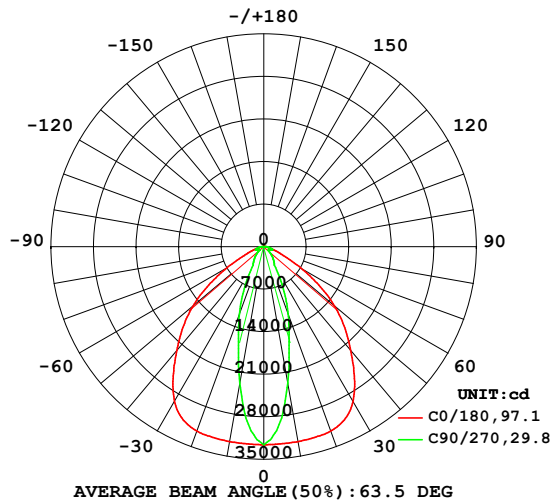


LUMINAIRE PHOTOMETRIC TEST REPORT

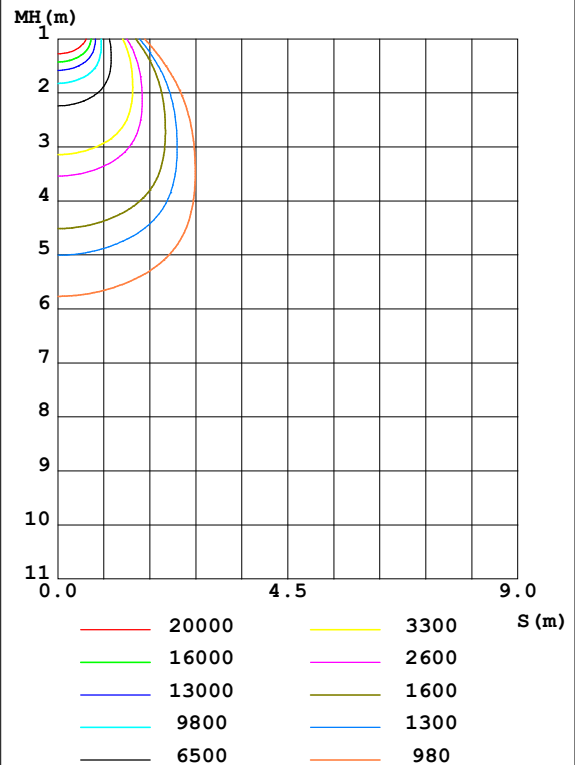
Test:U:229.9V I:1.053A P:236.5W PF:0.9772 Lamp Flux:31496.6x1 lm		
NAME: LHB03-240	TYPE:240W	WEIGHT:
SPEC.:5000K Ra80 30100DEG L00301	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.18 lm/W			
MODEL	LHB03-240	Imax(cd)	32589	S/MH(C0/180)	1.30
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH(C90/270)	0.49
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	31497	η UP,DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	31496.6	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1
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

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	3257	3068	2937	3068	3257	3067	2937	3067	0- 5	753.8	753.8	2.39,2.39
10	3255	2666	2282	2666	3255	2665	2282	2665	5- 10	2064	2818	8.95,8.95
15	3248	2150	1621	2150	3248	2150	1621	2150	10- 15	2940	5759	18.3,18.3
20	3228	1640	1180	1640	3228	1640	1180	1640	15- 20	3413	9172	29.1,29.1
25	3143	1269	769.0	1269	3143	1269	769.0	1269	20- 25	3599	12771	40.5,40.5
30	2939	932.1	357.5	932.1	2939	930.9	357.5	930.9	25- 30	3464	16235	51.5,51.5
35	2600	586.8	292.0	586.8	2600	587.3	292.0	587.3	30- 35	3093	19328	61.4,61.4
40	2225	280.3	226.5	280.3	2225	284.7	226.5	284.7	35- 40	2711	22039	70,70
45	1883	221.2	161.0	221.2	1883	225.6	161.0	225.6	40- 45	2307	24346	77.3,77.3
50	1524	162.5	95.53	162.5	1524	166.3	95.53	166.3	45- 50	1888	26234	83.3,83.3
55	1107	104.7	108.2	104.7	1107	106.5	108.2	106.5	50- 55	1462	27696	87.9,87.9
60	709.7	56.14	120.9	56.14	709.7	56.44	120.9	56.44	55- 60	1123	28819	91.5,91.5
65	379.7	50.95	133.6	50.95	379.7	51.32	133.6	51.32	60- 65	890.8	29709	94.3,94.3
70	222.7	44.58	146.3	44.58	222.7	45.02	146.3	45.02	65- 70	696.7	30406	96.5,96.5
75	109.2	37.40	110.3	37.40	109.2	37.92	110.3	37.92	70- 75	518.8	30925	98.2,98.2
80	40.23	25.24	74.36	25.24	40.23	25.65	74.36	25.65	75- 80	329.4	31254	99.2,99.2
85	9.887	13.71	38.38	13.71	9.887	14.03	38.38	14.03	80- 85	178.3	31433	99.8,99.8
90	0.9838	2.761	2.396	2.761	0.9838	3.026	2.396	3.026	85- 90	63.81	31497	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): 24346 lm

%lum = 77.3%

%lamp = 77.3%

Conical surface Flux(120deg): 28819 lm

%lum = 91.5%

%lamp = 91.5%

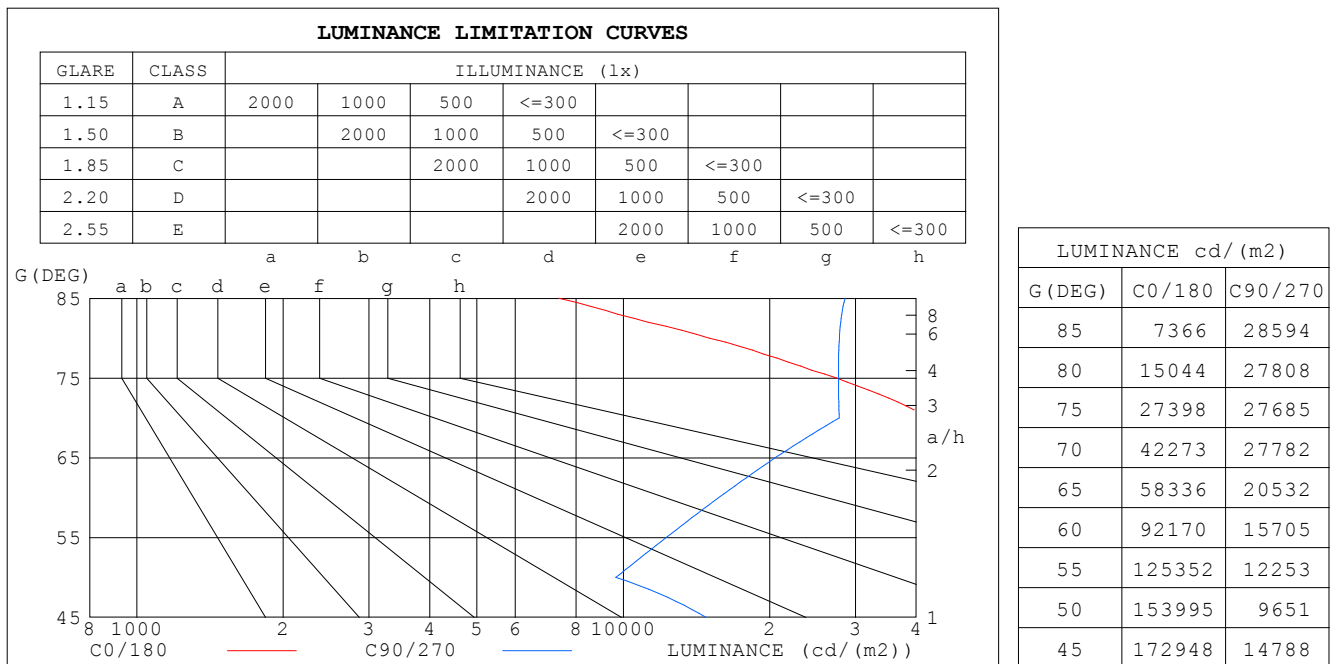
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

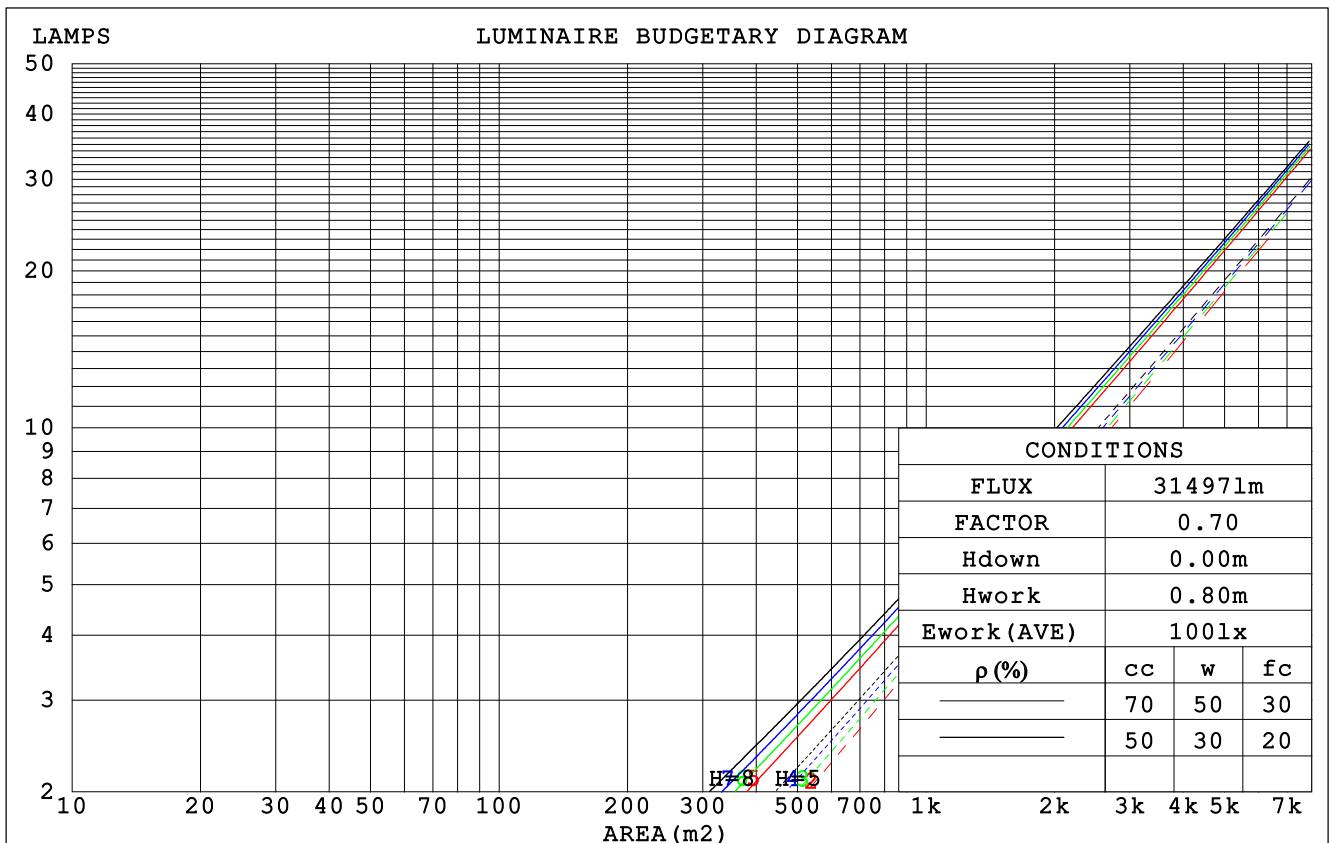
Checker:

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	.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	.89
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	.73	.68	.76	.71	.67	.74	.70	.67	.65
5.0	.75	.68	.63	.74	.67	.62	.72	.66	.62	.70	.65	.61	.69	.64	.61	.59
6.0	.70	.62	.57	.69	.62	.57	.67	.61	.56	.66	.60	.56	.64	.59	.56	.54
7.0	.65	.57	.52	.64	.57	.52	.62	.56	.52	.61	.56	.52	.60	.55	.51	.50
8.0	.60	.53	.48	.60	.53	.48	.58	.52	.48	.57	.52	.48	.56	.51	.48	.46
9.0	.56	.50	.45	.56	.49	.45	.55	.49	.45	.54	.48	.44	.53	.48	.44	.43
10.0	.53	.46	.42	.53	.46	.42	.52	.46	.42	.51	.45	.42	.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	.225	.128	.041	.212	.121	.039	.200	.115	.037	.189	.110	.035	
2.0	.220	.121	.037	.214	.118	.036	.203	.113	.035	.193	.108	.034	.184	.104	.033	
3.0	.207	.110	.033	.202	.108	.033	.192	.104	.032	.184	.101	.031	.175	.097	.030	
4.0	.194	.101	.030	.190	.099	.029	.181	.096	.029	.174	.093	.028	.166	.090	.028	
5.0	.182	.093	.027	.179	.092	.027	.171	.089	.026	.164	.087	.026	.158	.084	.025	
6.0	.172	.086	.025	.168	.085	.024	.162	.083	.024	.156	.081	.024	.150	.079	.023	
7.0	.162	.080	.023	.159	.079	.023	.153	.077	.022	.147	.076	.022	.142	.074	.022	
8.0	.153	.075	.021	.150	.074	.021	.145	.072	.021	.140	.071	.020	.135	.070	.020	
9.0	.145	.070	.020	.142	.069	.019	.138	.068	.019	.133	.067	.019	.129	.066	.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	.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	.121	.073	.038	.104	.063	.033	.072	.044	.024	.042	.026	.014	.014	.009	.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:2017-07-03

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	28.7	29.9	29.0	30.1	30.3	17.0	18.2	17.3	18.4	18.6
3H	29.5	30.6	29.8	30.8	31.0	20.7	21.8	21.0	22.0	22.2
4H	29.7	30.7	30.0	30.9	31.2	22.3	23.3	22.6	23.5	23.8
6H	29.7	30.6	30.0	30.9	31.2	23.4	24.4	23.7	24.6	24.9
8H	29.6	30.6	30.0	30.8	31.1	23.8	24.7	24.1	25.0	25.3
12H	29.6	30.5	29.9	30.8	31.1	24.1	25.0	24.4	25.3	25.6
4H 2H	28.5	29.5	28.8	29.7	30.0	17.4	18.5	17.7	18.7	19.0
3H	29.2	30.1	29.6	30.4	30.7	21.2	22.1	21.5	22.4	22.7
4H	29.4	30.3	29.8	30.6	30.9	23.0	23.8	23.3	24.1	24.4
6H	29.5	30.3	29.9	30.6	30.9	24.3	25.0	24.7	25.4	25.7
8H	29.5	30.2	29.9	30.5	30.9	24.8	25.5	25.2	25.9	26.3
12H	29.5	30.1	29.9	30.5	30.9	25.3	25.9	25.7	26.3	26.6
8H 4H	29.3	30.0	29.7	30.4	30.7	23.0	23.7	23.4	24.1	24.4
6H	29.4	30.0	29.9	30.4	30.8	24.5	25.1	25.0	25.5	25.9
8H	29.4	29.9	29.9	30.3	30.8	25.2	25.7	25.6	26.1	26.5
12H	29.4	29.8	29.9	30.3	30.8	25.8	26.2	26.2	26.6	27.1
12H 4H	29.3	29.9	29.7	30.3	30.7	23.0	23.6	23.4	24.0	24.4
6H	29.4	29.9	29.8	30.3	30.8	24.5	25.0	25.0	25.4	25.9
8H	29.4	29.8	29.9	30.3	30.7	25.2	25.6	25.7	26.1	26.5
Variations with the observer position at spacings:										
S = 1.0H	+ 1.5 / - 1.4					+ 0.2 / - 0.3				
1.5H	+ 2.7 / - 3.2					+ 0.1 / - 0.2				
2.0H	+ 4.2 / - 5.1					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 31497 lm Total Lamp Luminous Flux.(8log(F/F0) = 12.0)

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	59	72	64	58	71	63	58	53
0.80	82	73	68	81	73	68	80	72	67	62
1.00	88	80	75	87	80	75	86	80	74	69
1.25	94	86	81	93	86	81	91	85	80	75
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	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		

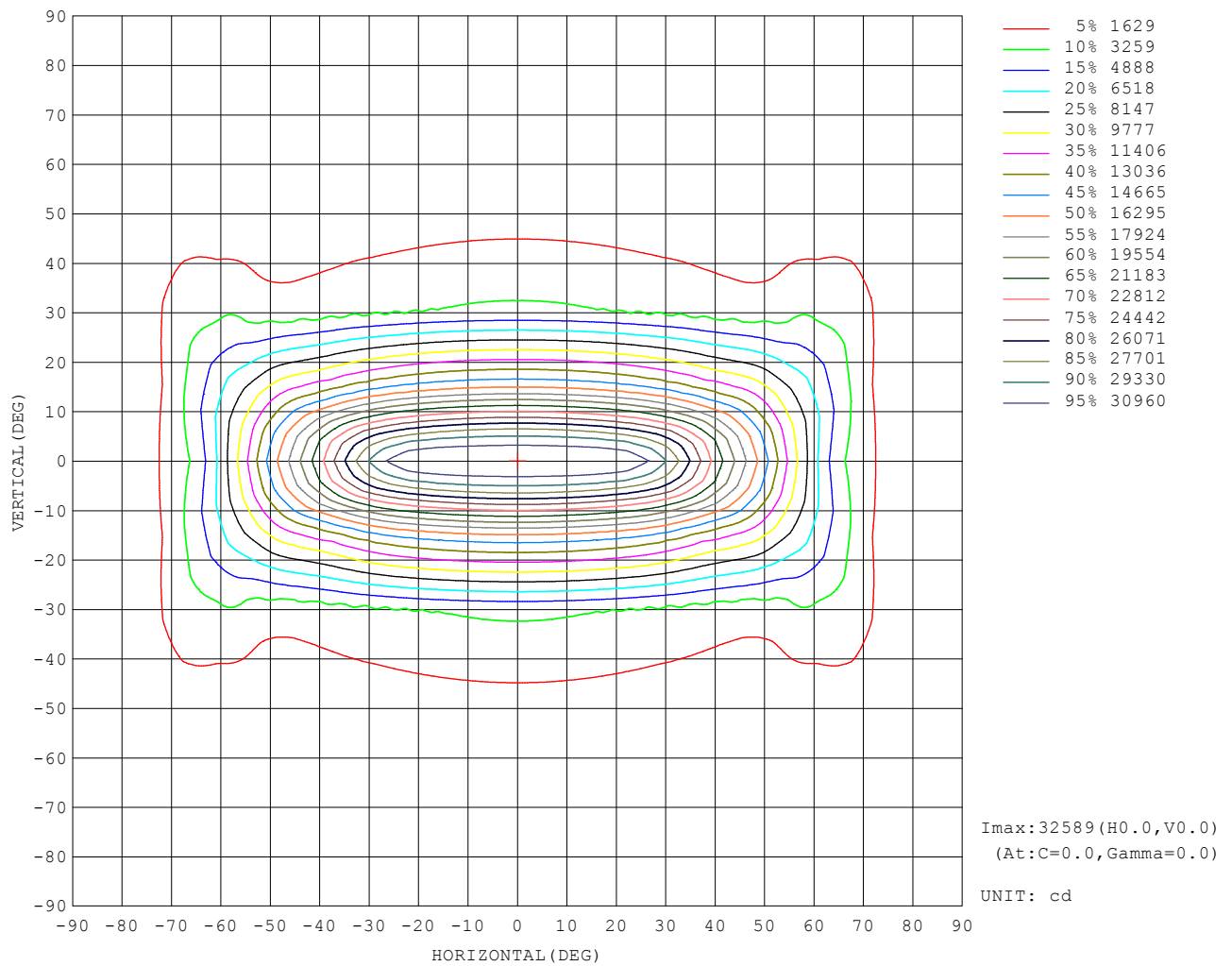
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



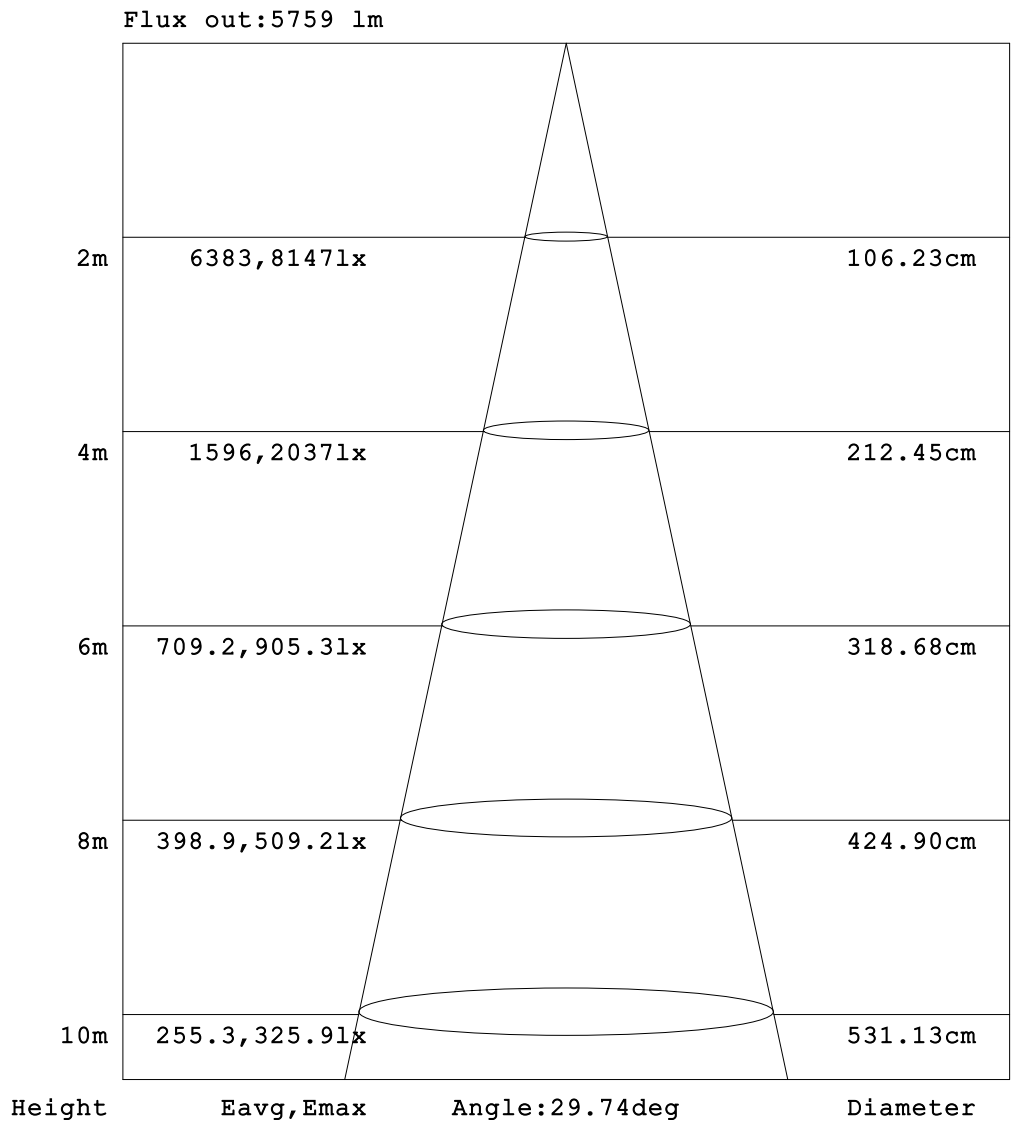
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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.

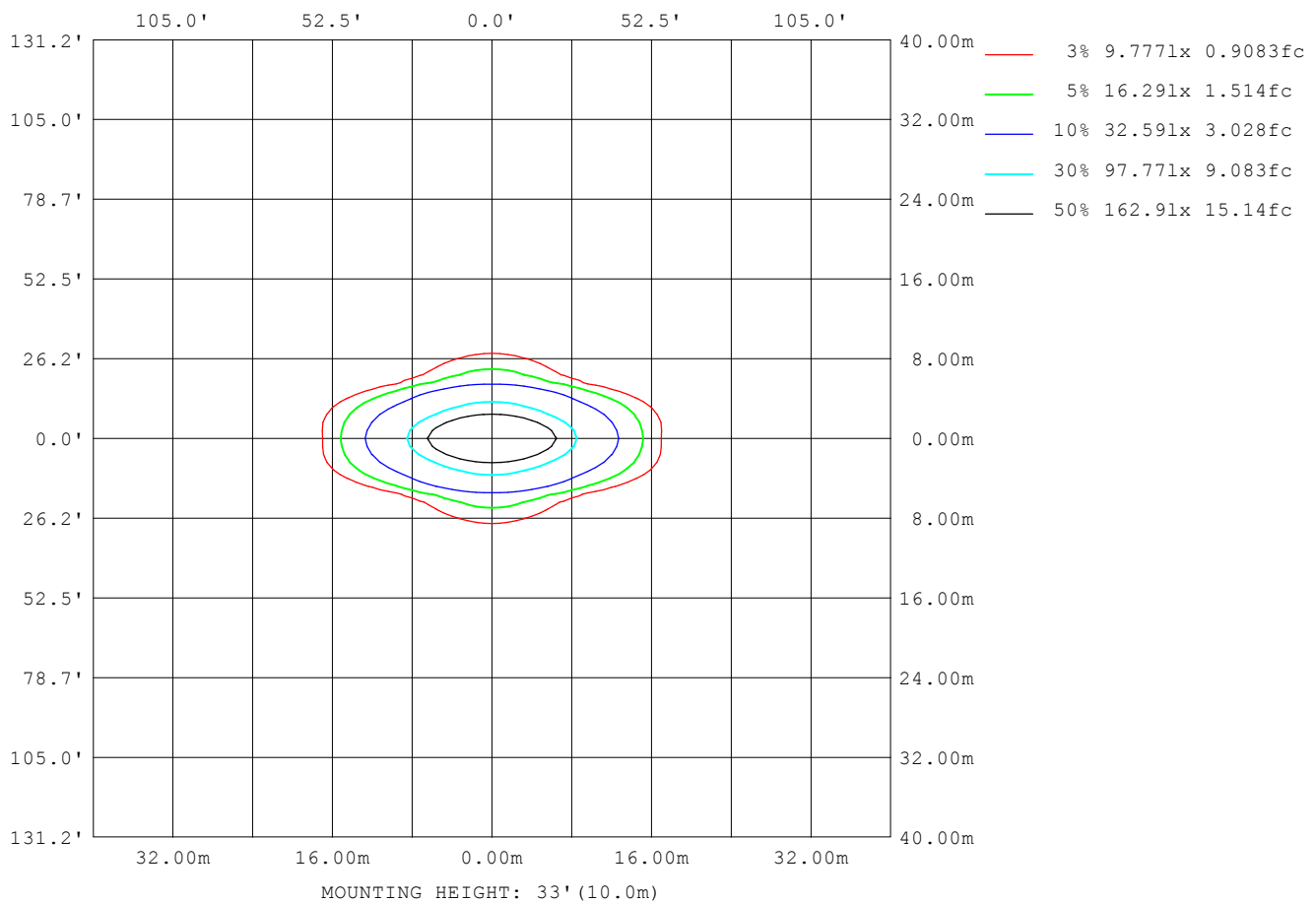
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



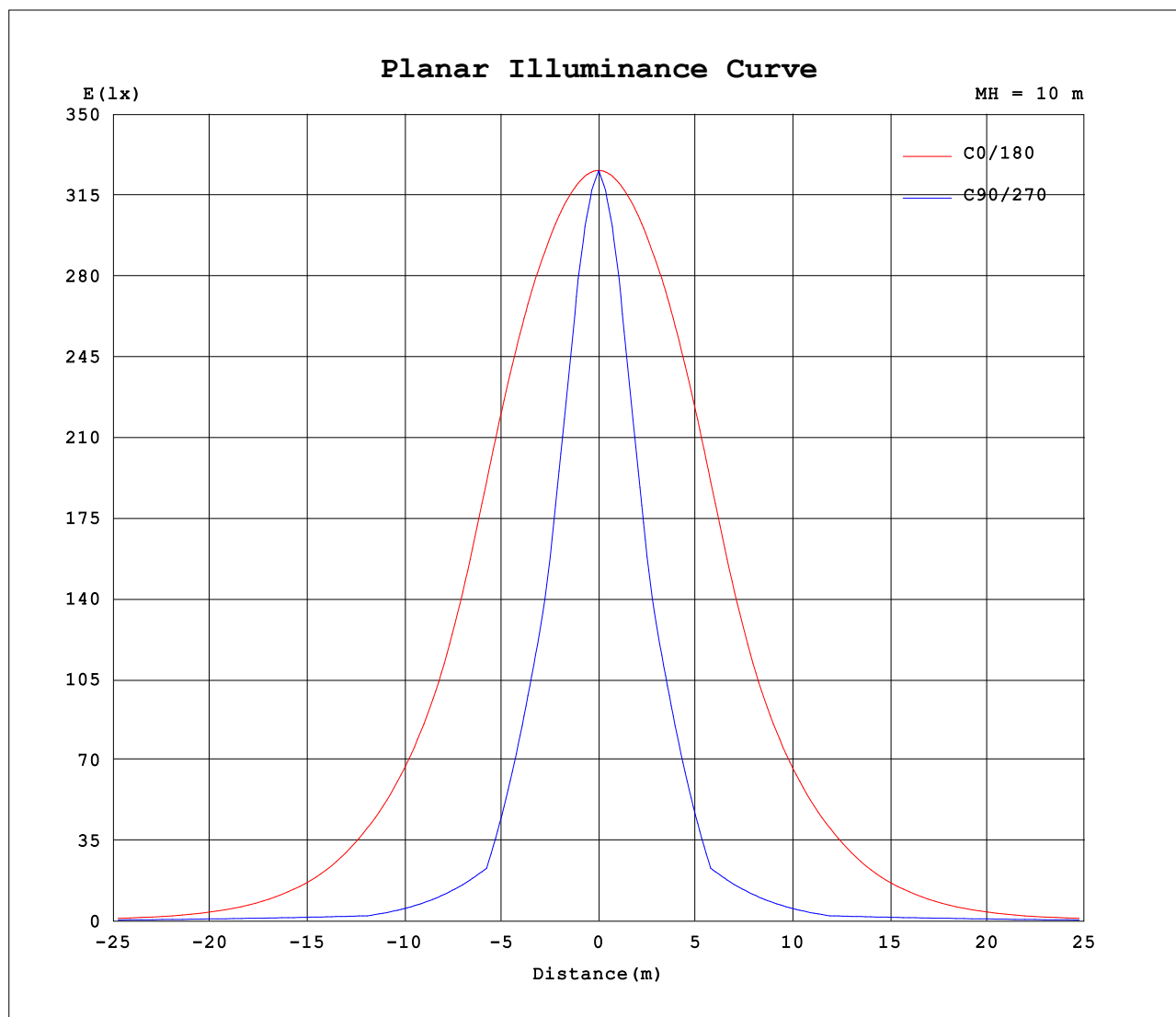
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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:

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

Assessor: