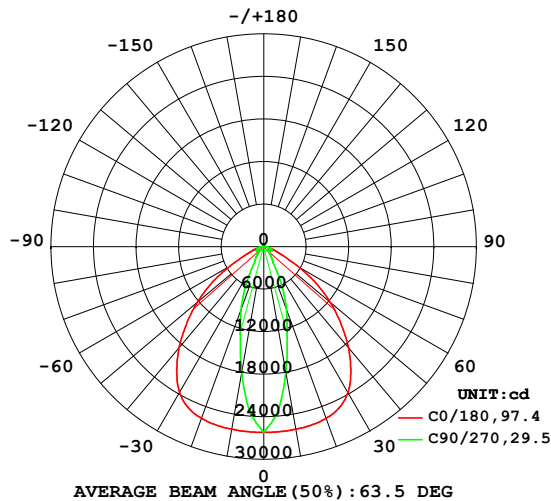


LUMINAIRE PHOTOMETRIC TEST REPORT

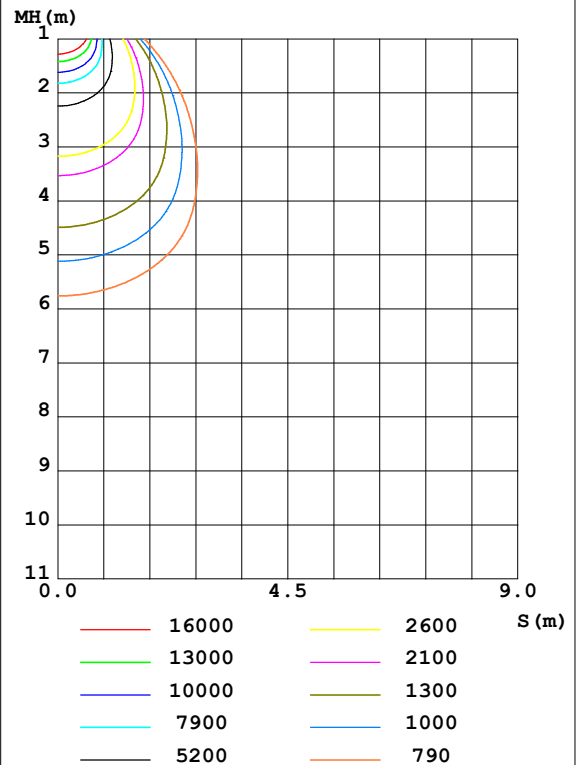
Test:U:230.0V I:0.8067A P:179.3W PF:0.9661 Lamp Flux:24781x1 lm		
NAME: LHB03-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra70 30*100DEG L00301	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 138.21 lm/W			
MODEL	LHB03-180	Imax(cd)	26198	S/MH(C0/180)	1.31
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	0.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	24781	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	24781	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.60

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	2619	2427	2320	2427	2619	2425	2320	2425	0- 5	598.5	598.5	2.42,2.42
10	2615	2106	1794	2106	2615	2102	1794	2102	5- 10	1633	2231	9,9
15	2604	1692	1289	1692	2604	1687	1289	1687	10- 15	2323	4554	18.4,18.4
20	2576	1303	936.6	1303	2576	1298	936.6	1298	15- 20	2700	7254	29.3,29.3
25	2512	1008	603.3	1008	2512	1002	603.3	1002	20- 25	2845	10098	40.8,40.8
30	2375	735.1	269.9	735.1	2375	729.4	269.9	729.4	25- 30	2737	12835	51.8,51.8
35	2141	456.9	201.4	456.9	2141	452.2	201.4	452.2	30- 35	2444	15279	61.7,61.7
40	1861	208.8	132.9	208.8	1861	206.6	132.9	206.6	35- 40	2137	17417	70.3,70.3
45	1544	152.9	73.12	152.9	1544	151.4	73.12	151.4	40- 45	1790	19207	77.5,77.5
50	1228	98.93	83.81	98.93	1228	98.50	83.81	98.50	45- 50	1438	20644	83.3,83.3
55	901.6	51.59	103.3	51.59	901.6	51.77	103.3	51.77	50- 55	1146	21790	87.9,87.9
60	555.7	46.17	122.8	46.17	555.7	46.50	122.8	46.50	55- 60	901.6	22692	91.6,91.6
65	292.9	42.46	110.6	42.46	292.9	42.88	110.6	42.88	60- 65	710.5	23403	94.4,94.4
70	170.5	36.72	98.34	36.72	170.5	37.18	98.34	37.18	65- 70	529.7	23932	96.6,96.6
75	82.23	29.96	84.53	29.96	82.23	30.35	84.53	30.35	70- 75	386.9	24319	98.1,98.1
80	31.95	22.68	57.99	22.68	31.95	23.04	57.99	23.04	75- 80	265.5	24585	99.2,99.2
85	7.353	11.82	29.85	11.82	7.353	12.11	29.85	12.11	80- 85	145.9	24731	99.8,99.8
90	0.7610	1.697	1.716	1.697	0.7610	1.905	1.716	1.905	85- 90	50.44	24781	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): 19207 lm

%lum = 77.5%

%lamp = 77.5%

Conical surface Flux(120deg): 22692 lm

%lum = 91.6%

%lamp = 91.6%

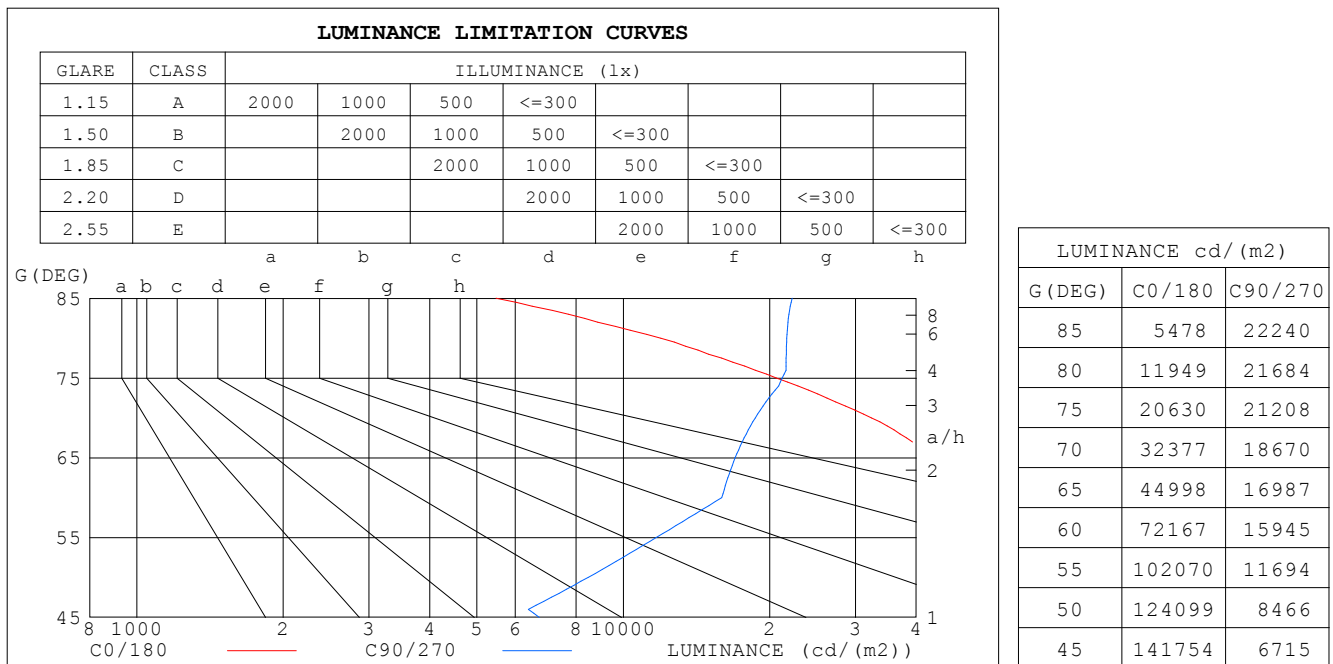
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-02

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

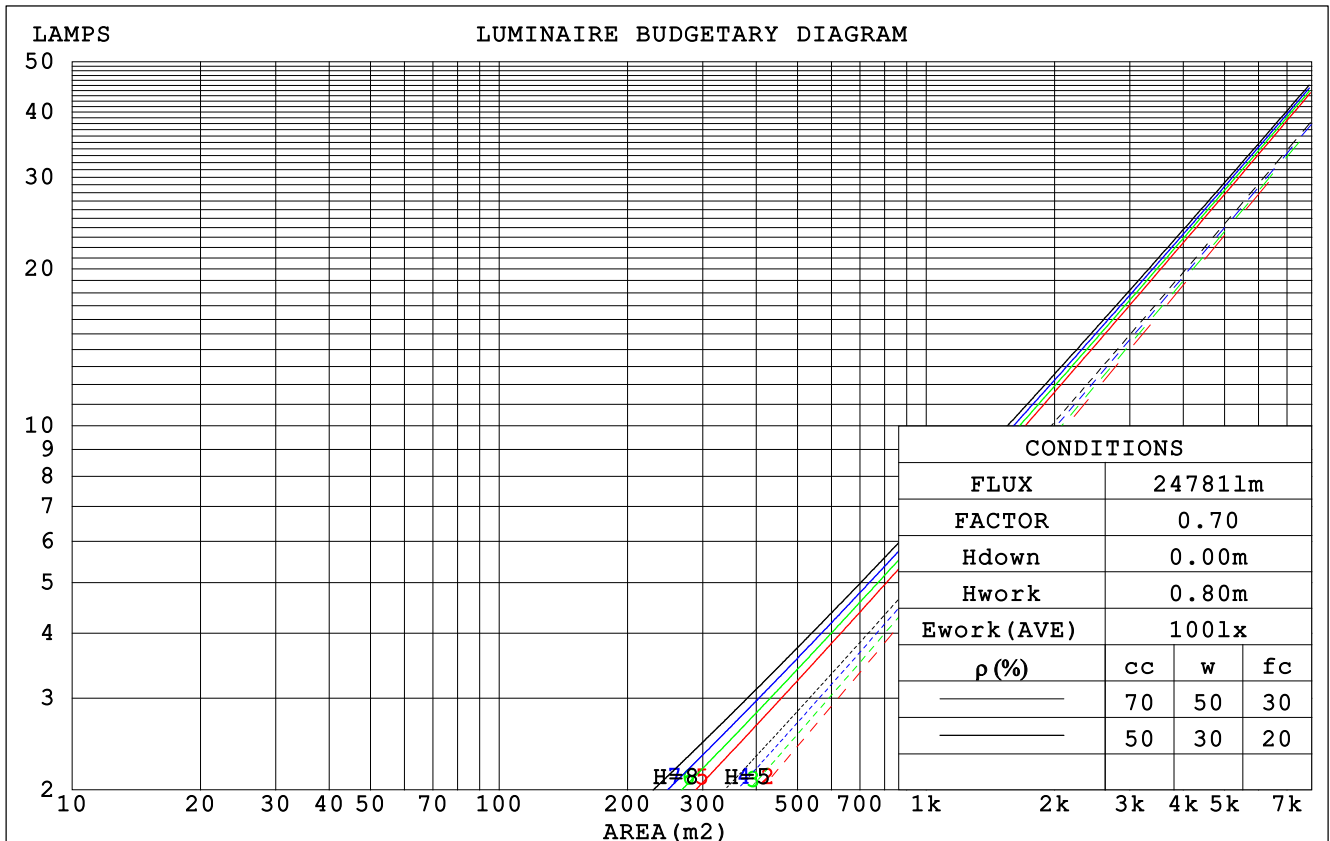
Checker:

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	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.90
2.0	.98	.93	.88	.96	.91	.87	.93	.89	.85	.90	.86	.84	.87	.84	.82	.80
3.0	.89	.83	.78	.88	.82	.77	.85	.80	.76	.82	.78	.75	.80	.77	.74	.72
4.0	.82	.75	.70	.81	.74	.69	.78	.73	.68	.76	.71	.67	.74	.70	.67	.65
5.0	.75	.68	.63	.74	.68	.63	.72	.66	.62	.71	.65	.61	.69	.64	.61	.59
6.0	.70	.62	.57	.69	.62	.57	.67	.61	.57	.66	.60	.56	.64	.59	.56	.54
7.0	.65	.58	.53	.64	.57	.52	.63	.56	.52	.61	.56	.52	.60	.55	.51	.50
8.0	.60	.53	.49	.60	.53	.48	.59	.52	.48	.57	.52	.48	.56	.51	.48	.46
9.0	.57	.50	.45	.56	.49	.45	.55	.49	.45	.54	.49	.45	.53	.48	.44	.43
10.0	.53	.46	.42	.53	.46	.42	.52	.46	.42	.51	.45	.42	.50	.45	.42	.40



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	.231	.131	.042	.224	.128	.041	.211	.121	.039	.199	.115	.037	.189	.109	.035	
2.0	.220	.121	.037	.214	.118	.036	.203	.113	.035	.193	.108	.034	.183	.104	.033	
3.0	.207	.110	.033	.202	.108	.032	.192	.104	.032	.183	.100	.031	.175	.097	.030	
4.0	.194	.101	.030	.189	.099	.029	.181	.096	.029	.173	.093	.028	.166	.090	.027	
5.0	.182	.093	.027	.178	.091	.027	.171	.089	.026	.164	.086	.026	.157	.084	.025	
6.0	.171	.086	.025	.168	.085	.024	.161	.083	.024	.155	.081	.024	.149	.079	.023	
7.0	.161	.080	.023	.158	.079	.022	.153	.077	.022	.147	.075	.022	.142	.074	.022	
8.0	.153	.075	.021	.150	.074	.021	.145	.072	.021	.140	.071	.020	.135	.069	.020	
9.0	.145	.070	.020	.142	.069	.019	.137	.068	.019	.133	.067	.019	.129	.065	.019	
10.0	.137	.066	.018	.135	.065	.018	.131	.064	.018	.127	.063	.018	.123	.062	.018	

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	.141	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.163	.132	.107	.139	.114	.092	.095	.079	.064	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.083	.131	.098	.072	.090	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.085	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.007	
6.0	.128	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.121	.073	.038	.104	.063	.033	.072	.044	.024	.042	.026	.014	.014	.008	.005	
8.0	.115	.066	.033	.099	.058	.029	.069	.040	.020	.040	.024	.012	.013	.008	.004	
9.0	.110	.061	.029	.095	.053	.025	.066	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.105	.057	.025	.090	.050	.022	.063	.035	.016	.037	.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	28.1	29.3	28.3	29.5	29.6	16.6	17.7	16.8	17.9	18.1
3H	28.7	29.8	29.0	30.0	30.3	19.7	20.8	20.0	21.0	21.2
4H	28.9	29.9	29.2	30.2	30.4	21.2	22.3	21.5	22.5	22.8
6H	28.9	29.9	29.2	30.1	30.4	22.4	23.4	22.8	23.7	23.9
8H	28.9	29.8	29.2	30.1	30.3	22.9	23.8	23.2	24.1	24.3
12H	28.8	29.7	29.1	30.0	30.3	23.2	24.1	23.5	24.4	24.7
4H 2H	27.8	28.9	28.1	29.1	29.3	16.9	17.9	17.2	18.2	18.4
3H	28.5	29.4	28.8	29.7	29.9	20.2	21.1	20.6	21.4	21.7
4H	28.7	29.5	29.0	29.8	30.1	22.0	22.8	22.4	23.1	23.5
6H	28.7	29.4	29.1	29.8	30.1	23.5	24.2	23.9	24.5	24.9
8H	28.7	29.4	29.1	29.7	30.1	24.0	24.7	24.4	25.1	25.4
12H	28.7	29.3	29.1	29.7	30.1	24.4	25.0	24.9	25.4	25.8
8H 4H	28.5	29.2	28.9	29.6	29.9	22.1	22.8	22.5	23.1	23.5
6H	28.6	29.2	29.1	29.6	30.0	23.8	24.3	24.2	24.7	25.2
8H	28.6	29.1	29.1	29.5	30.0	24.5	25.0	24.9	25.4	25.8
12H	28.6	29.0	29.1	29.5	29.9	25.1	25.5	25.5	25.9	26.4
12H 4H	28.5	29.1	28.9	29.5	29.9	22.1	22.7	22.5	23.1	23.5
6H	28.6	29.1	29.0	29.5	30.0	23.8	24.3	24.2	24.7	25.1
8H	28.6	29.0	29.1	29.5	29.9	24.5	24.9	25.0	25.4	25.9
Variations with the observer position at spacings:										
S = 1.0H	+ 1.5 / - 1.6					+ 0.2 / - 0.2				
1.5H	+ 2.9 / - 3.7					+ 0.2 / - 0.2				
2.0H	+ 4.4 / - 6.1					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 24781 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.2)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	72	64	59	71	63	59	54
0.80	82	73	68	81	73	68	80	72	67	62
1.00	89	81	75	88	80	75	86	81	74	69
1.25	94	87	82	93	86	81	91	85	80	75
1.50	98	91	86	97	90	86	94	89	84	79
2.00	103	97	92	101	95	91	98	93	90	83
2.50	105	100	95	103	98	95	100	96	93	86
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

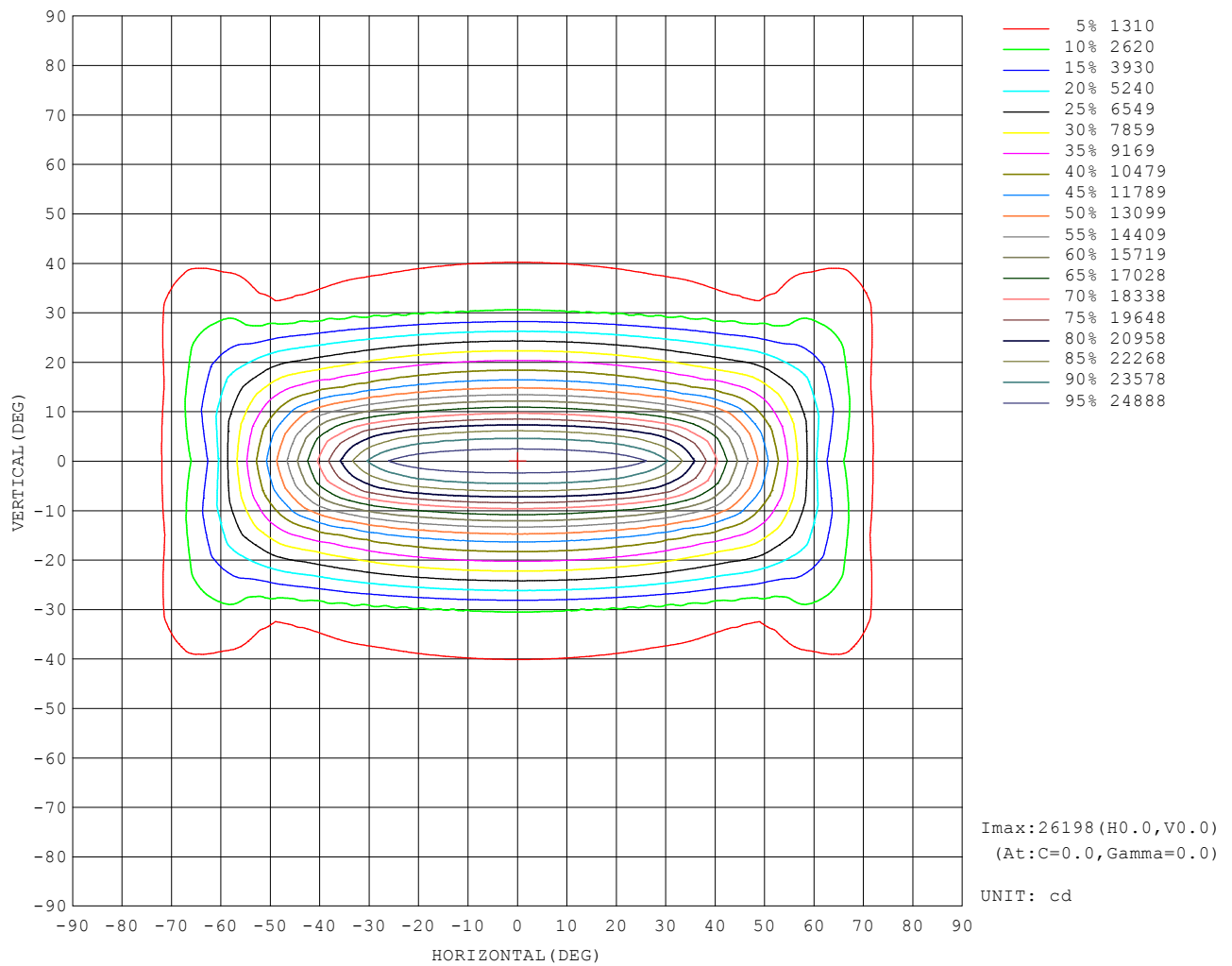
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-02

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



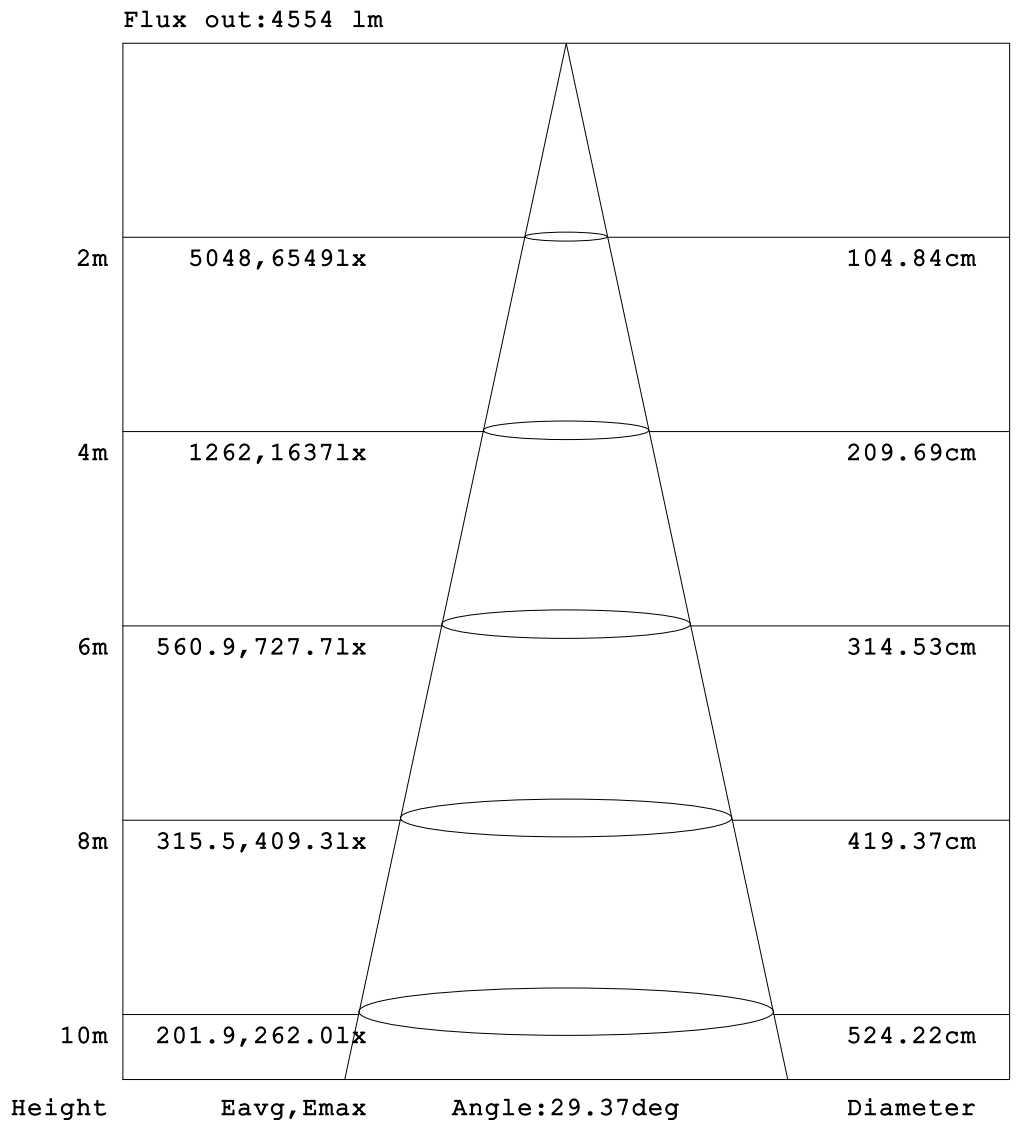
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-02

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.

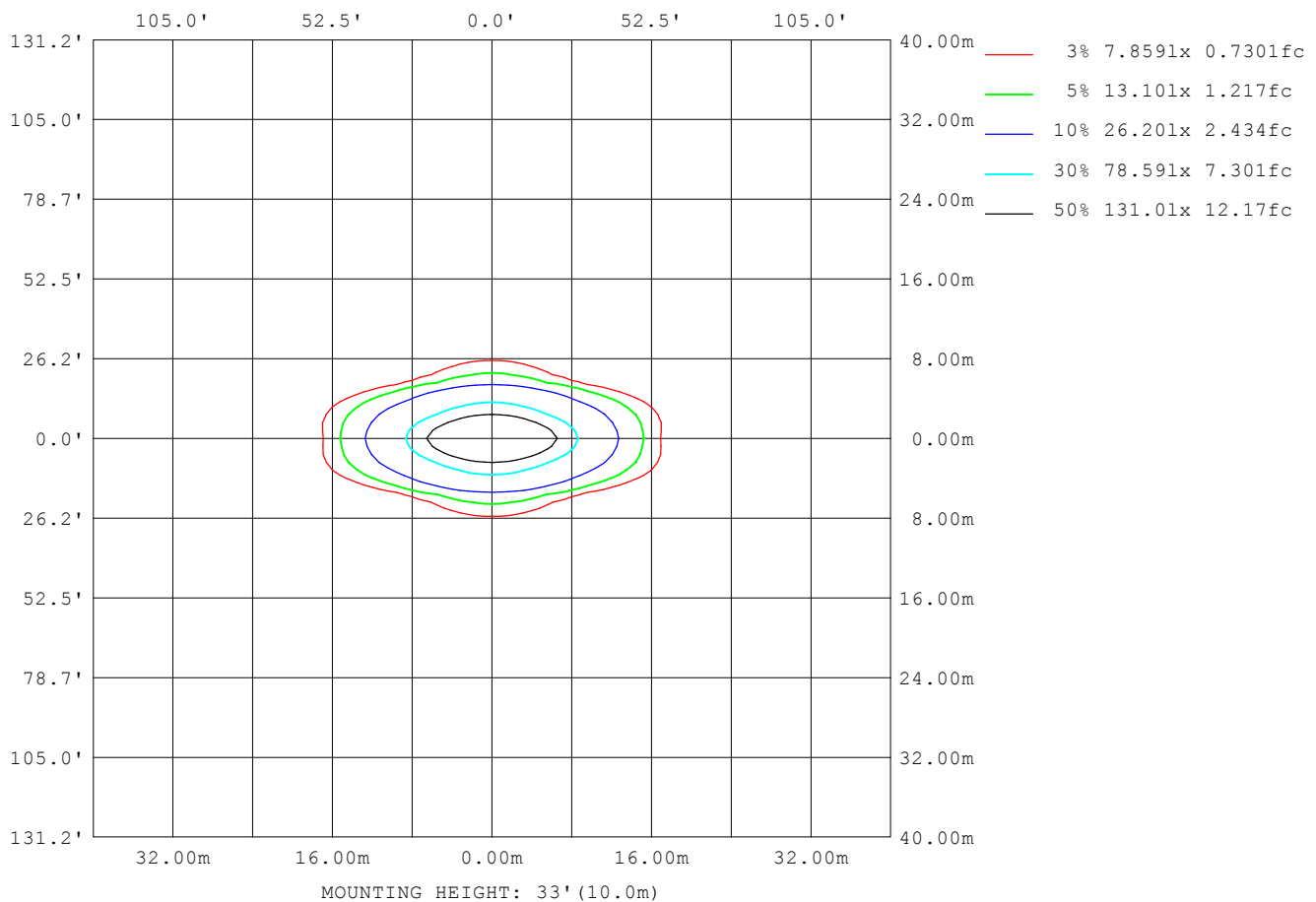
C Range: 0 - 360 DEG
C Interval: 5.0 DEG
Test Speed: HIGH
Temperature: 25.3 DEG
Operators:
Test Date: 2017-03-02

γ Range: 0 - 90 DEG
 γ Interval: 0.5 DEG
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



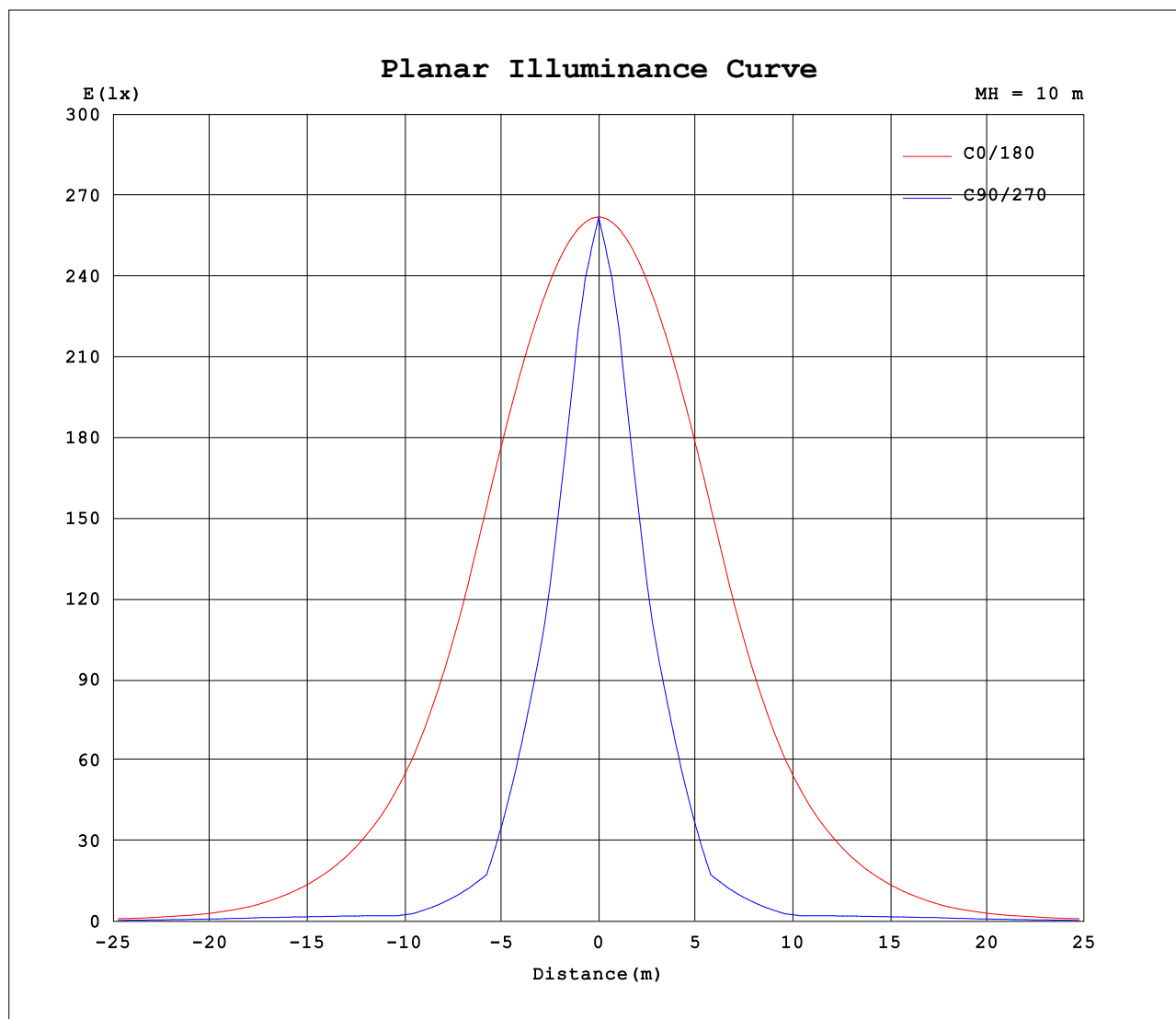
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-02

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: