	26.0	27.2	26.3	27.5	27.7	22.9	24.2	23.2	24.4	24.7
6H	26.0	27.2	26.3	27.4	27.7	23.0	24.1	23.3	24.4	24.6
8H	26.0	27.1	26.3	27.4	27.7	23.0	24.1	23.3	24.3	24.6
12H	26.0	27.0	26.3	27.3	27.6	23.0	24.0	23.3	24.3	24.6
4H 2H	25.5	26.7	25.8	27.0	27.2	23.4	24.7	23.7	24.9	25.2
3H	26.4	27.5	26.8	27.8	28.1	23.6	24.7	23.9	24.9	25.2
4H	26.7	27.7	27.1	28.0	28.3	23.6	24.6	24.0	24.9	25.2
6H	26.8	27.6	27.2	28.0	28.4	23.7	24.5	24.1	24.9	25.3
8H	26.8	27.6	27.2	28.0	28.3	23.7	24.5	24.1	24.9	25.3
12H	26.8	27.5	27.2	27.9	28.3	23.8	24.5	24.2	24.9	25.3
8H 4H	26.7	27.5	27.1	27.8	28.2	23.9	24.6	24.3	25.0	25.4
6H	26.9	27.5	27.3	27.9	28.4	24.0	24.6	24.4	25.0	25.4
8H	27.0	27.5	27.4	28.0	28.4	24.0	24.6	24.5	25.0	25.5
12H	27.0	27.5	27.5	27.9	28.4	24.1	24.6	24.6	25.0	25.5
12H 4H	26.6	27.4	27.1	27.7	28.1	23.9	24.6	24.3	25.0	25.4
6H	26.9	27.4	27.3	27.9	28.3	24.0	24.6	24.5	25.0	25.4
8H	27.0	27.5	27.4	27.9	28.4	24.1	24.6	24.6	25.0	25.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 0.6					+ 1.3 / - 2.1				
1.5H	+ 1.8 / - 1.8					+ 1.9 / - 2.0				
2.0H	+ 1.3 / - 2.6					+ 1.4 / - 1.2				

CIE Pub.117 Corrected 15602 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.5)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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:

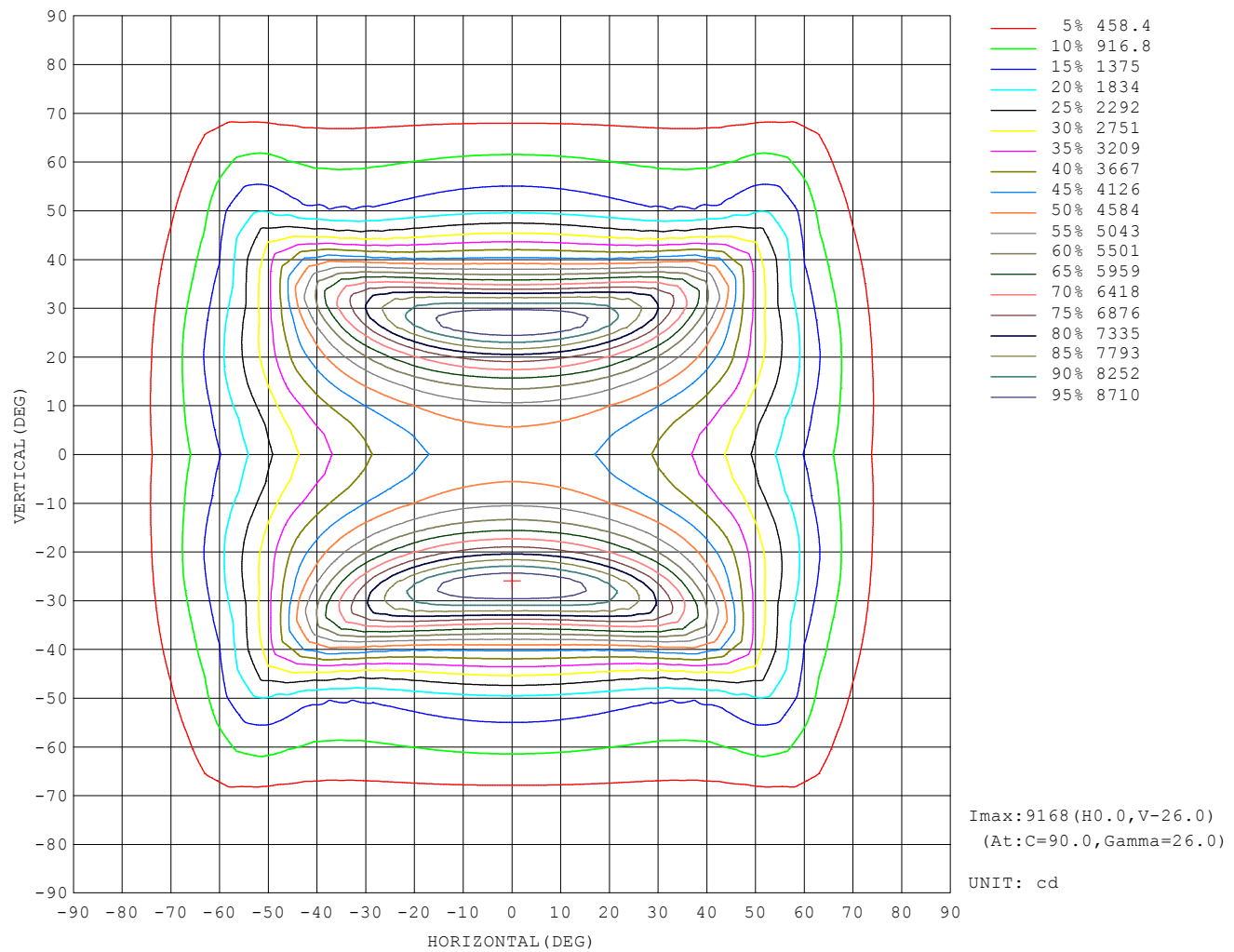
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	63	53	46	62	52	46	61	52	46	40
0.80	73	63	57	73	63	56	71	62	56	50
1.00	82	72	66	81	72	66	79	73	65	59
1.25	89	80	74	87	79	73	85	78	72	66
1.50	93	85	79	92	84	78	89	82	77	71
2.00	99	92	87	98	91	86	94	89	84	77
2.50	102	96	91	101	95	90	97	92	88	81
3.00	105	100	95	103	98	94	99	95	92	84
4.00	109	104	100	106	102	99	102	99	96	88
5.00	111	106	103	108	105	101	104	101	98	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: 2017-08-05

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:

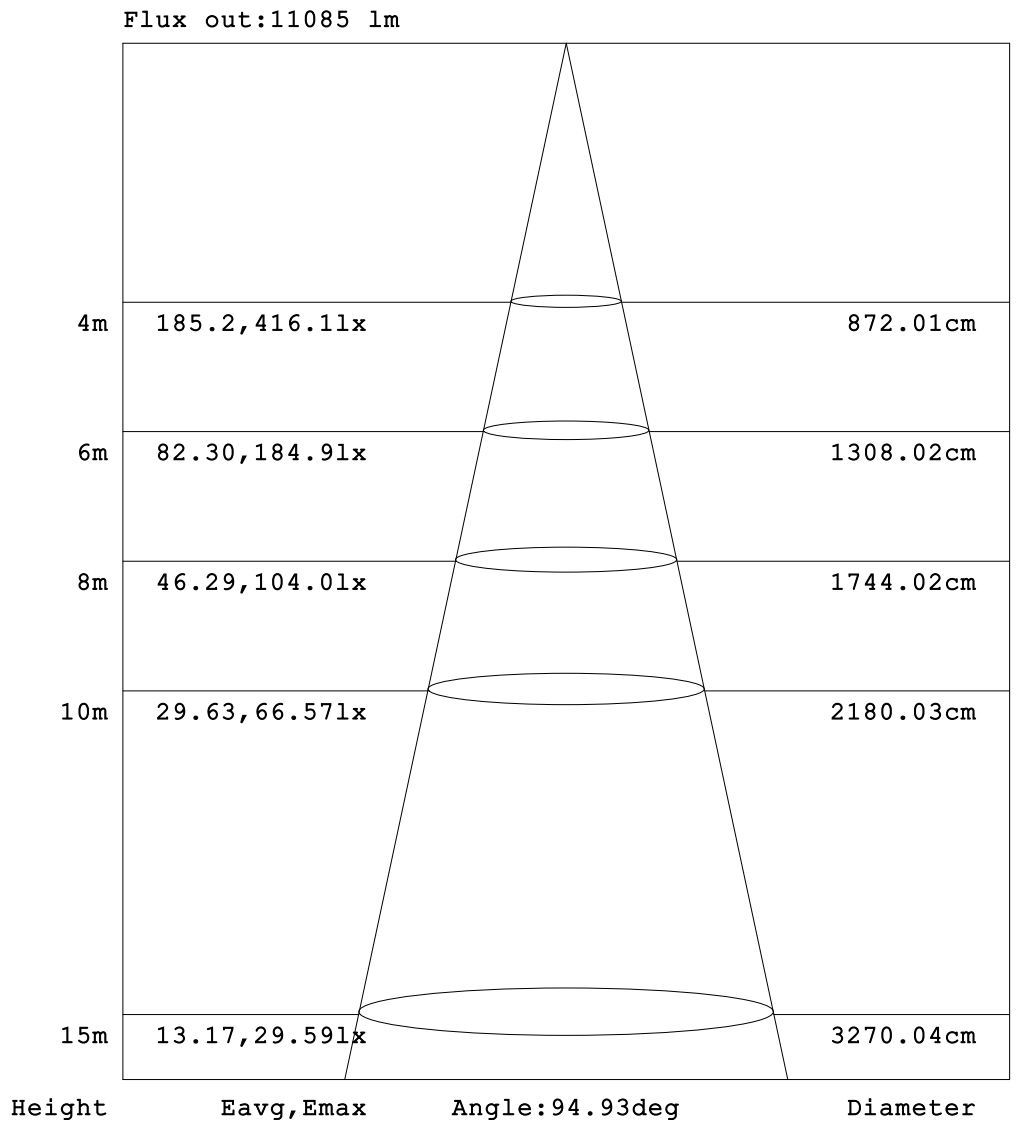
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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:

AAI Figure

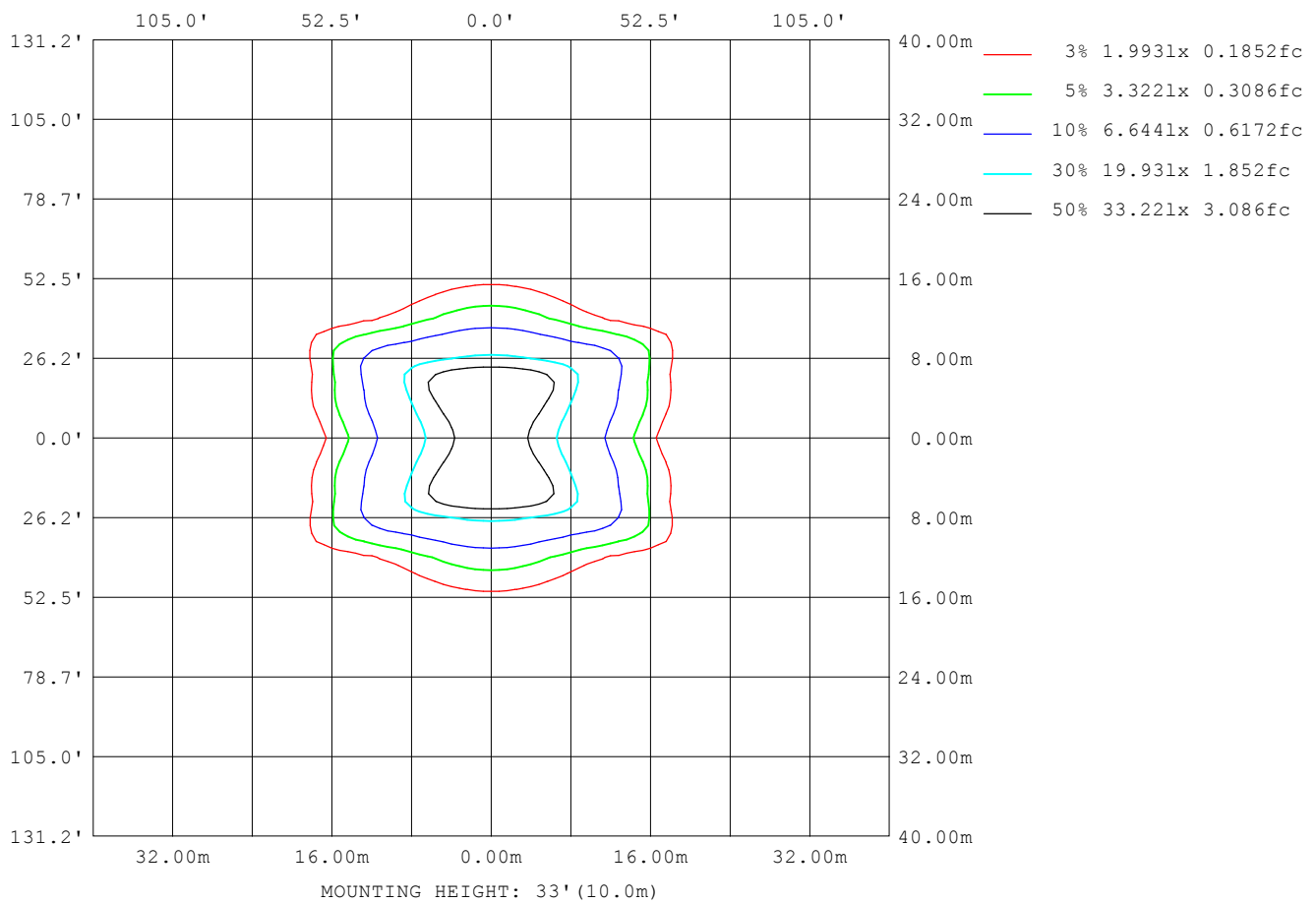


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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:

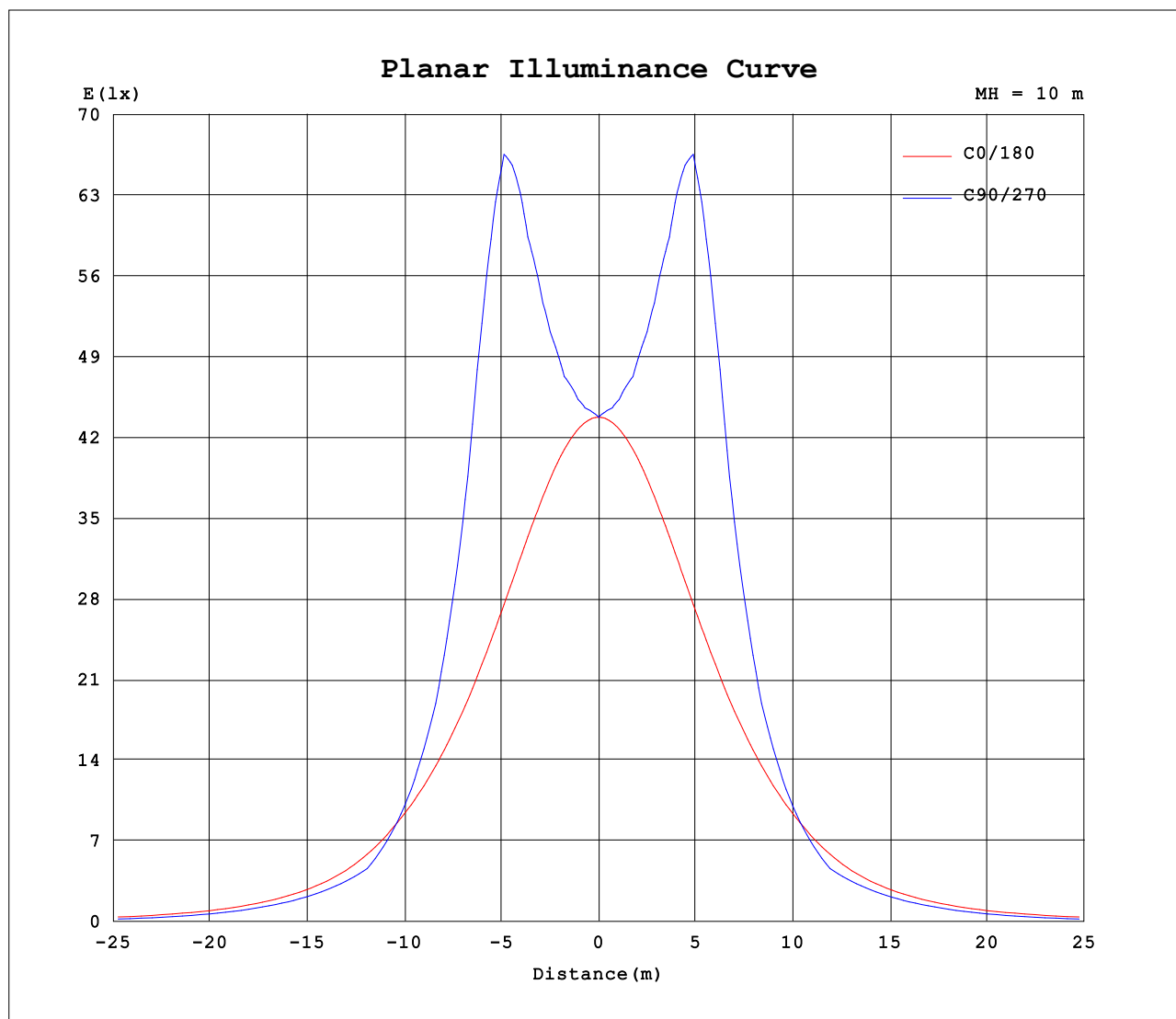
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-08-05

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-08-05

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:

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

```

```

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:

```

UNIT: cd

```

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:

```