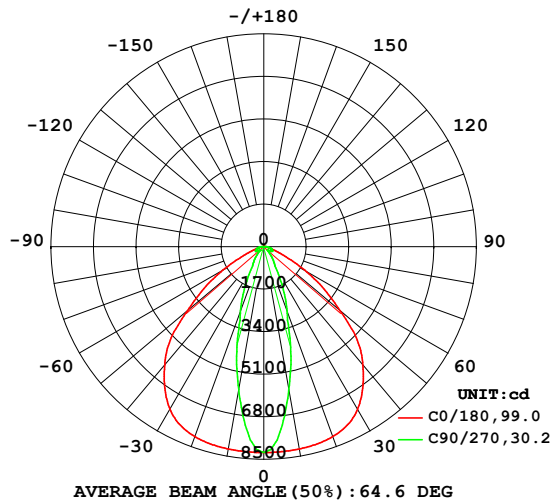


LUMINAIRE PHOTOMETRIC TEST REPORT

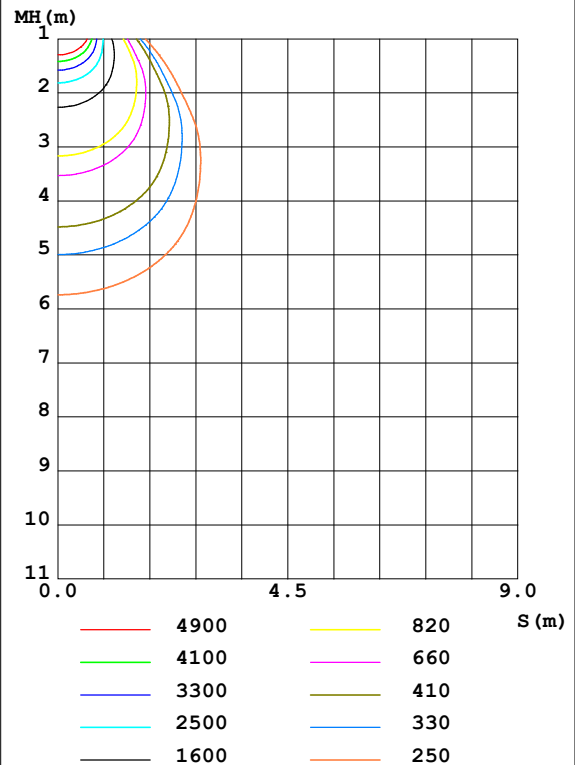
Test:U:220.0V I:0.2824A P:61.45W PF:0.9895 Lamp Flux:7904.1x1 lm					
NAME: LHB03-060			TYPE:60W		WEIGHT:
SPEC.:5000K Ra70 30100DEG L00301			DIM.: 0.34*0.3*0.065		SERIAL No.:
MFR.: EVERFINE			SUR.:0.28*0.27		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.62 lm/W			
MODEL	LHB03-060	I _{max} (cd)	8229	S/MH (C0/180)	1.33
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH (C90/270)	0.50
RATED VOLTAGE(V)	220	TOTAL FLUX (lm)	7904.1	η UP,DN (C0-180)	0.0,50.1
NOMINAL FLUX(lm)	7904.1	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)	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	8223	7824	7453	7824	8223	7817	7453	7817	0- 5	191.7	191.7	2.43,2.43
10	8209	6748	5798	6748	8209	6735	5798	6735	5- 10	523.8	715.5	9.05,9.05
15	8167	5473	4158	5473	8167	5459	4158	5459	10- 15	747.7	1463	18.5,18.5
20	8072	4225	2731	4225	8072	4218	2731	4218	15- 20	857.1	2320	29.4,29.4
25	7883	2929	1818	2929	7883	2919	1818	2919	20- 25	886.6	3207	40.6,40.6
30	7501	2176	905.2	2176	7501	2160	905.2	2160	25- 30	854.5	4062	51.4,51.4
35	6900	1407	670.6	1407	6900	1389	670.6	1389	30- 35	774.9	4836	61.2,61.2
40	6163	717.5	435.9	717.5	6163	699.2	435.9	699.2	35- 40	690.5	5527	69.9,69.9
45	5295	525.6	201.3	525.6	5295	511.3	201.3	511.3	40- 45	590.9	6118	77.4,77.4
50	3982	332.2	262.4	332.2	3982	326.2	262.4	326.2	45- 50	475.1	6593	83.4,83.4
55	2920	148.0	323.6	148.0	2920	148.5	323.6	148.5	50- 55	367.6	6960	88.1,88.1
60	1890	139.4	384.7	139.4	1890	140.1	384.7	140.1	55- 60	292.7	7253	91.8,91.8
65	994.4	125.8	347.6	125.8	994.4	126.7	347.6	126.7	60- 65	232.9	7486	94.7,94.7
70	510.4	106.6	310.5	106.6	510.4	108.0	310.5	108.0	65- 70	168.5	7654	96.8,96.8
75	225.3	84.99	273.4	84.99	225.3	86.98	273.4	86.98	70- 75	115.9	7770	98.3,98.3
80	75.90	62.92	186.9	62.92	75.90	65.23	186.9	65.23	75- 80	75.96	7846	99.3,99.3
85	13.16	34.18	100.5	34.18	13.16	36.13	100.5	36.13	80- 85	41.74	7888	99.8,99.8
90	2.344	7.410	14.04	7.410	2.344	9.337	14.04	9.337	85- 90	16.02	7904	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:cd									UNIT:lm		

Conical surface Flux(90deg): 6117.8 lm

%lum = 77.4%

%lamp = 77.4%

Conical surface Flux(120deg): 7253.1 lm

%lum = 91.8%

%lamp = 91.8%

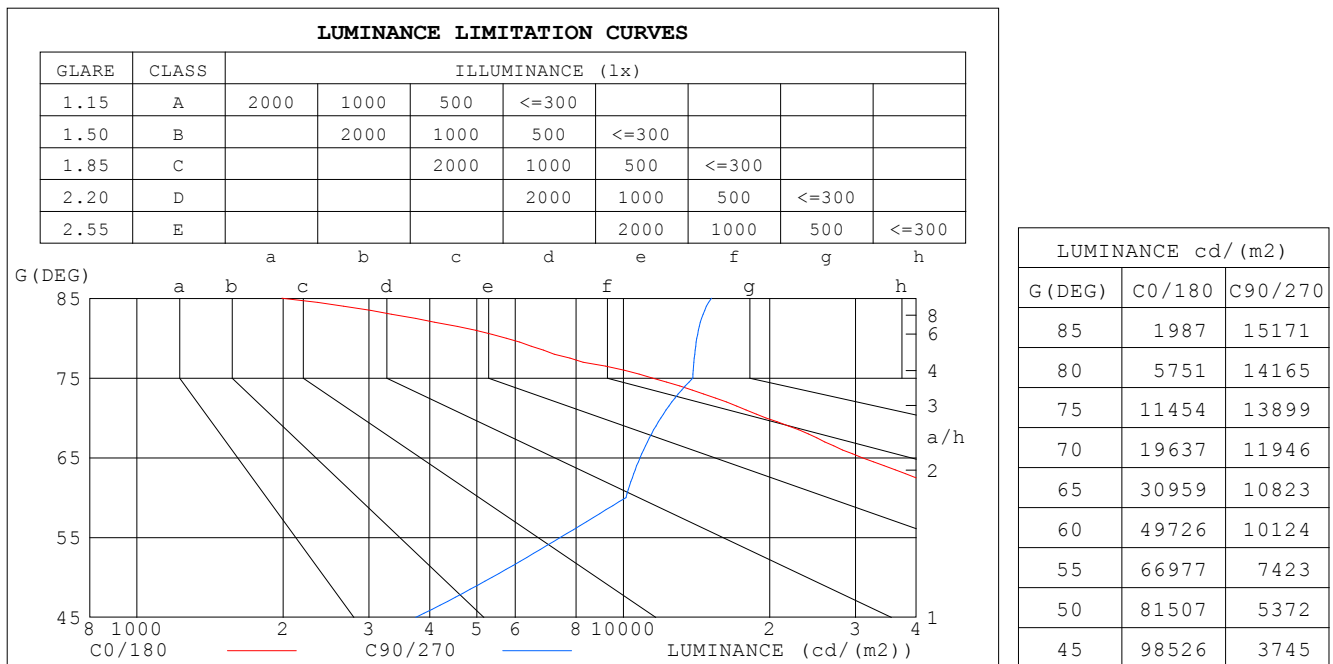
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-01-09

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

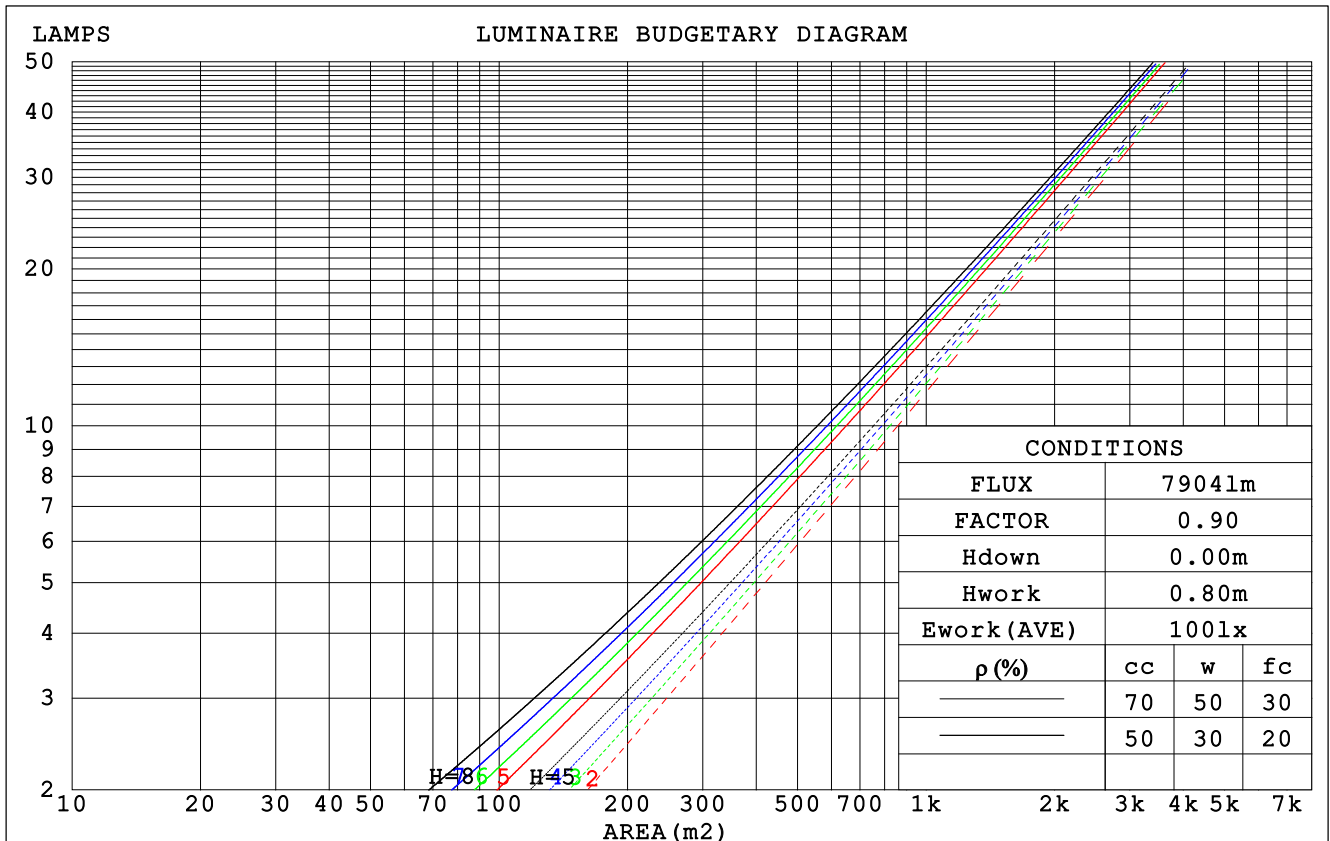
Checker:

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	.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	.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	.57	.52	.64	.57	.52	.63	.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	.45	.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: 2017-01-09

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	.230	.131	.041	.223	.127	.040	.210	.121	.039	.198	.114	.037	.187	.109	.035		
2.0	.219	.120	.037	.213	.118	.036	.202	.113	.035	.192	.108	.034	.183	.103	.033		
3.0	.206	.110	.033	.201	.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	.087	.026	.158	.084	.025		
6.0	.171	.086	.025	.168	.085	.024	.161	.083	.024	.155	.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	.069	.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	.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	.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:2017-01-09

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	26.8	27.9	27.0	28.1	28.3	15.0	16.2	15.3	16.4	16.6
3H	27.4	28.5	27.7	28.7	28.9	18.1	19.2	18.4	19.4	19.6
4H	27.5	28.5	27.7	28.7	29.0	19.7	20.7	20.0	20.9	21.2
6H	27.4	28.4	27.7	28.6	28.9	20.9	21.9	21.2	22.1	22.4
8H	27.4	28.3	27.7	28.6	28.8	21.3	22.3	21.7	22.5	22.8
12H	27.3	28.2	27.6	28.5	28.8	21.7	22.6	22.0	22.9	23.2
4H 2H	26.5	27.5	26.8	27.8	28.0	15.4	16.4	15.6	16.6	16.9
3H	27.1	28.0	27.5	28.3	28.6	18.6	19.5	18.9	19.8	20.1
4H	27.2	28.0	27.6	28.3	28.7	20.4	21.2	20.7	21.5	21.8
6H	27.2	27.9	27.6	28.3	28.6	21.9	22.6	22.3	22.9	23.3
8H	27.2	27.8	27.6	28.2	28.6	22.4	23.1	22.8	23.5	23.8
12H	27.1	27.7	27.5	28.1	28.5	22.9	23.5	23.3	23.9	24.3
8H 4H	27.1	27.8	27.5	28.1	28.5	20.4	21.1	20.8	21.5	21.8
6H	27.1	27.6	27.5	28.0	28.5	22.1	22.7	22.5	23.1	23.5
8H	27.1	27.5	27.5	28.0	28.4	22.8	23.3	23.3	23.7	24.2
12H	27.0	27.4	27.5	27.9	28.4	23.5	23.9	23.9	24.3	24.8
12H 4H	27.1	27.7	27.5	28.0	28.4	20.4	21.0	20.8	21.4	21.8
6H	27.1	27.5	27.5	28.0	28.4	22.1	22.6	22.6	23.0	23.5
8H	27.0	27.4	27.5	27.9	28.4	22.9	23.3	23.3	23.7	24.2
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 1.7					+ 0.2 / - 0.2				
1.5H	+ 3.3 / - 4.5					+ 0.3 / - 0.3				
2.0H	+ 4.8 / - 7.6					+ 0.4 / - 0.5				

CIE Pub.117 Corrected 7904 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.2)

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	58	72	64	58	71	63	58	53
0.80	82	73	68	81	73	68	79	72	67	62
1.00	89	80	75	87	80	75	86	80	74	69
1.25	94	87	81	93	86	81	91	85	80	75
1.50	98	91	86	97	90	85	94	88	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	96	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		

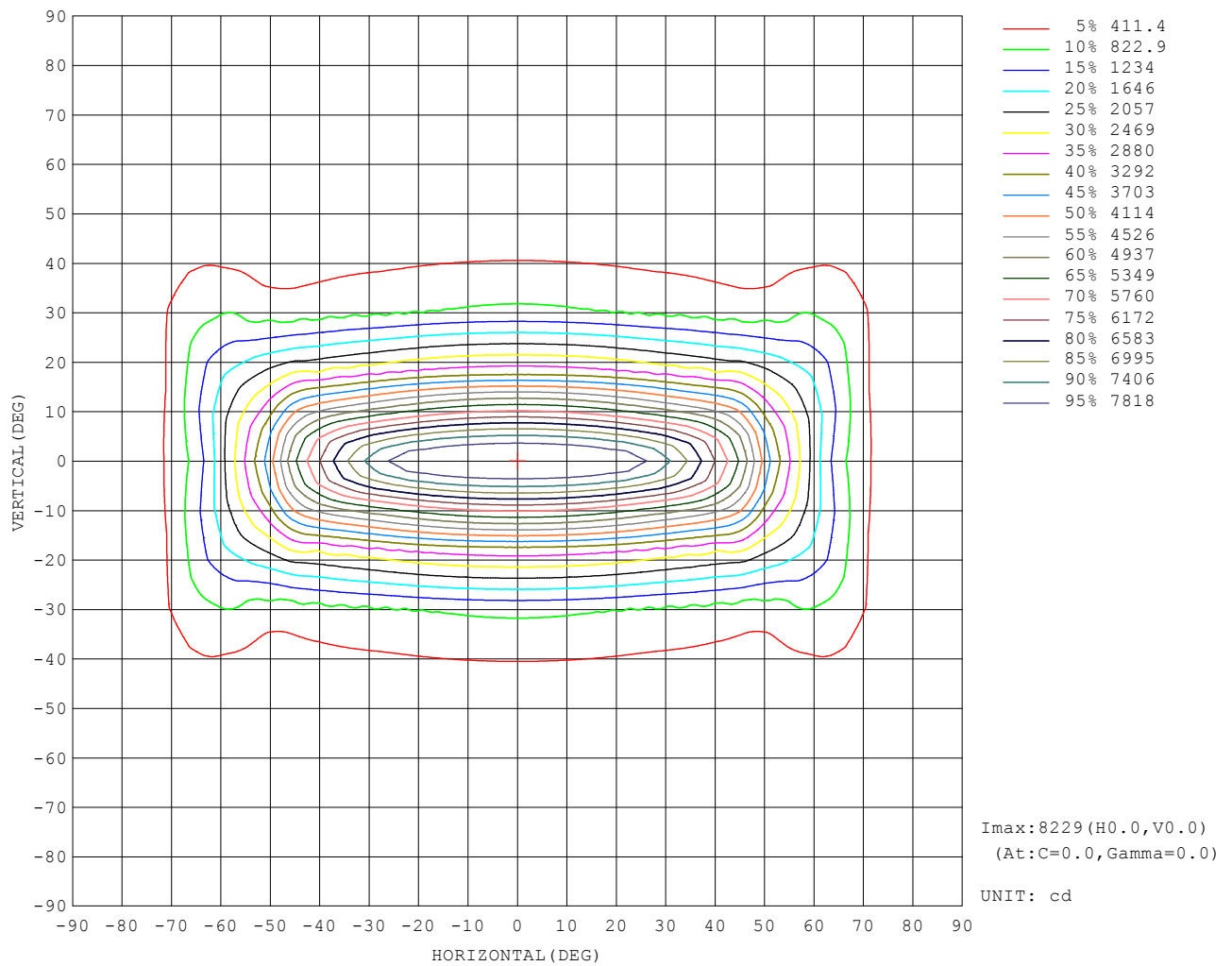
C Range: 0 - 360DEG
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 Test Speed: HIGH
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 Operators:
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Checker:

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



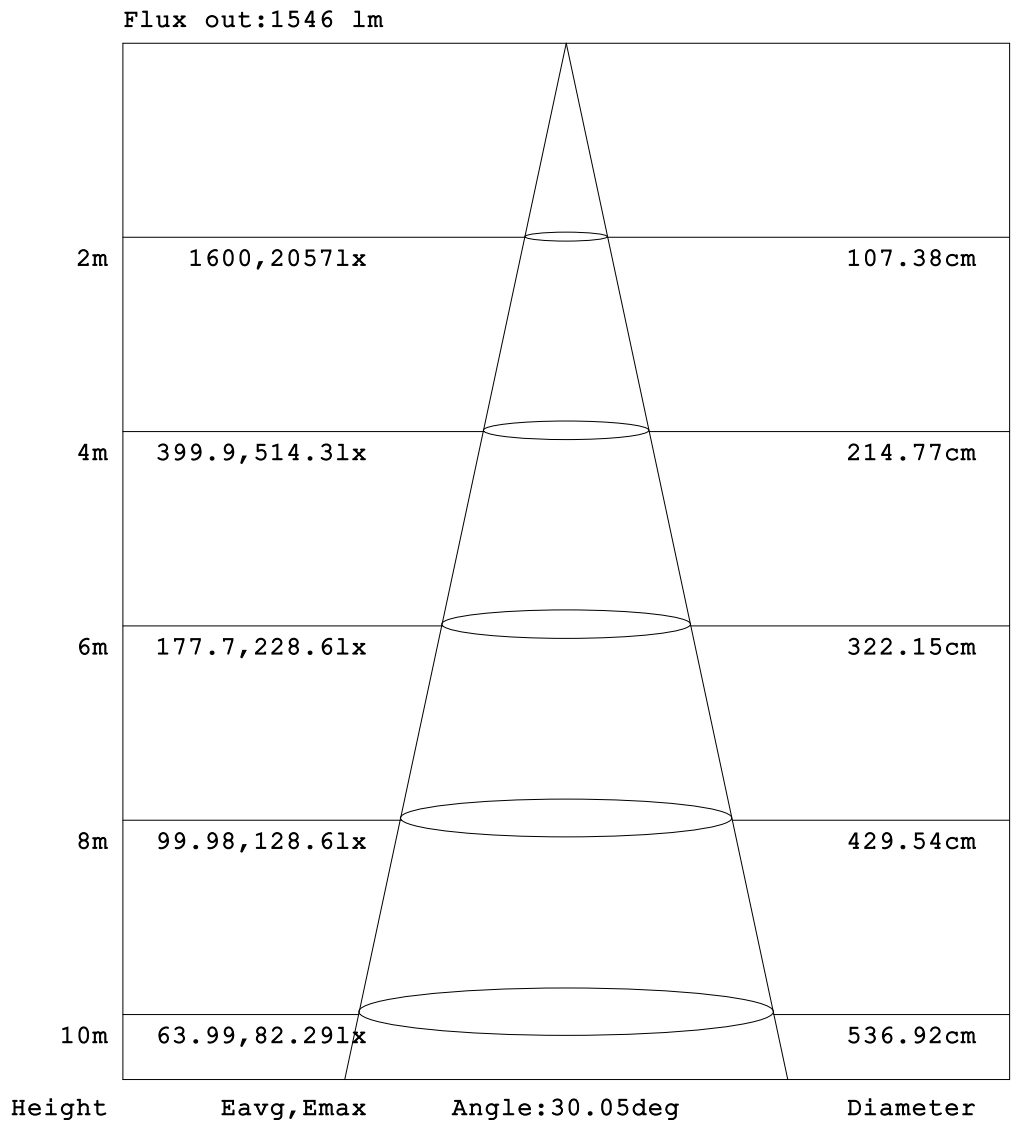
C Range: 0 - 360DEG
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Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

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.

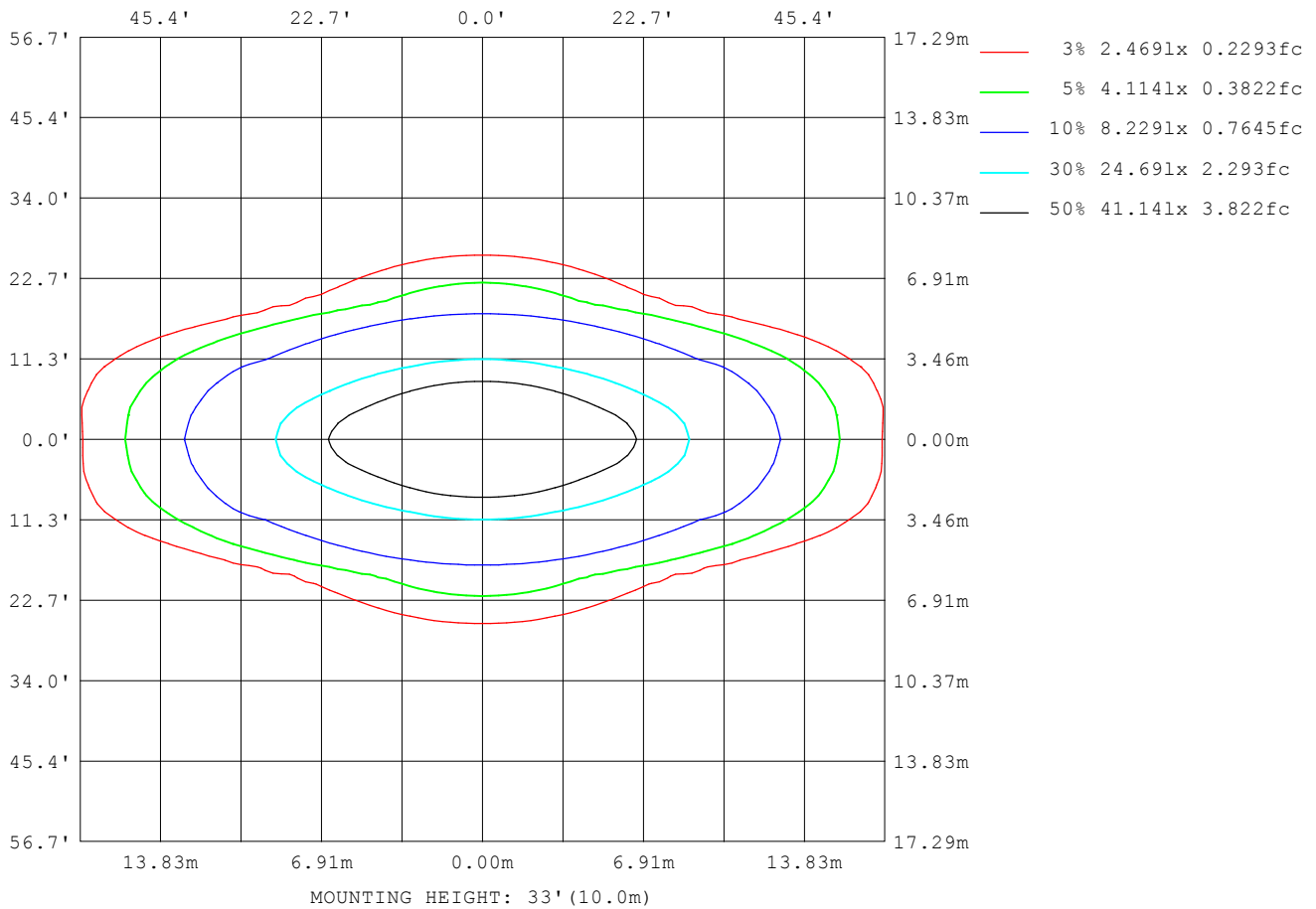
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

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



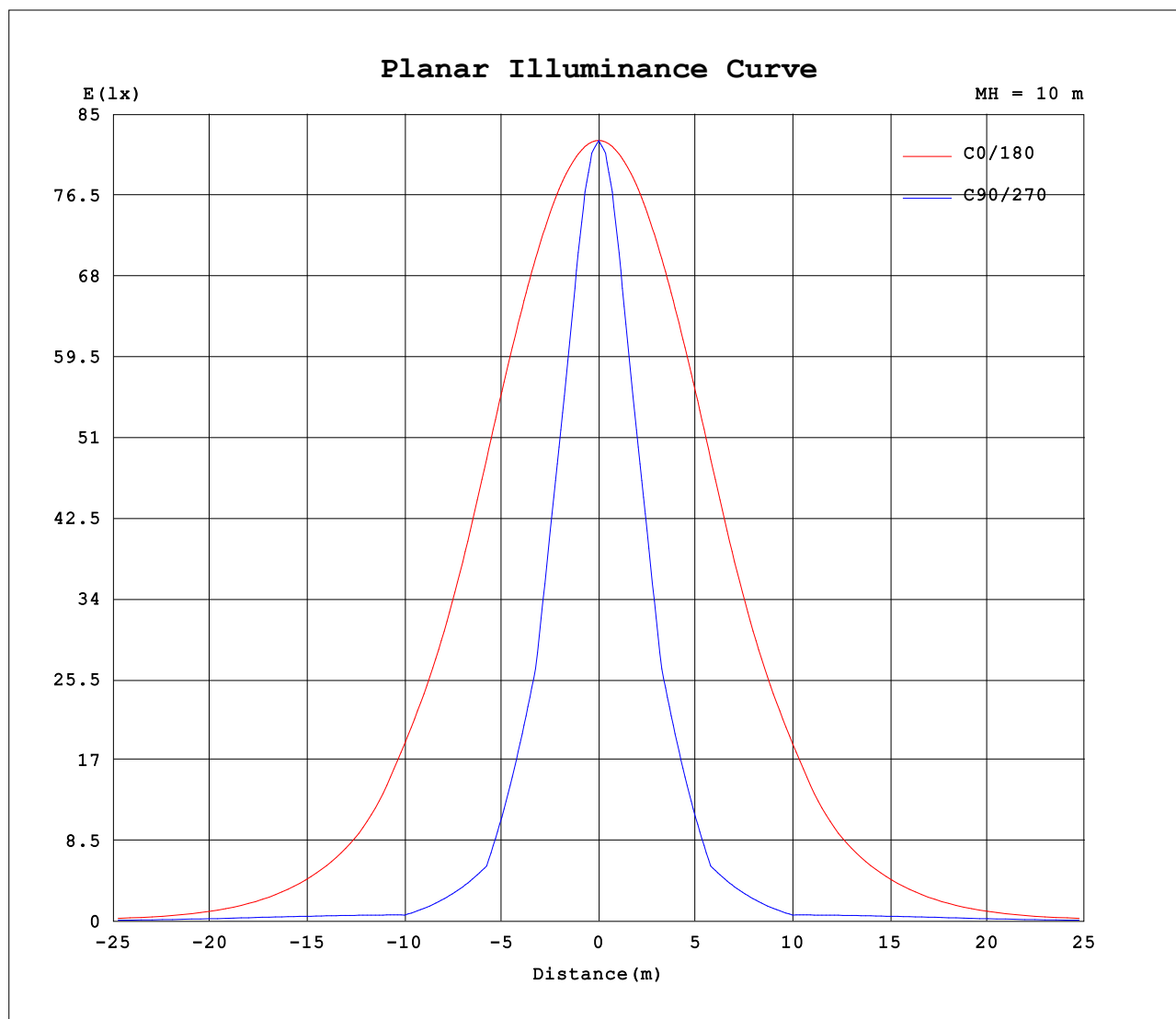
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

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:

Assessor: