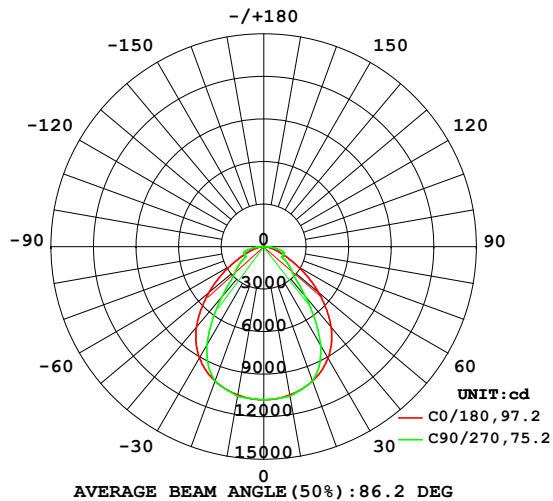


LUMINAIRE PHOTOMETRIC TEST REPORT

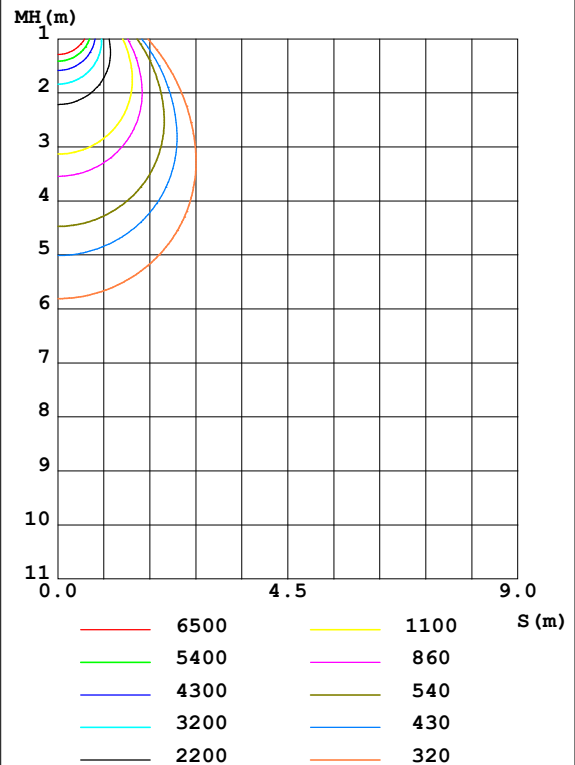
Test:U:230.1V I:0.8060A P:179.2W PF:0.9662 Lamp Flux:22143.9x1 lm		
NAME: LHB03-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra70 80*100DEG L00303	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.60 lm/W			
MODEL	LHB03-180	I _{max} (cd)	10800	S/MH(C0/180)	1.24
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	1.09
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	22144	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	22143.9	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:2017-03-02

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	1076	1074	1075	1074	1076	1074	1075	1074	0- 5	257.5	257.5	1.16,1.16
10	1062	1064	1070	1064	1062	1064	1070	1064	5- 10	765.3	1023	4.62,4.62
15	1040	1046	1040	1046	1040	1046	1040	1046	10- 15	1250	2273	10.3,10.3
20	1008	1007	1010	1007	1008	1006	1010	1006	15- 20	1689	3961	17.9,17.9
25	965.0	960.9	927.0	960.9	965.0	960.7	927.0	960.7	20- 25	2060	6021	27.2,27.2
30	907.5	889.5	804.5	889.5	907.5	889.3	804.5	889.3	25- 30	2311	8332	37.6,37.6
35	832.9	787.1	632.4	787.1	832.9	786.7	632.4	786.7	30- 35	2401	10733	48.5,48.5
40	739.6	658.2	454.7	658.2	739.6	657.5	454.7	657.5	35- 40	2307	13041	58.9,58.9
45	625.5	513.3	316.3	513.3	625.5	512.8	316.3	512.8	40- 45	2056	15097	68.2,68.2
50	507.2	375.6	254.7	375.6	507.2	375.3	254.7	375.3	45- 50	1731	16828	76,76
55	388.7	263.2	202.7	263.2	388.7	263.4	202.7	263.4	50- 55	1421	18249	82.4,82.4
60	275.6	196.1	150.7	196.1	275.6	196.3	150.7	196.3	55- 60	1116	19365	87.5,87.5
65	185.3	135.5	149.3	135.5	185.3	135.5	149.3	135.5	60- 65	843.1	20208	91.3,91.3
70	121.4	93.42	147.8	93.42	121.4	93.50	147.8	93.50	65- 70	664.2	20873	94.3,94.3
75	76.57	70.50	141.7	70.50	76.57	70.75	141.7	70.75	70- 75	540.2	21413	96.7,96.7
80	43.44	46.64	98.24	46.64	43.44	46.99	98.24	46.99	75- 80	409.6	21822	98.5,98.5
85	14.98	23.80	50.11	23.80	14.98	24.06	50.11	24.06	80- 85	240.1	22062	99.6,99.6
90	0.6441	1.713	1.979	1.713	0.6441	1.853	1.979	1.853	85- 90	81.48	22144	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 15097 lm

%lum = 68.2%

%lamp = 68.2%

Conical surface Flux(120deg): 19365 lm

%lum = 87.5%

%lamp = 87.5%

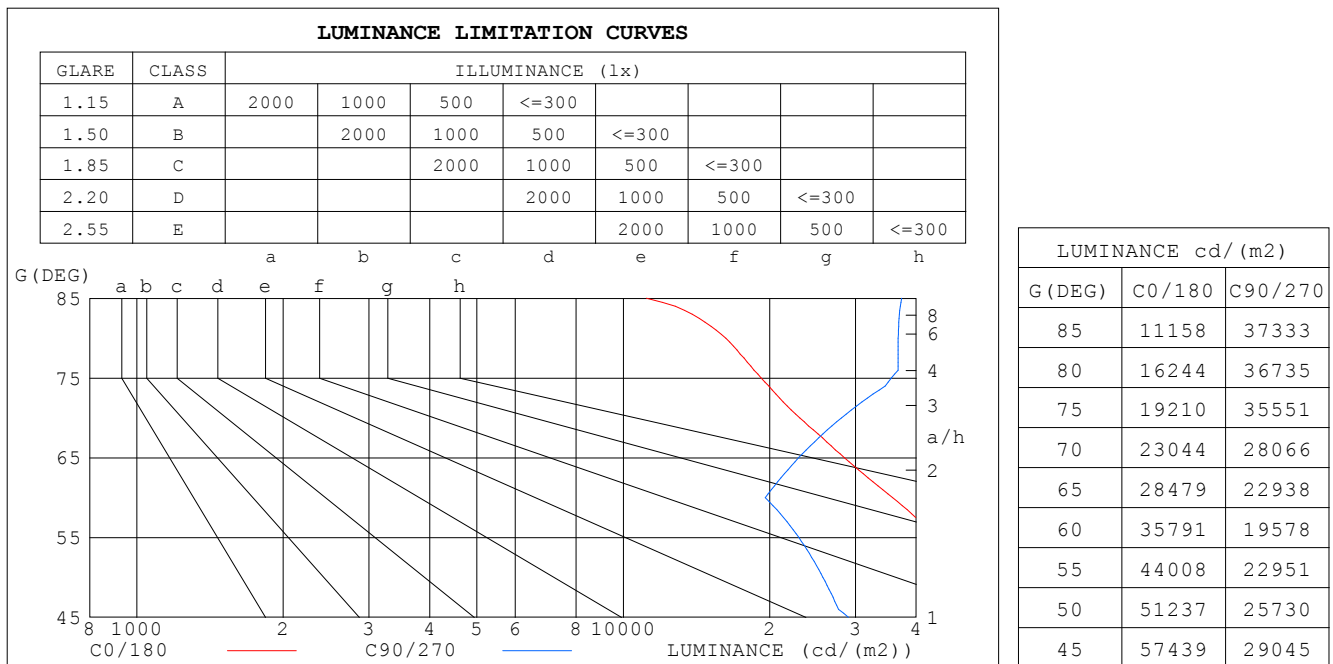
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-02

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

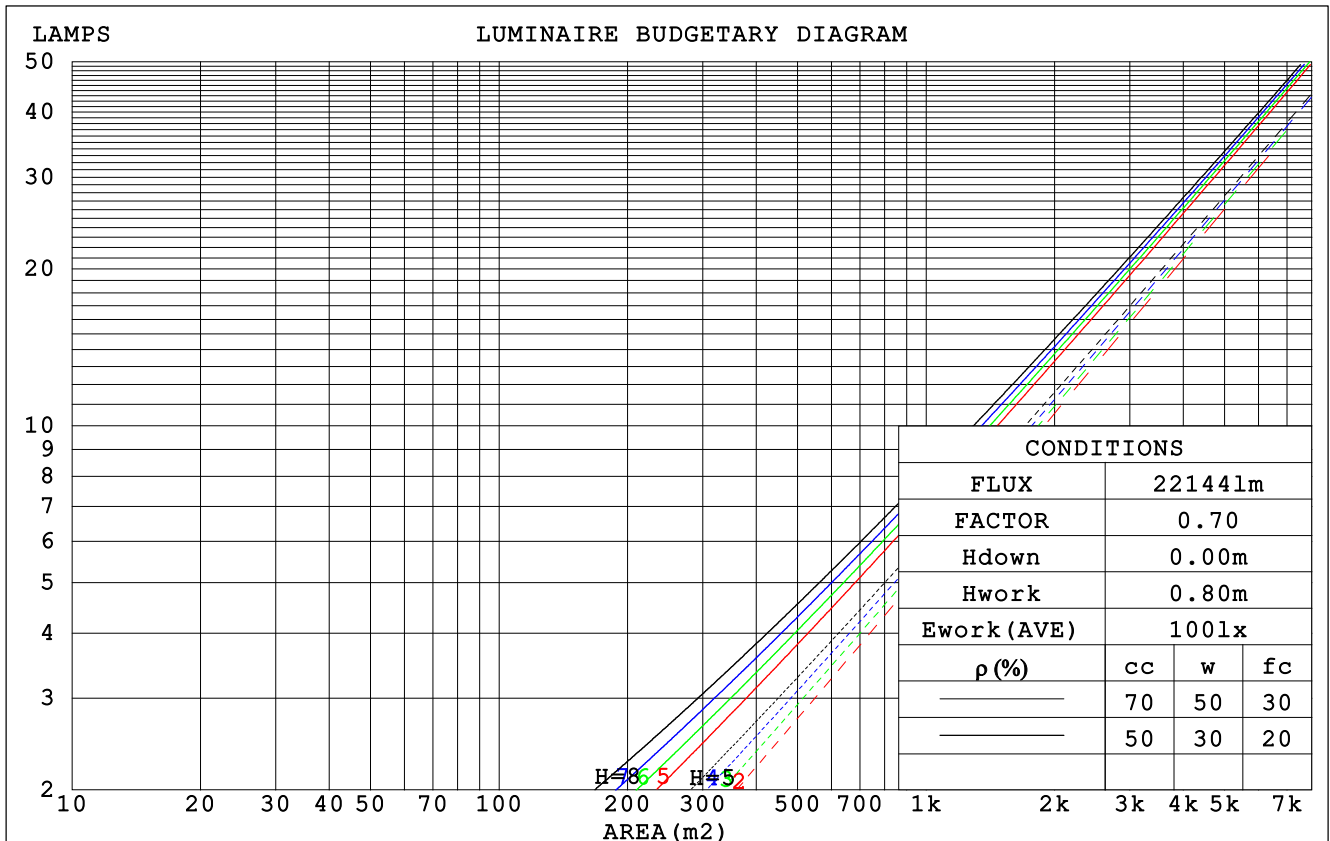
Checker:

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

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	1.02	.99	1.04	1.00	.97	.00	.97	.94	.96	.94	.92	.92	.90	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.77	.72	.83	.76	.71	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.68	.62	.75	.68	.62	.73	.66	.61	.70	.65	.60	.68	.64	.60	.58
5.0	.69	.61	.55	.68	.60	.55	.66	.59	.54	.64	.58	.54	.62	.57	.53	.51
6.0	.63	.55	.49	.62	.54	.49	.60	.53	.48	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.49	.44	.55	.49	.44	.54	.48	.43	.53	.47	.43	.41
8.0	.53	.45	.40	.52	.45	.40	.51	.44	.39	.50	.44	.39	.49	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.41	.36	.46	.40	.36	.45	.40	.36	.34
10.0	.45	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.33	.42	.37	.33	.31



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	.267	.152	.048	.260	.148	.047	.247	.142	.045	.235	.136	.044	.224	.130	.042	
2.0	.253	.138	.042	.247	.136	.042	.235	.131	.041	.225	.126	.039	.215	.122	.038	
3.0	.236	.126	.038	.231	.124	.037	.221	.120	.036	.212	.116	.036	.203	.113	.035	
4.0	.220	.115	.034	.216	.113	.033	.207	.110	.033	.199	.107	.032	.191	.104	.032	
5.0	.206	.105	.030	.202	.104	.030	.194	.101	.030	.187	.099	.029	.180	.096	.029	
6.0	.193	.097	.028	.189	.096	.027	.182	.093	.027	.176	.091	.027	.170	.089	.027	
7.0	.181	.089	.025	.178	.089	.025	.172	.087	.025	.166	.085	.025	.160	.083	.024	
8.0	.170	.083	.023	.167	.082	.023	.162	.081	.023	.157	.079	.023	.152	.078	.023	
9.0	.161	.078	.022	.158	.077	.022	.153	.076	.021	.149	.074	.021	.144	.073	.021	
10.0	.152	.073	.020	.150	.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	.057	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.129	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.036	.111	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.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:2017-03-02

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	25.5	26.8	25.7	27.0	27.2	22.6	24.0	22.9	24.1	24.3
3H	26.1	27.4	26.4	27.6	27.8	24.2	25.4	24.5	25.7	25.9
4H	26.3	27.5	26.6	27.7	28.0	25.5	26.6	25.8	26.9	27.1
6H	26.4	27.5	26.8	27.8	28.1	26.6	27.7	26.9	27.9	28.2
8H	26.4	27.5	26.8	27.8	28.1	27.0	28.0	27.3	28.3	28.6
12H	26.4	27.5	26.8	27.8	28.0	27.3	28.3	27.6	28.6	28.9
4H 2H	25.5	26.7	25.8	26.9	27.2	23.1	24.3	23.4	24.5	24.7
3H	26.3	27.4	26.7	27.6	27.9	24.8	25.8	25.1	26.1	26.4
4H	26.6	27.6	27.0	27.9	28.2	26.2	27.2	26.6	27.5	27.8
6H	26.8	27.7	27.2	28.0	28.4	27.6	28.4	28.0	28.8	29.1
8H	26.9	27.7	27.3	28.0	28.4	28.1	28.9	28.5	29.2	29.6
12H	26.9	27.6	27.3	28.0	28.4	28.5	29.2	28.9	29.6	30.0
8H 4H	26.7	27.5	27.1	27.9	28.2	26.4	27.2	26.8	27.5	27.9
6H	27.0	27.7	27.5	28.1	28.5	27.9	28.5	28.3	28.9	29.3
8H	27.1	27.7	27.6	28.1	28.6	28.5	29.1	29.0	29.5	30.0
12H	27.2	27.7	27.7	28.1	28.6	29.1	29.6	29.5	30.0	30.5
12H 4H	26.7	27.5	27.2	27.8	28.2	26.4	27.1	26.8	27.5	27.9
6H	27.1	27.7	27.5	28.1	28.5	27.9	28.5	28.4	28.9	29.3
8H	27.2	27.7	27.7	28.2	28.6	28.6	29.1	29.0	29.5	30.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.5					+ 0.3 / - 0.3				
1.5H	+ 0.4 / - 0.6					+ 0.2 / - 0.3				
2.0H	+ 1.1 / - 1.4					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 22144 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.8)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	65	56	50	64	55	49	44
0.80	76	66	59	75	65	59	73	65	59	53
1.00	83	74	68	82	73	67	80	74	67	61
1.25	90	81	75	88	80	74	86	79	74	67
1.50	94	86	80	92	85	79	90	83	78	72
2.00	100	92	87	98	91	86	95	89	85	78
2.50	103	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		

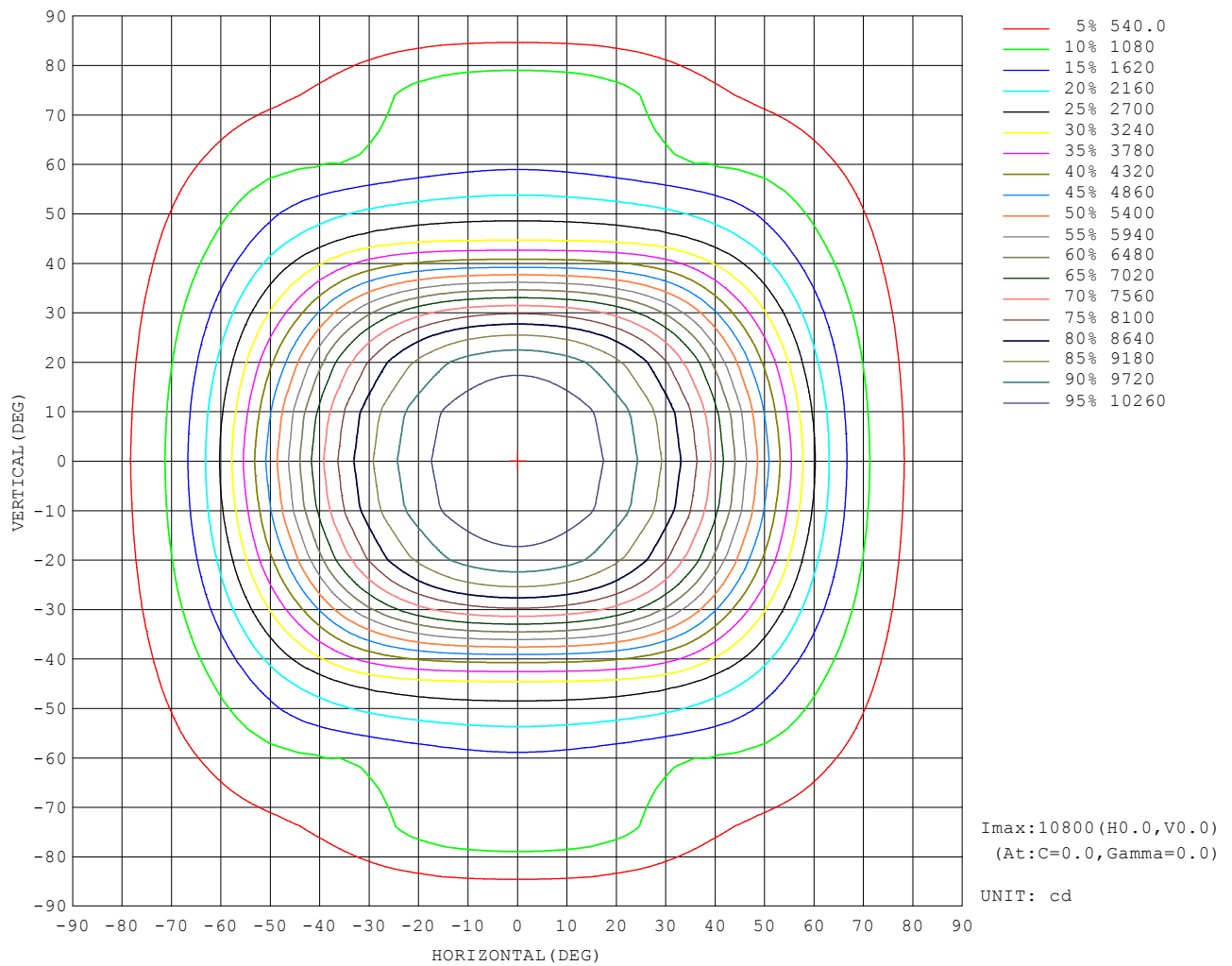
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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



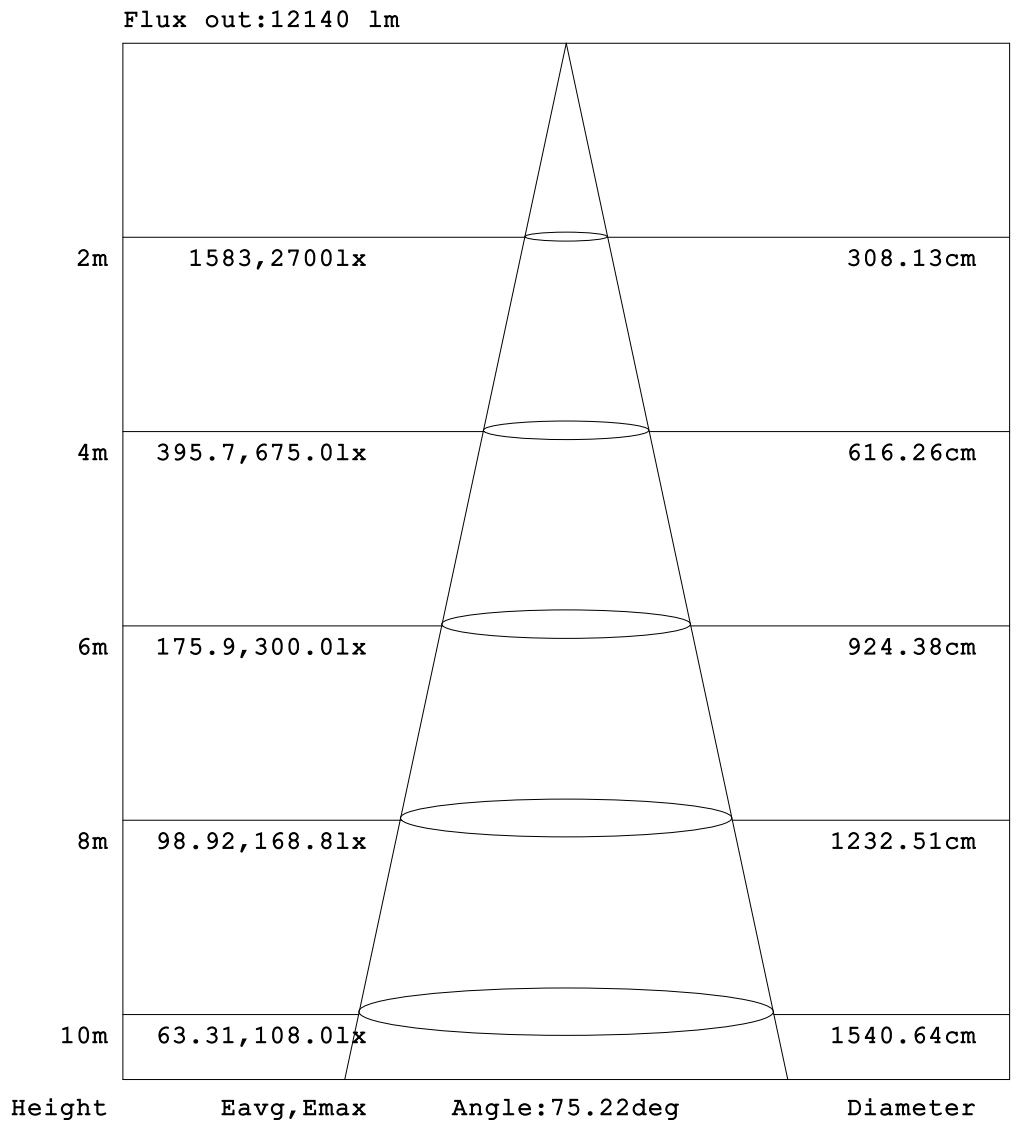
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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.

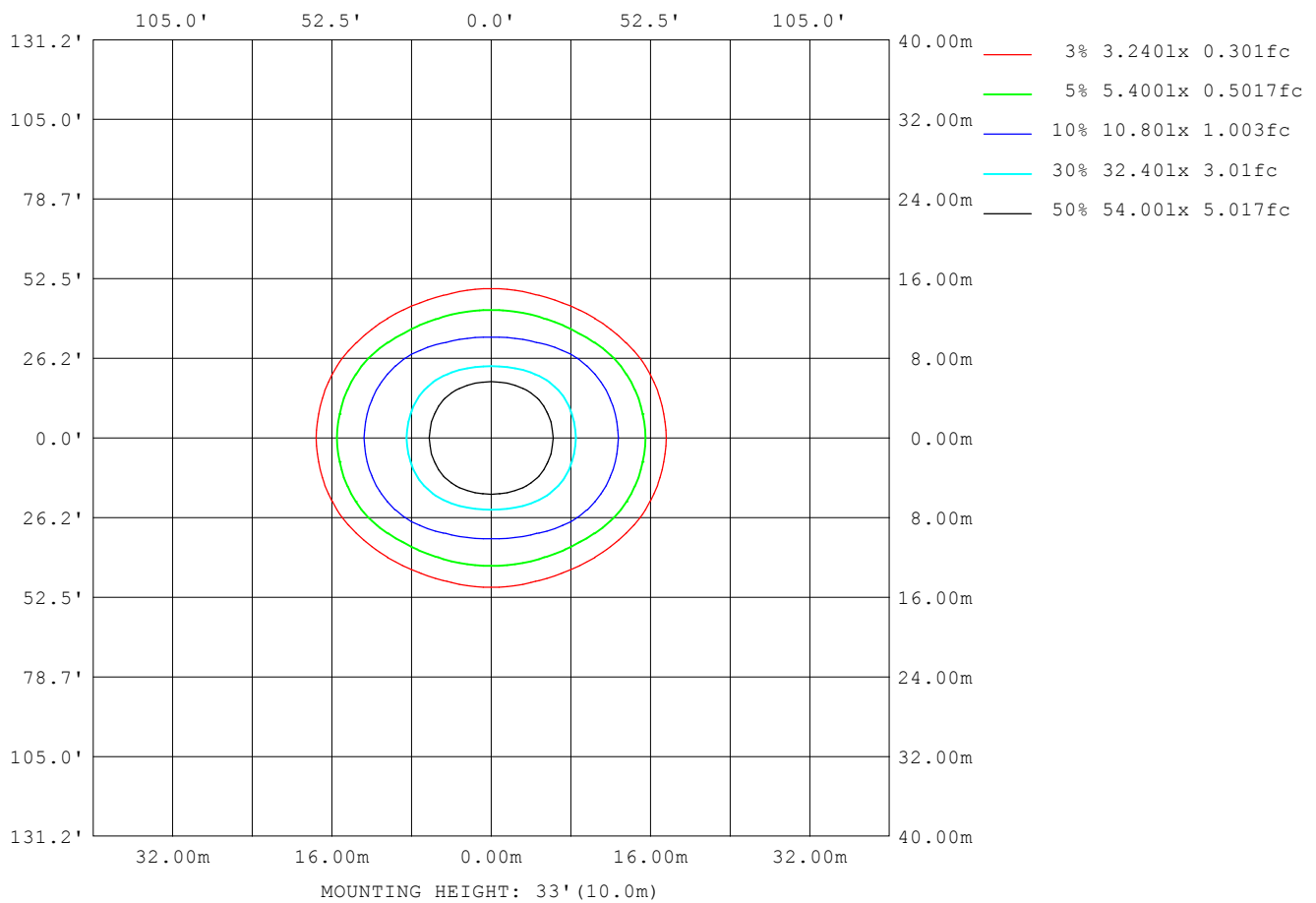
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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



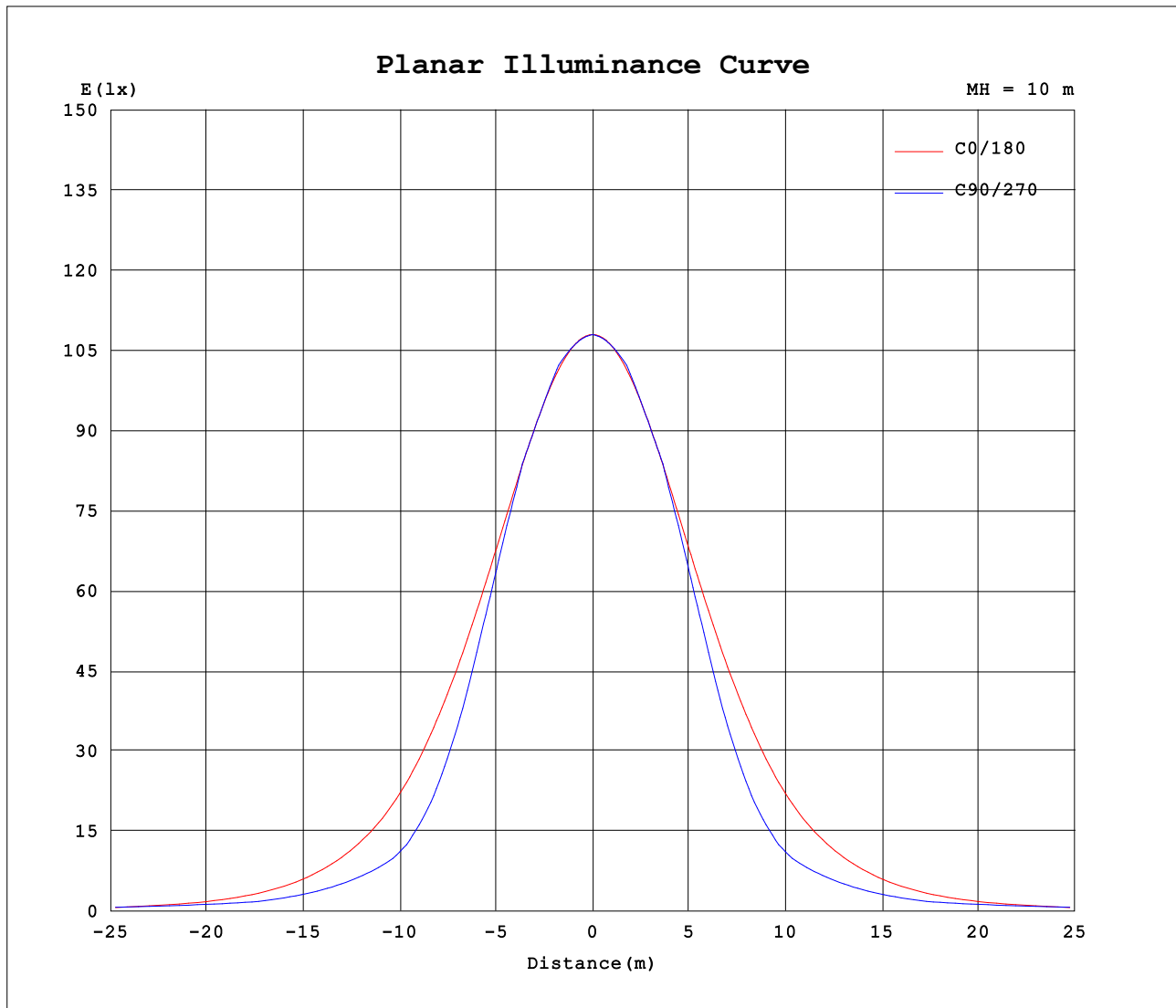
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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: 2017-03-02

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:

UNIT: $\times 10 \text{cd}$

Assessor: