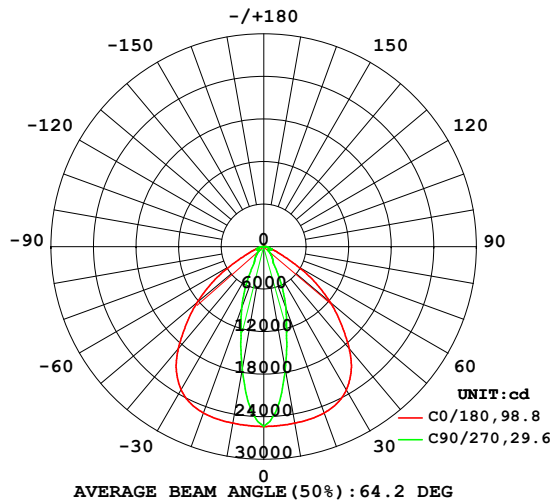


LUMINAIRE PHOTOMETRIC TEST REPORT

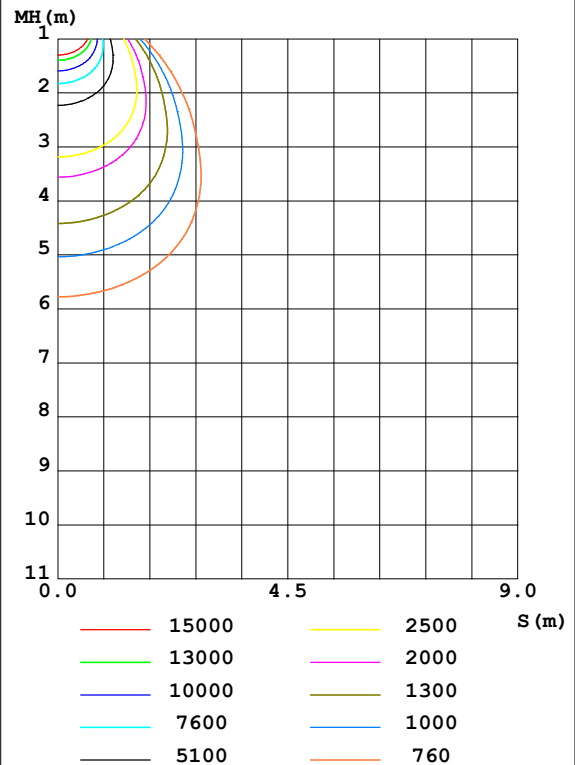
Test:U:230.0V I:0.8228A P:182.7W PF:0.9657 Lamp Flux:24604.3x1 lm					
NAME: LHB03-180		TYPE:180W		WEIGHT:	
SPEC.:5000K Ra80 30100DEG L00301		DIM.: 0.621*0.307*0.061		SERIAL No.:	
MFR.:		SUR.:0.57*0.27		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 134.65 lm/W			
MODEL	LHB03-180	I _{max} (cd)	25360	S/MH(C0/180)	1.34
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	0.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	24604	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	24604.3	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: 2017-07-03

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	2533	2375	2266	2375	2533	2374	2266	2374	0- 5	584.9	584.9	2.38,2.38
10	2529	2049	1757	2049	2529	2047	1757	2047	5- 10	1594	2179	8.85,8.85
15	2520	1652	1253	1652	2520	1649	1253	1649	10- 15	2266	4444	18.1,18.1
20	2496	1263	912.1	1263	2496	1261	912.1	1261	15- 20	2627	7072	28.7,28.7
25	2442	977.5	592.8	977.5	2442	974.3	592.8	974.3	20- 25	2769	9841	40,40
30	2332	716.7	273.5	716.7	2332	713.3	273.5	713.3	25- 30	2675	12516	50.9,50.9
35	2149	451.1	223.8	451.1	2149	447.8	223.8	447.8	30- 35	2424	14940	60.7,60.7
40	1876	216.0	174.1	216.0	1876	213.0	174.1	213.0	35- 40	2177	17117	69.6,69.6
45	1545	171.8	124.5	171.8	1545	169.6	124.5	169.6	40- 45	1866	18983	77.2,77.2
50	1228	127.8	74.80	127.8	1228	126.2	74.80	126.2	45- 50	1517	20500	83.3,83.3
55	895.2	82.89	84.57	82.89	895.2	82.23	84.57	82.23	50- 55	1173	21673	88.1,88.1
60	544.9	44.54	94.33	44.54	544.9	44.55	94.33	44.55	55- 60	893.0	22566	91.7,91.7
65	283.1	40.27	104.1	40.27	283.1	40.24	104.1	40.24	60- 65	685.7	23251	94.5,94.5
70	160.1	35.10	113.8	35.10	160.1	35.03	113.8	35.03	65- 70	529.1	23781	96.7,96.7
75	77.53	29.35	85.74	29.35	77.53	29.27	85.74	29.27	70- 75	389.8	24170	98.2,98.2
80	30.12	19.66	57.63	19.66	30.12	19.63	57.63	19.63	75- 80	249.6	24420	99.3,99.3
85	7.162	10.55	29.52	10.55	7.162	10.56	29.52	10.56	80- 85	136.2	24556	99.8,99.8
90	0.7267	1.963	1.406	1.963	0.7267	2.010	1.406	2.010	85- 90	48.11	24604	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): 18983 lm

%lum = 77.2%

%lamp = 77.2%

Conical surface Flux(120deg): 22566 lm

%lum = 91.7%

%lamp = 91.7%

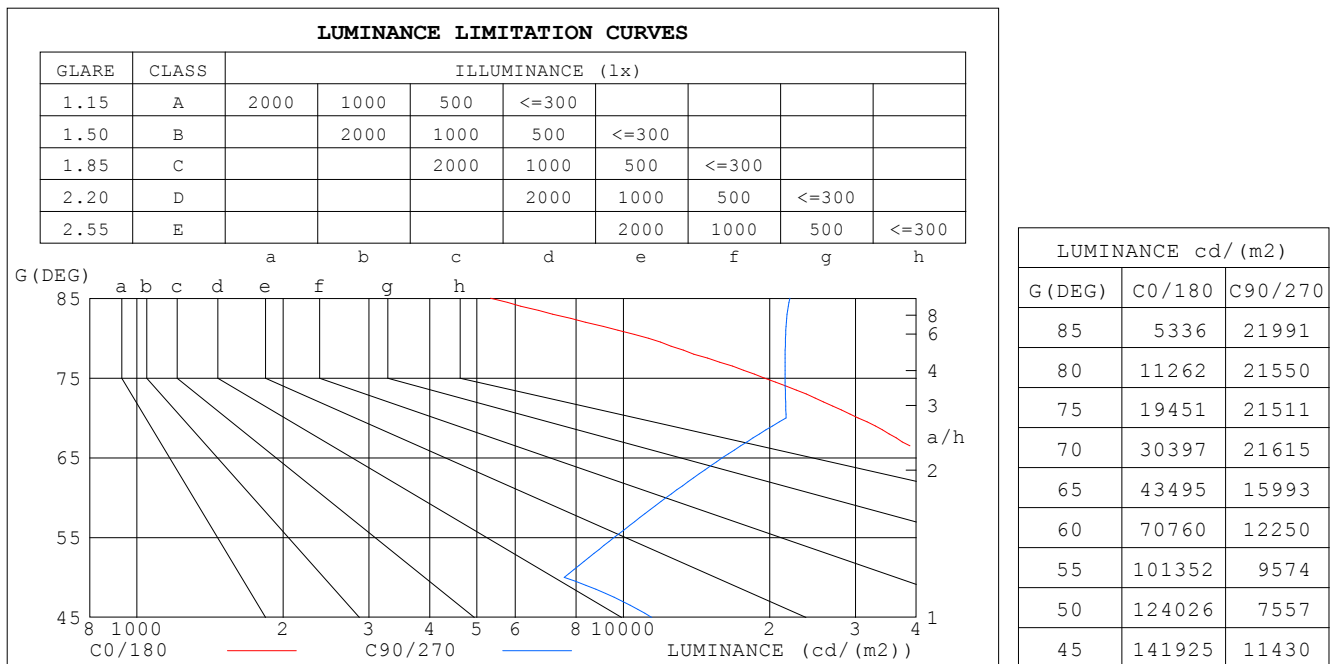
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

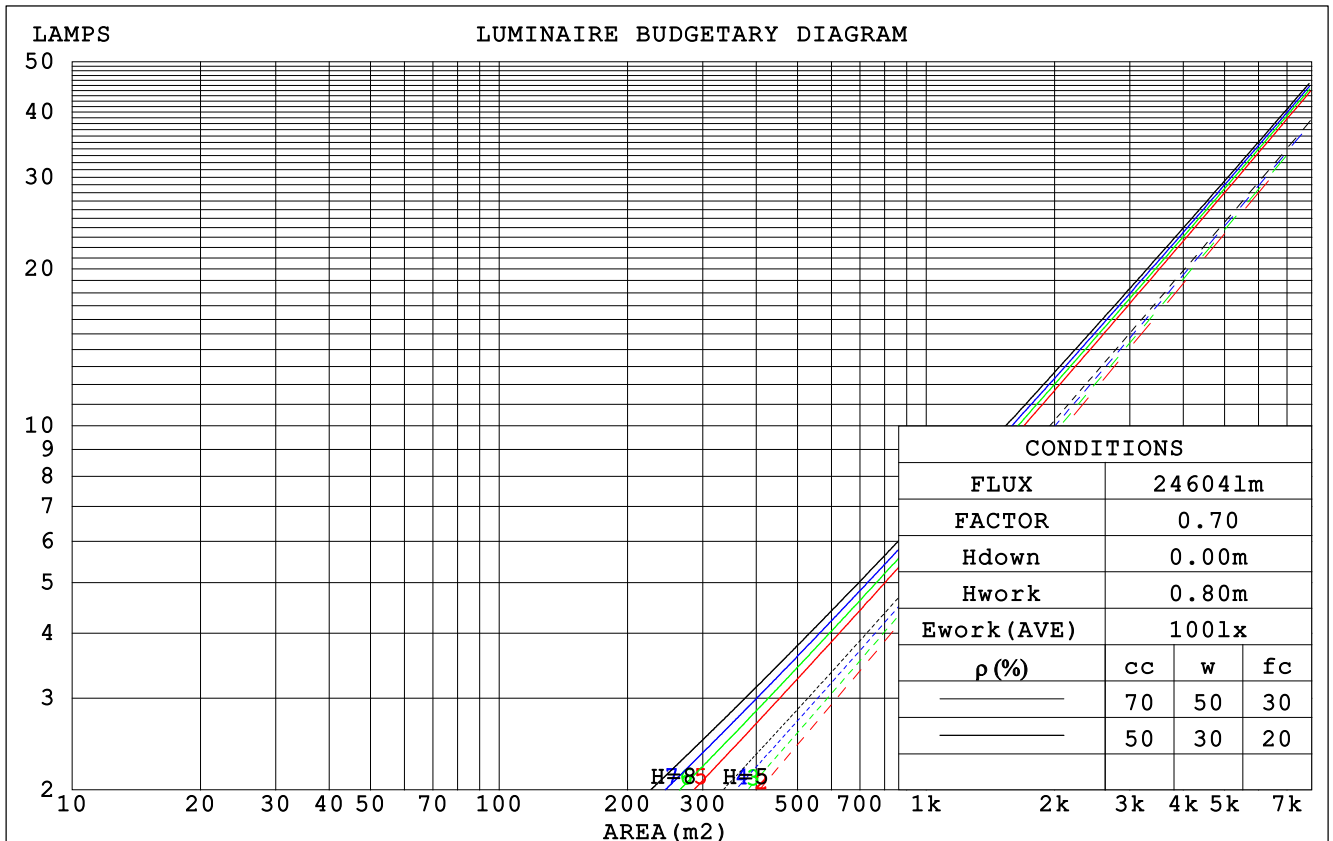
Checker:

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

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	1.00
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	.83	.87	.84	.82	.80
3.0	.89	.83	.78	.88	.82	.77	.85	.80	.76	.82	.78	.75	.80	.76	.73	.72
4.0	.82	.75	.69	.80	.74	.69	.78	.72	.68	.76	.71	.67	.74	.70	.66	.65
5.0	.75	.68	.63	.74	.67	.62	.72	.66	.62	.70	.65	.61	.69	.64	.60	.59
6.0	.69	.62	.57	.69	.62	.57	.67	.61	.56	.65	.60	.56	.64	.59	.55	.54
7.0	.64	.57	.52	.64	.57	.52	.62	.56	.52	.61	.55	.51	.60	.55	.51	.49
8.0	.60	.53	.48	.59	.53	.48	.58	.52	.48	.57	.52	.48	.56	.51	.47	.46
9.0	.56	.49	.45	.56	.49	.45	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
10.0	.53	.46	.42	.52	.46	.42	.51	.45	.41	.51	.45	.41	.50	.45	.41	.40



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	.231	.132	.042	.224	.128	.041	.212	.121	.039	.200	.115	.037	.189	.109	.035	
2.0	.221	.121	.037	.215	.118	.036	.204	.113	.035	.193	.108	.034	.184	.104	.033	
3.0	.208	.110	.033	.202	.108	.033	.193	.104	.032	.184	.101	.031	.176	.097	.030	
4.0	.195	.101	.030	.190	.100	.029	.182	.096	.029	.174	.094	.028	.167	.091	.028	
5.0	.183	.093	.027	.179	.092	.027	.172	.089	.026	.165	.087	.026	.158	.085	.025	
6.0	.172	.086	.025	.169	.085	.025	.162	.083	.024	.156	.081	.024	.150	.079	.023	
7.0	.162	.080	.023	.159	.079	.023	.153	.078	.022	.148	.076	.022	.143	.074	.022	
8.0	.153	.075	.021	.151	.074	.021	.145	.073	.021	.141	.071	.021	.136	.070	.020	
9.0	.145	.070	.020	.143	.070	.020	.138	.068	.019	.134	.067	.019	.130	.066	.019	
10.0	.138	.066	.018	.136	.066	.018	.132	.064	.018	.128	.063	.018	.124	.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	.096	.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	.066	.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	.122	.073	.038	.105	.063	.033	.072	.044	.024	.042	.026	.014	.014	.009	.005	
8.0	.116	.067	.033	.100	.058	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.110	.061	.029	.095	.053	.025	.066	.037	.018	.038	.022	.011	.012	.007	.003	
10.0	.105	.057	.025	.091	.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:2017-07-03

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	28.1	29.3	28.3	29.5	29.7	16.2	17.4	16.4	17.5	17.7
3H	28.7	29.8	29.0	30.0	30.2	19.9	21.0	20.1	21.2	21.4
4H	28.8	29.9	29.1	30.1	30.3	21.4	22.5	21.7	22.7	22.9
6H	28.8	29.8	29.1	30.0	30.3	22.5	23.5	22.8	23.8	24.0
8H	28.8	29.7	29.1	30.0	30.3	22.9	23.9	23.3	24.2	24.4
12H	28.7	29.6	29.1	29.9	30.2	23.2	24.2	23.6	24.4	24.7
4H 2H	27.8	28.9	28.1	29.1	29.3	16.6	17.6	16.9	17.9	18.1
3H	28.4	29.3	28.8	29.6	29.9	20.4	21.3	20.7	21.6	21.9
4H	28.6	29.4	29.0	29.7	30.0	22.2	23.0	22.5	23.3	23.6
6H	28.6	29.4	29.0	29.7	30.1	23.5	24.2	23.9	24.6	24.9
8H	28.6	29.3	29.0	29.7	30.0	24.0	24.7	24.4	25.0	25.4
12H	28.6	29.2	29.0	29.6	30.0	24.4	25.0	24.8	25.4	25.8
8H 4H	28.5	29.2	28.9	29.5	29.9	22.2	22.9	22.6	23.2	23.6
6H	28.5	29.1	29.0	29.5	29.9	23.7	24.3	24.1	24.7	25.1
8H	28.6	29.0	29.0	29.5	29.9	24.4	24.8	24.8	25.3	25.7
12H	28.5	29.0	29.0	29.4	29.9	24.9	25.3	25.4	25.8	26.3
12H 4H	28.4	29.1	28.9	29.4	29.8	22.2	22.8	22.6	23.2	23.6
6H	28.5	29.0	29.0	29.4	29.9	23.7	24.2	24.1	24.6	25.0
8H	28.5	28.9	29.0	29.4	29.9	24.4	24.8	24.8	25.2	25.7
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 1.6					+ 0.2 / - 0.3				
1.5H	+ 2.9 / - 3.7					+ 0.1 / - 0.2				
2.0H	+ 4.4 / - 5.7					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 24604 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.1)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	58	72	63	58	71	63	58	53
0.80	82	73	67	81	73	67	79	72	67	62
1.00	88	80	75	87	80	75	85	80	74	69
1.25	94	86	81	93	86	81	90	84	80	74
1.50	98	91	86	96	90	85	94	88	84	78
2.00	103	96	92	101	95	91	98	93	90	83
2.50	105	100	95	103	98	94	100	96	92	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		

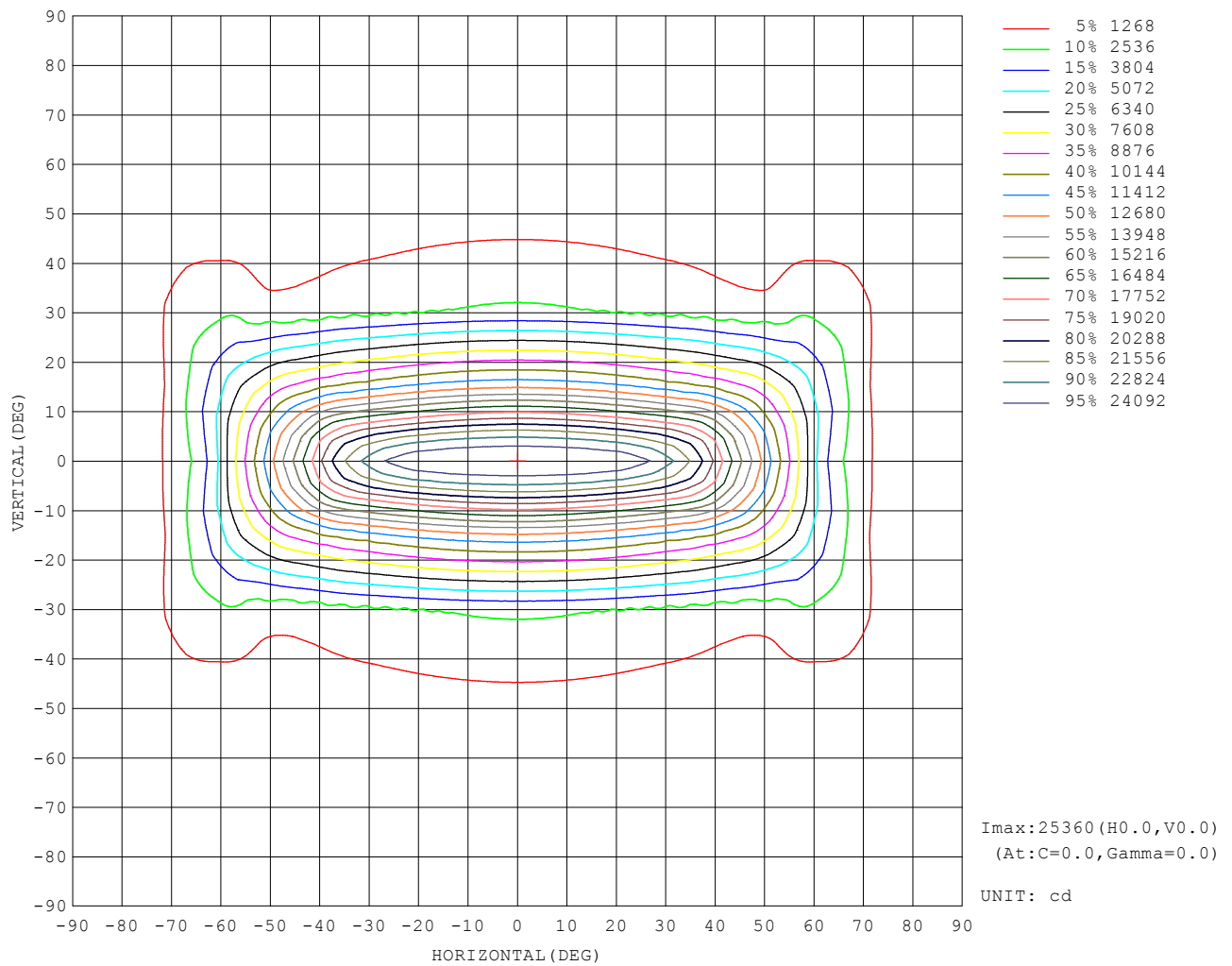
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



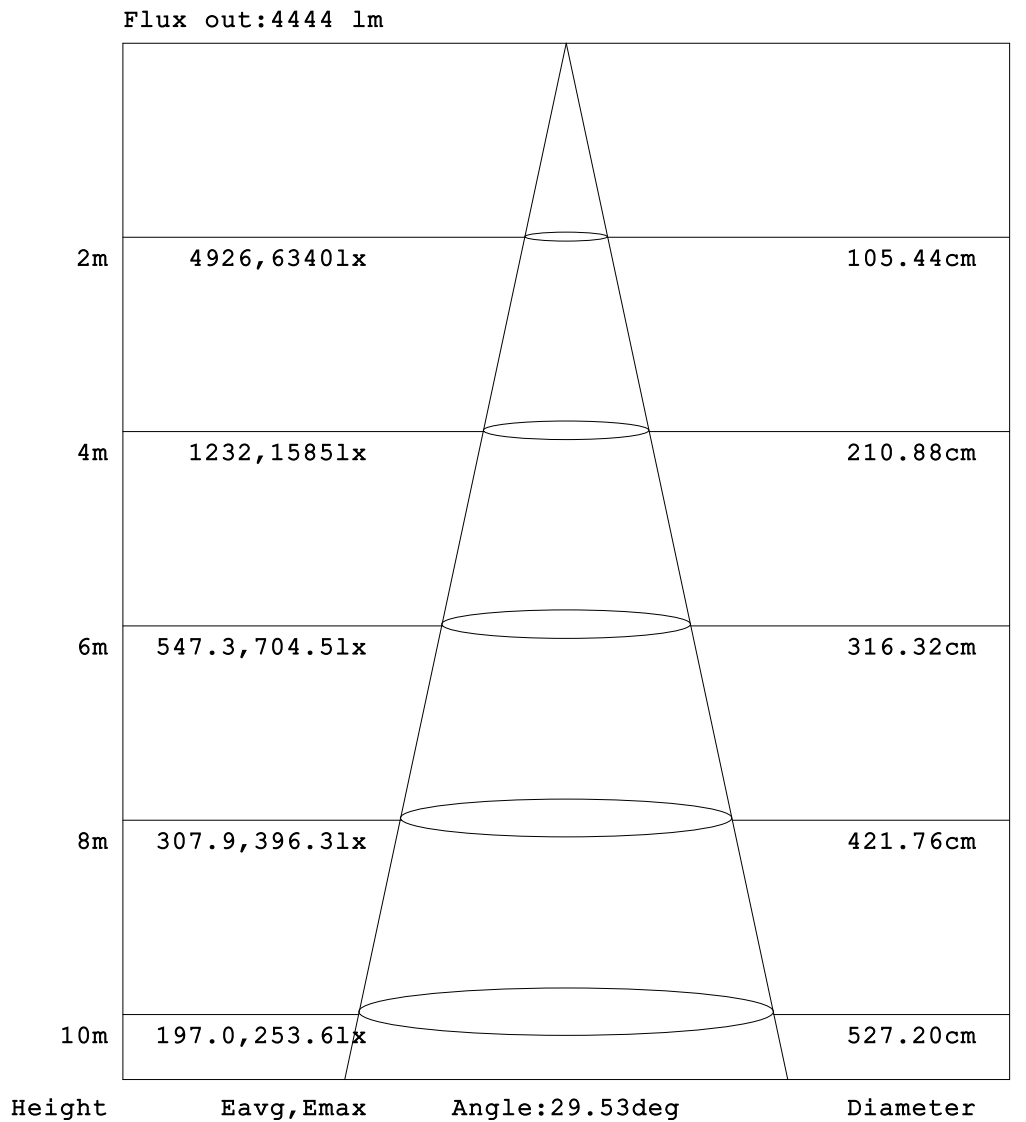
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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.

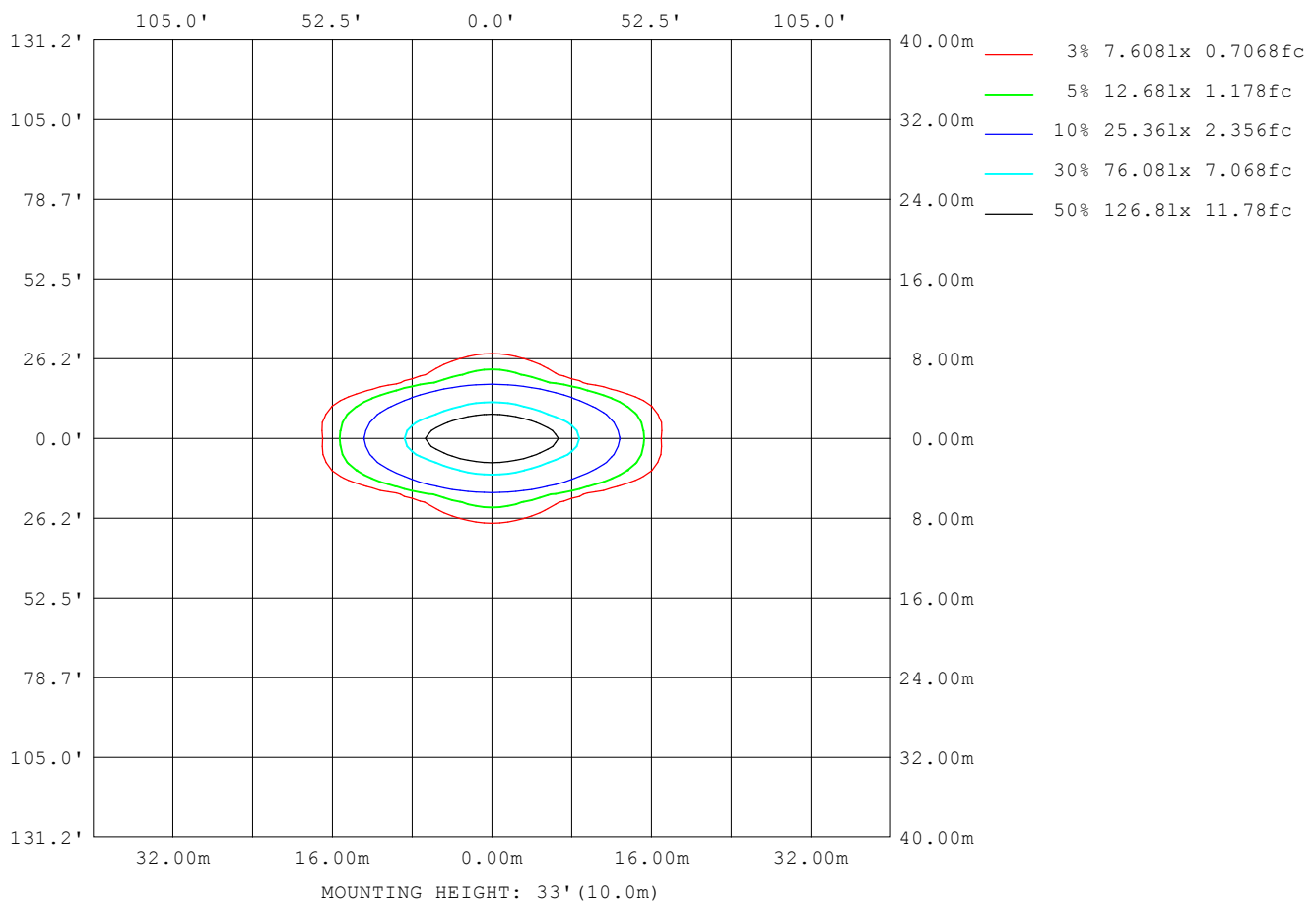
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



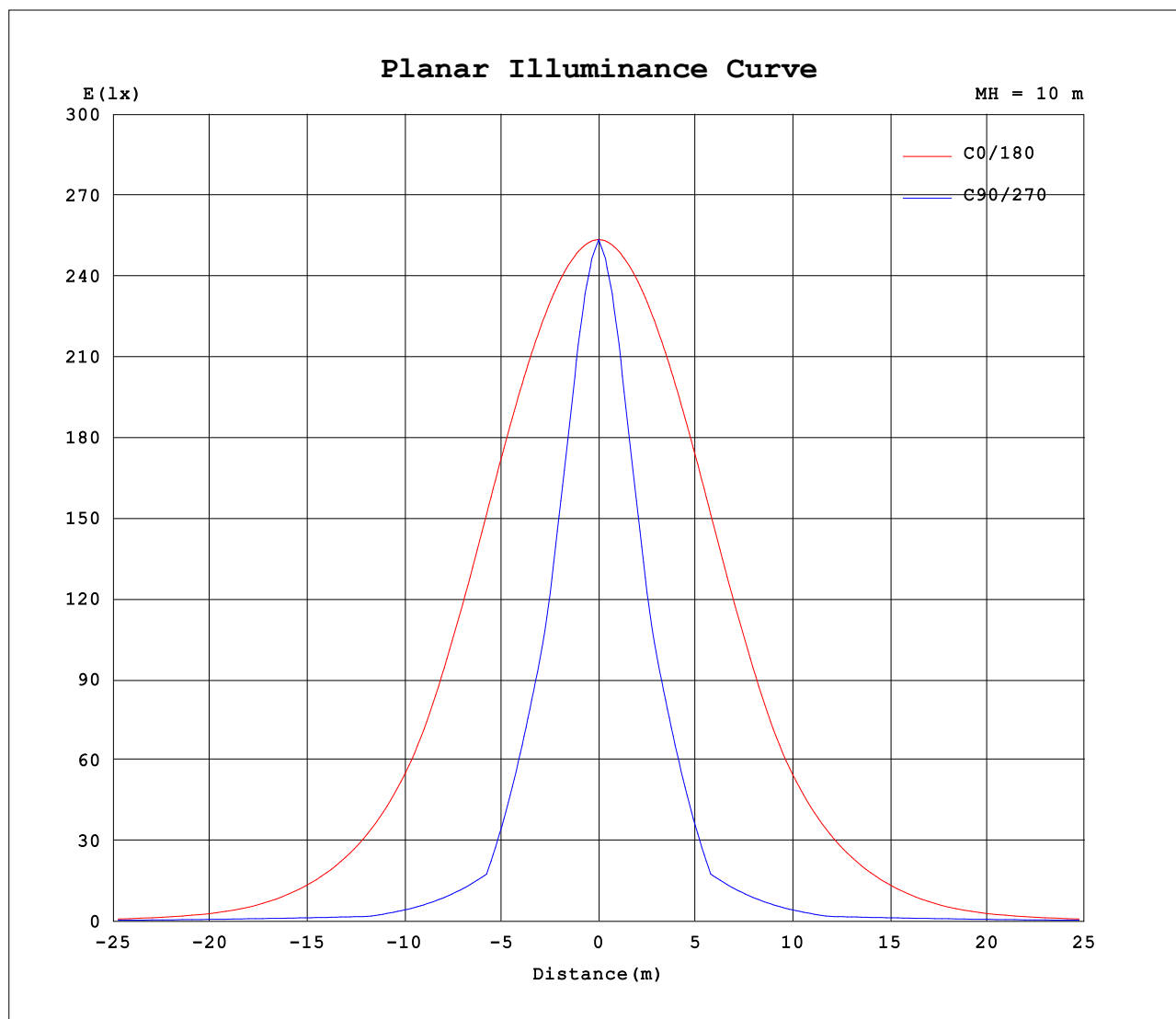
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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: 2017-07-03

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:

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

Assessor: