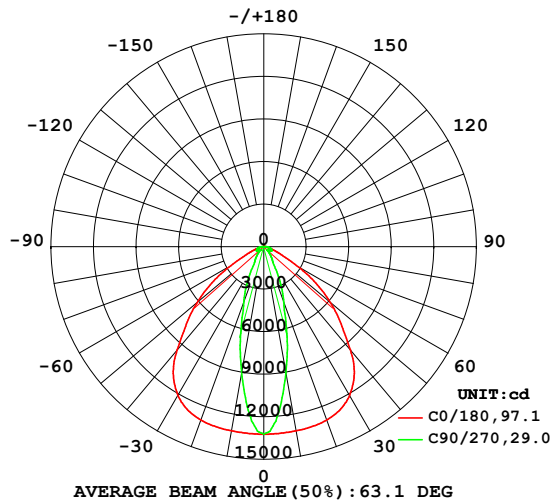


LUMINAIRE PHOTOMETRIC TEST REPORT

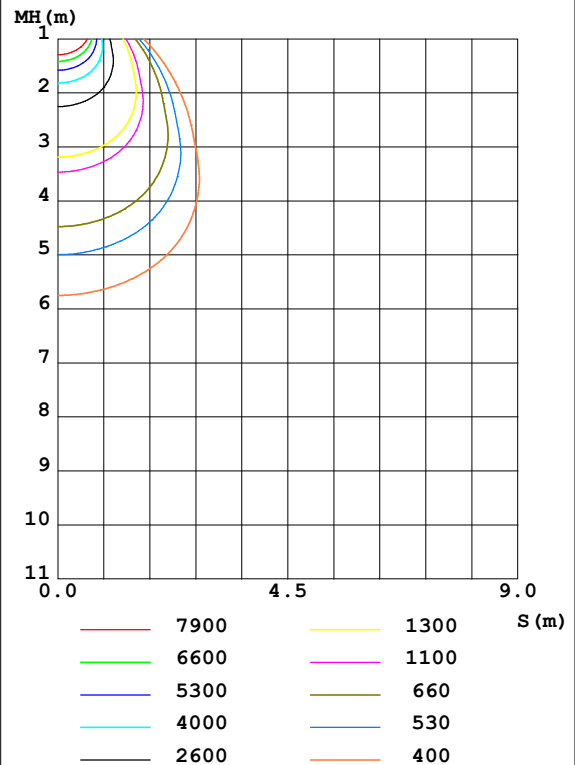
Test:U:220.0V I:0.4288A P:91.52W PF:0.9702 Lamp Flux:12216.2x1 lm		
NAME: LHB03-090	TYPE:90W	WEIGHT:
SPEC.:5000K Ra70 30100DEG L00301	DIM.: 0.34*0.3*0.065	SERIAL No.:
MFR.: EVERFINE	SUR.:0.28*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.49 lm/W			
MODEL	LHB03-090	I _{max} (cd)	13226	S/MH (C0/180)	1.31
NOMINAL POWER(W)	90	LOR(%)	100.0	S/MH (C90/270)	0.48
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	12216	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	12216.2	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.55

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:2017-01-09

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	1321	1247	1181	1247	1321	1247	1181	1247	0- 5	307.0	307.0	2.51,2.51
10	1319	1060	901.4	1060	1319	1059	901.4	1059	5- 10	830.7	1138	9.31,9.31
15	1314	847.0	634.3	847.0	1314	845.7	634.3	845.7	10- 15	1174	2312	18.9,18.9
20	1301	644.5	413.8	644.5	1301	644.1	413.8	644.1	15- 20	1338	3650	29.9,29.9
25	1271	445.2	273.1	445.2	1271	443.9	273.1	443.9	20- 25	1381	5030	41.2,41.2
30	1211	328.9	132.3	328.9	1211	327.2	132.3	327.2	25- 30	1329	6359	52.1,52.1
35	1112	209.8	98.72	209.8	1112	207.9	98.72	207.9	30- 35	1204	7564	61.9,61.9
40	951.5	103.2	65.13	103.2	951.5	101.2	65.13	101.2	35- 40	1066	8630	70.6,70.6
45	772.7	75.86	31.55	75.86	772.7	74.28	31.55	74.28	40- 45	878.1	9508	77.8,77.8
50	614.8	48.61	41.29	48.61	614.8	48.05	41.29	48.05	45- 50	702.2	10210	83.6,83.6
55	448.1	23.09	51.04	23.09	448.1	23.10	51.04	23.10	50- 55	566.8	10777	88.2,88.2
60	267.6	22.13	60.79	22.13	267.6	22.26	60.79	22.26	55- 60	445.2	11222	91.9,91.9
65	136.6	20.29	55.06	20.29	136.6	20.45	55.06	20.45	60- 65	341.5	11564	94.7,94.7
70	75.00	17.33	49.33	17.33	75.00	17.56	49.33	17.56	65- 70	252.6	11816	96.7,96.7
75	35.44	13.86	43.61	13.86	35.44	14.17	43.61	14.17	70- 75	181.4	11998	98.2,98.2
80	13.23	10.33	29.75	10.33	13.23	10.67	29.75	10.67	75- 80	123.5	12121	99.2,99.2
85	2.791	5.710	15.88	5.710	2.791	5.931	15.88	5.931	80- 85	68.84	12190	99.8,99.8
90	0.3518	1.408	2.021	1.408	0.3518	1.539	2.021	1.539	85- 90	26.27	12216	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): 9507.9 lm

%lum = 77.8%

%lamp = 77.8%

Conical surface Flux(120deg): 11222 lm

%lum = 91.9%

%lamp = 91.9%

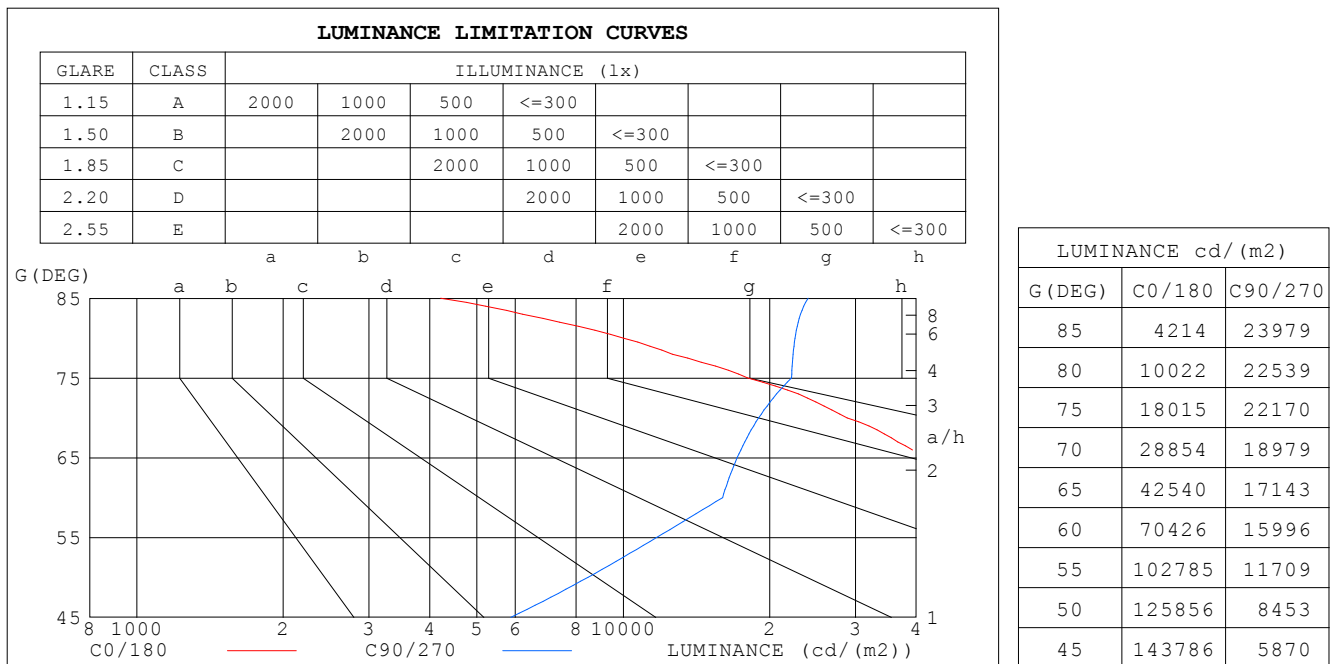
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-01-09

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: 2017-01-09

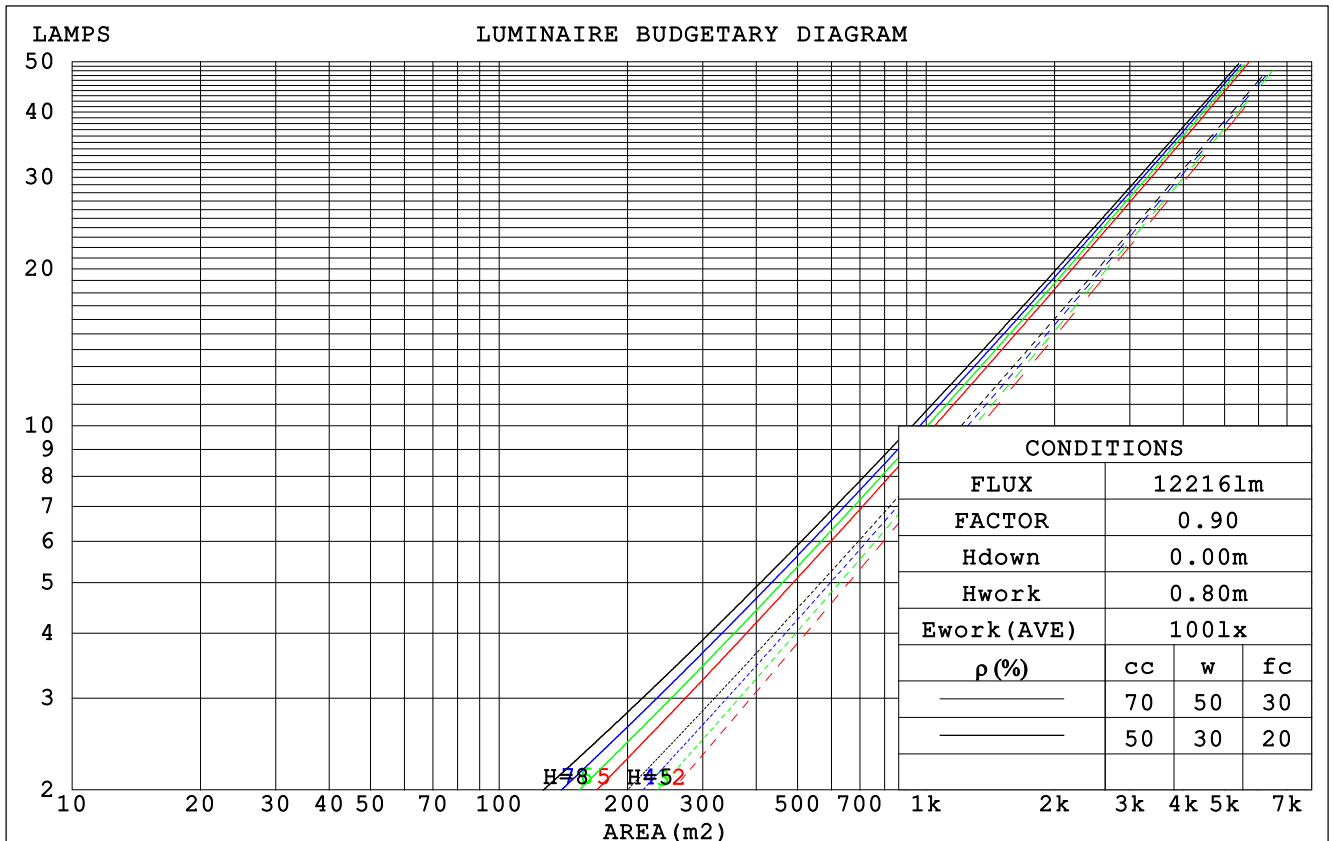
Checker:

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
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{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	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	.92	.90
2.0	.98	.93	.89	.96	.92	.88	.93	.89	.86	.90	.87	.84	.87	.84	.82	.80
3.0	.89	.83	.78	.88	.82	.78	.85	.80	.76	.83	.78	.75	.80	.77	.74	.72
4.0	.82	.75	.70	.81	.74	.69	.78	.73	.69	.76	.72	.68	.74	.70	.67	.65
5.0	.76	.68	.63	.75	.68	.63	.73	.67	.62	.71	.66	.62	.69	.65	.61	.59
6.0	.70	.63	.58	.69	.62	.57	.67	.61	.57	.66	.61	.56	.64	.60	.56	.54
7.0	.65	.58	.53	.64	.58	.53	.63	.57	.52	.62	.56	.52	.60	.55	.52	.50
8.0	.61	.54	.49	.60	.53	.49	.59	.53	.48	.58	.52	.48	.57	.52	.48	.46
9.0	.57	.50	.45	.56	.50	.45	.55	.49	.45	.54	.49	.45	.53	.48	.45	.43
10.0	.53	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.50	.45	.42	.40



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

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	.229	.130	.041	.223	.127	.040	.210	.120	.038	.198	.114	.037	.187	.108	.035	
2.0	.218	.120	.037	.213	.117	.036	.201	.112	.035	.191	.107	.034	.182	.103	.032	
3.0	.205	.109	.033	.200	.107	.032	.191	.103	.031	.182	.100	.031	.174	.096	.030	
4.0	.193	.100	.029	.188	.099	.029	.180	.095	.029	.172	.092	.028	.165	.090	.027	
5.0	.181	.092	.027	.177	.091	.026	.170	.088	.026	.163	.086	.026	.157	.084	.025	
6.0	.170	.085	.024	.167	.084	.024	.160	.082	.024	.154	.080	.024	.149	.078	.023	
7.0	.161	.079	.023	.158	.079	.022	.152	.077	.022	.146	.075	.022	.141	.073	.022	
8.0	.152	.074	.021	.149	.073	.021	.144	.072	.021	.139	.070	.020	.135	.069	.020	
9.0	.144	.070	.019	.141	.069	.019	.137	.068	.019	.132	.066	.019	.128	.065	.019	
10.0	.137	.066	.018	.134	.065	.018	.130	.064	.018	.126	.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	.162	.132	.107	.139	.114	.092	.095	.079	.064	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.083	.130	.098	.072	.089	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.084	.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	.040	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.121	.072	.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	.094	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.104	.057	.025	.090	.049	.022	.062	.035	.016	.036	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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	17.8	16.8	17.9	18.1
3H	28.6	29.7	28.9	29.9	30.2	19.8	20.9	20.0	21.1	21.3
4H	28.7	29.8	29.0	30.0	30.2	21.4	22.4	21.6	22.6	22.8
6H	28.7	29.7	29.0	29.9	30.2	22.6	23.5	22.9	23.8	24.1
8H	28.7	29.6	29.0	29.9	30.1	23.0	24.0	23.4	24.2	24.5
12H	28.6	29.5	29.0	29.8	30.1	23.4	24.3	23.7	24.6	24.8
4H 2H	27.8	28.9	28.1	29.1	29.3	16.9	17.9	17.2	18.1	18.4
3H	28.4	29.3	28.7	29.6	29.8	20.2	21.1	20.6	21.4	21.7
4H	28.5	29.3	28.9	29.6	29.9	22.1	22.9	22.4	23.2	23.5
6H	28.5	29.2	28.9	29.6	29.9	23.6	24.3	24.0	24.6	25.0
8H	28.5	29.1	28.9	29.5	29.9	24.2	24.8	24.6	25.2	25.6
12H	28.4	29.0	28.8	29.4	29.8	24.6	25.2	25.0	25.6	26.0
8H 4H	28.4	29.1	28.8	29.4	29.8	22.1	22.8	22.5	23.2	23.5
6H	28.4	29.0	28.8	29.4	29.8	23.9	24.4	24.3	24.8	25.2
8H	28.4	28.9	28.8	29.3	29.7	24.6	25.1	25.0	25.5	25.9
12H	28.3	28.8	28.8	29.2	29.7	25.2	25.6	25.7	26.1	26.5
12H 4H	28.3	29.0	28.8	29.3	29.7	22.1	22.7	22.5	23.1	23.5
6H	28.4	28.9	28.8	29.3	29.7	23.8	24.3	24.3	24.8	25.2
8H	28.4	28.8	28.8	29.2	29.7	24.6	25.0	25.1	25.5	25.9
Variations with the observer position at spacings:										
S = 1.0H	+ 1.8 / - 1.8					+ 0.2 / - 0.2				
1.5H	+ 3.0 / - 4.5					+ 0.2 / - 0.2				
2.0H	+ 4.6 / - 7.3					+ 0.4 / - 0.5				

CIE Pub.117 Corrected 12216 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.7)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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	73	64	59	72	64	59	54
0.80	82	74	68	81	73	68	80	73	68	63
1.00	89	81	75	88	80	75	86	81	75	69
1.25	94	87	82	93	86	81	91	85	81	75
1.50	98	91	86	97	90	86	94	89	85	79
2.00	103	97	92	101	96	91	98	94	90	84
2.50	105	100	96	104	99	95	100	96	93	86
3.00	108	103	99	106	101	98	102	99	96	88
4.00	111	106	103	108	105	102	104	102	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		

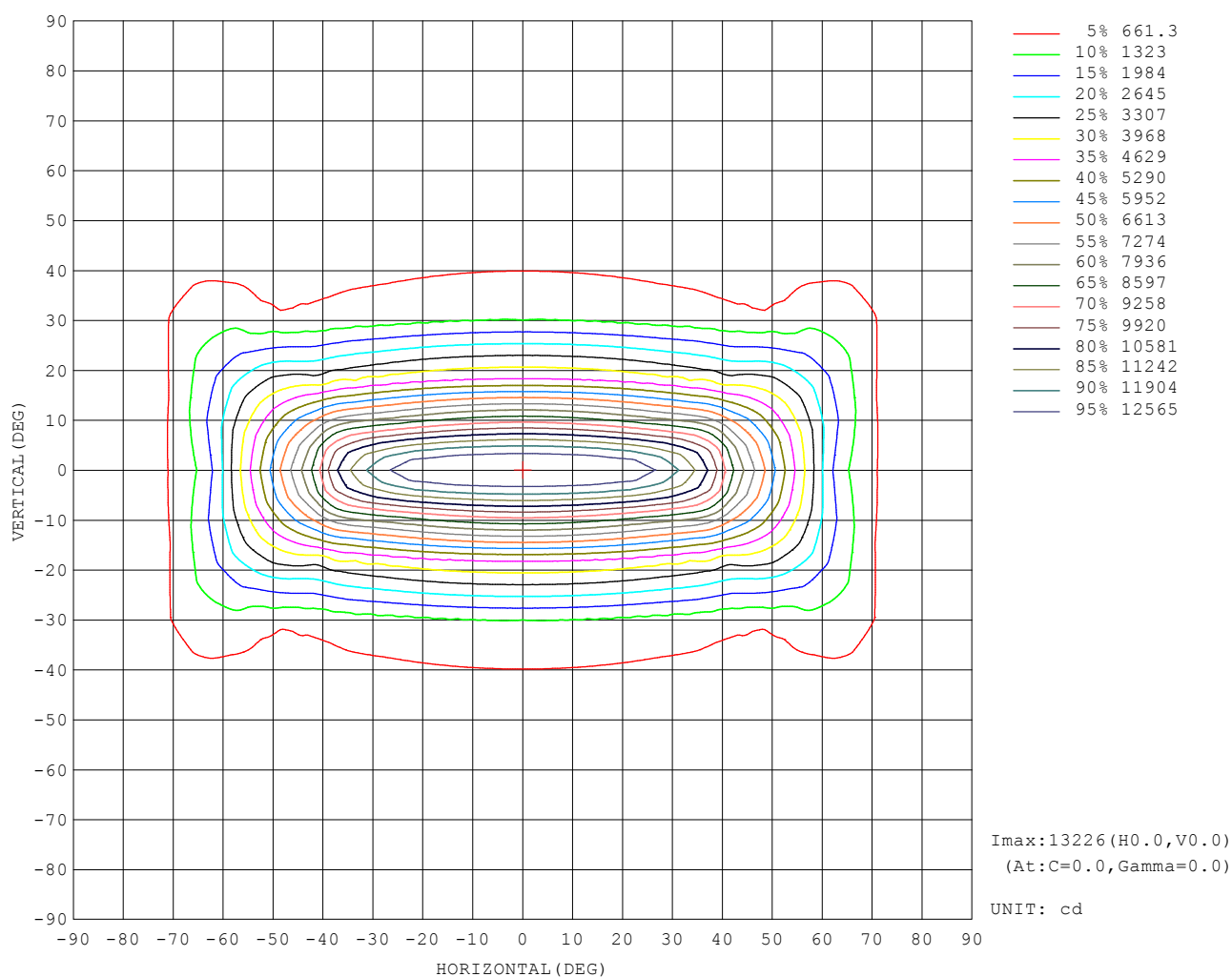
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

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



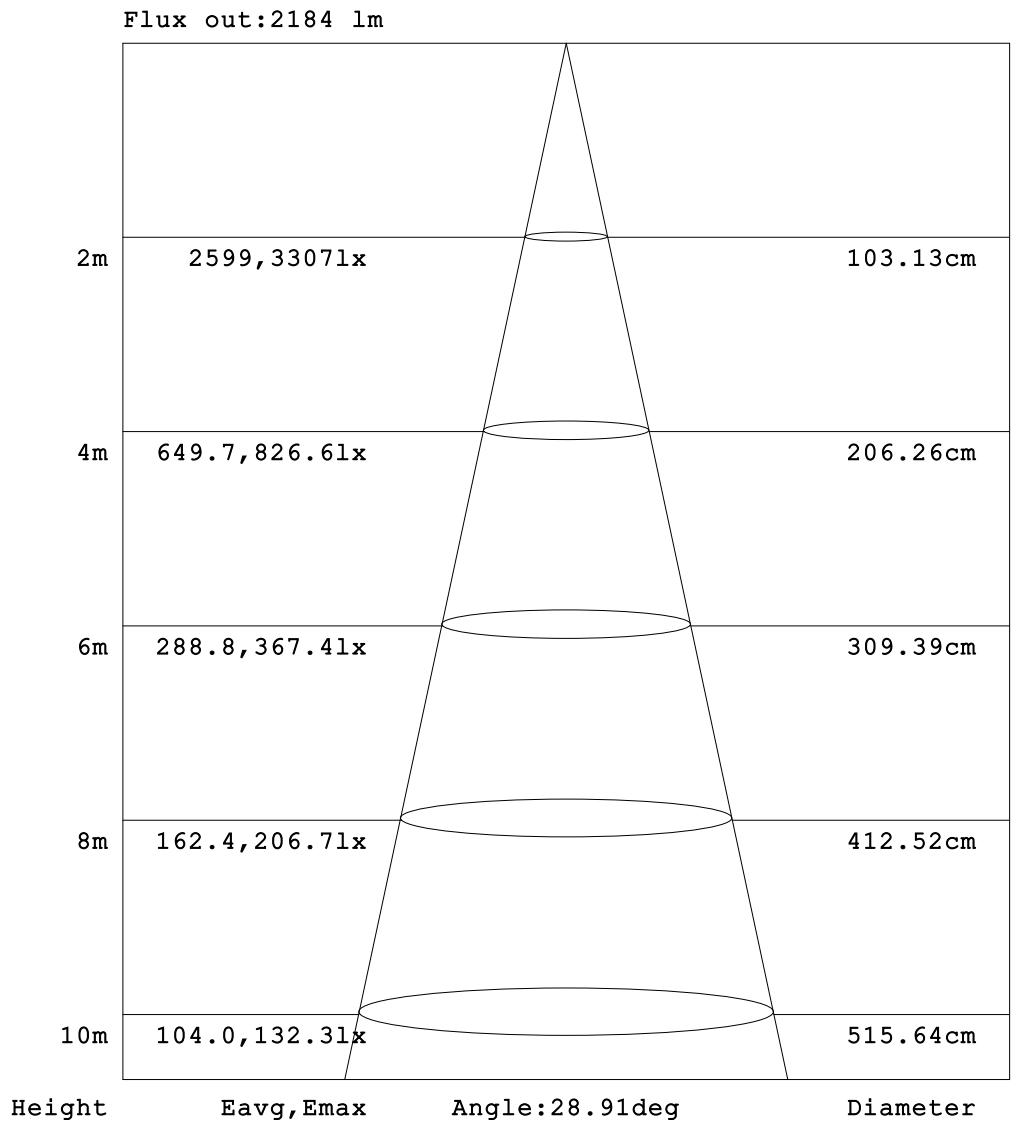
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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.

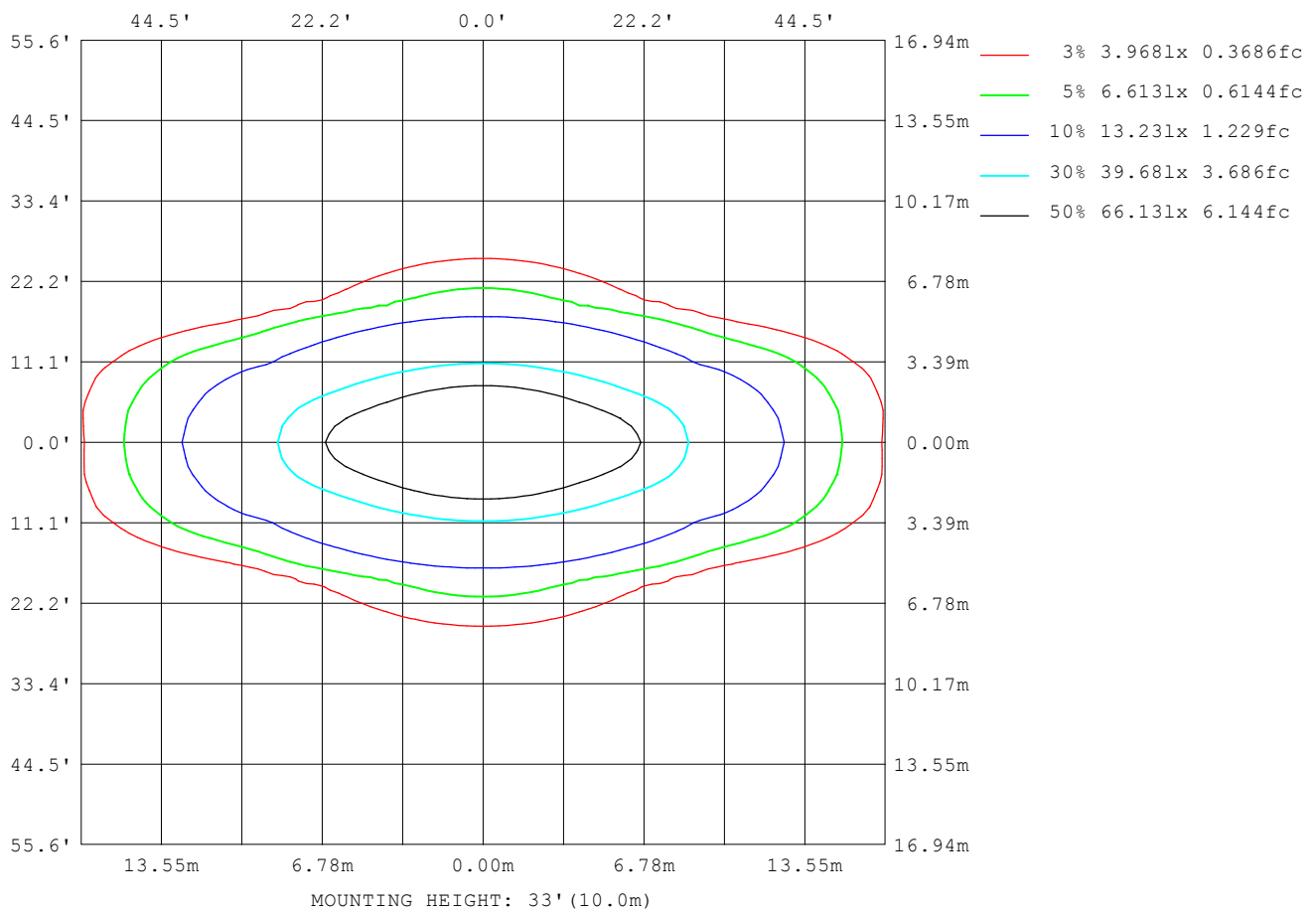
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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



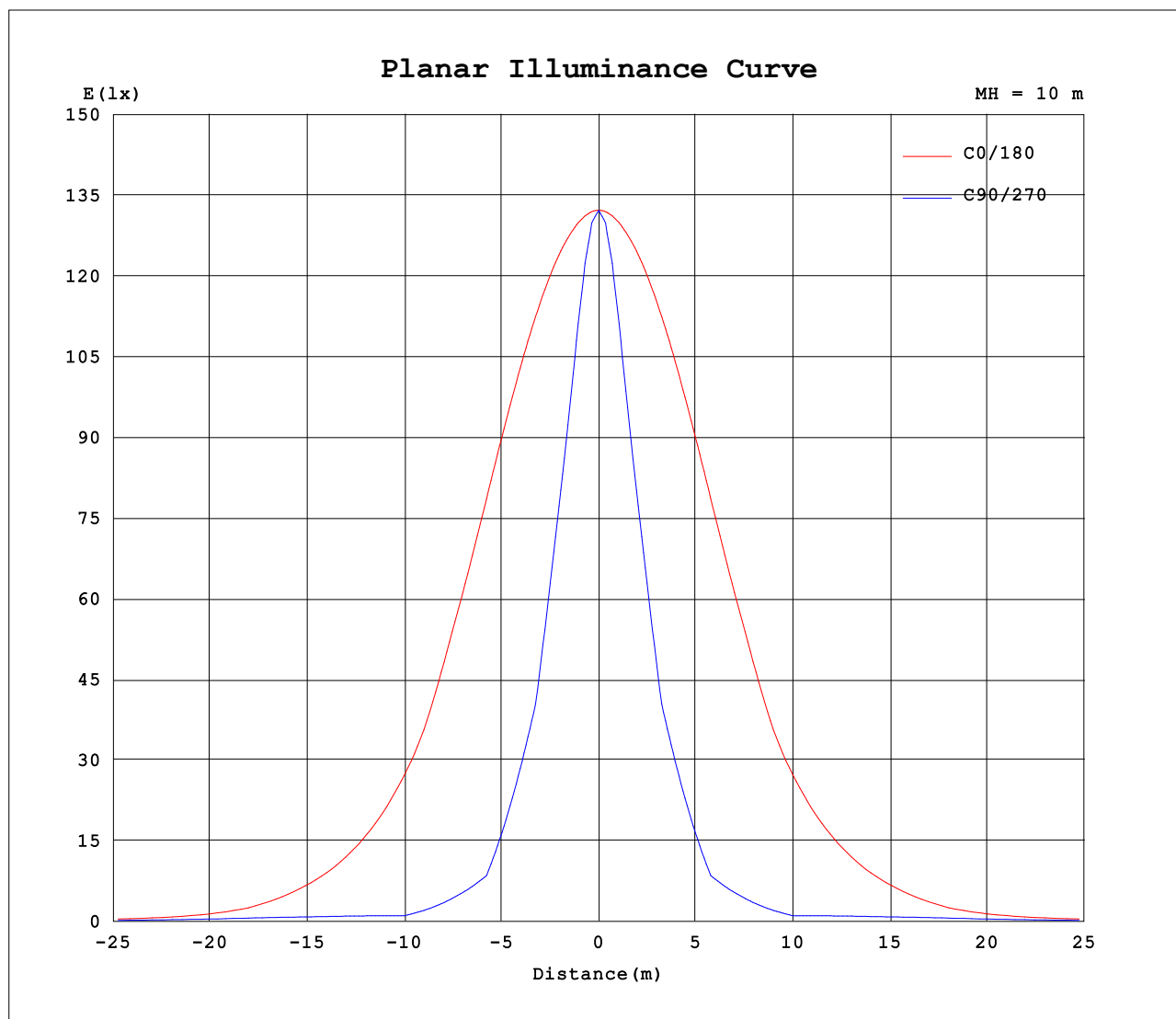
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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: 2017-01-09

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: