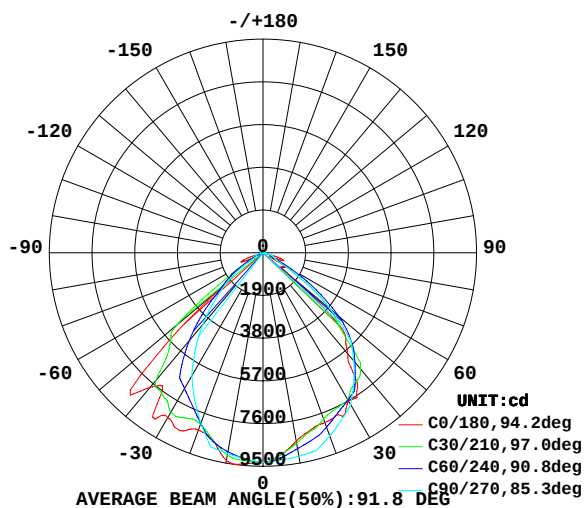


LUMINAIRE PHOTOMETRIC TEST REPORT

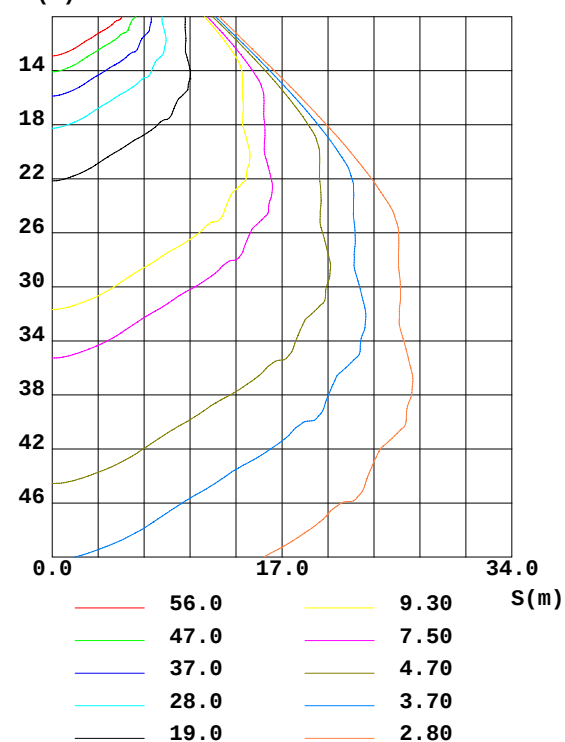
Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 87.16 lm/W			
MODEL	FL200W	I _{max} (cd)	9489	S/MH(C0/180)	1.25
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	17928	η UP, DN(C0-180)	0.0, 54.4
NOMINAL FLUX(lm)	17928.1	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 45.6
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	227.7	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:28DEG
Operators:wy
Test Date:2013-09-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.274
Humidity:65.0%
Test Distance:11.900m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	ϕ zone	ϕ total	%lum, lamp
5	9024	9075	9258	9279	9421	9232	9201	9057	0- 5	221.1	221.1	1.23,1.23
10	8514	8717	9184	9167	9382	9048	9071	8690	5- 10	648.7	869.8	4.85,4.85
15	8169	8369	9110	8813	8616	8645	8940	8328	10- 15	1039	1909	10.6,10.6
20	8040	8140	8672	8455	8386	8282	8069	8094	15- 20	1380	3289	18.3,18.3
25	7947	7669	8234	8104	8728	7713	7198	7405	20- 25	1678	4966	27.7,27.7
30	7605	7378	7796	8045	8471	7542	6327	6892	25- 30	1950	6916	38.6,38.6
35	7345	7088	7040	8384	8220	7527	5243	6376	30- 35	2155	9071	50.6,50.6
40	5875	6530	6283	8154	7807	7072	4159	5816	35- 40	2206	11277	62.9,62.9
45	5187	5849	5527	7505	7683	5799	3075	4796	40- 45	2140	13416	74.8,74.8
50	1632	4728	3926	6306	2524	3939	2154	3371	45- 50	1813	15229	84.9,84.9
55	1128	2920	2325	4421	1760	2053	1234	1732	50- 55	1167	16396	91.5,91.5
60	324.2	1659	724.3	2616	439.0	1305	313.1	1043	55- 60	704.9	17101	95.4,95.4
65	594.8	799.7	593.6	1167	827.4	626.8	324.2	501.1	60- 65	341.6	17443	97.3,97.3
70	965.5	397.4	462.9	625.5	855.9	358.9	335.3	331.5	65- 70	218.9	17662	98.5,98.5
75	258.2	285.9	332.3	410.7	197.9	239.7	346.4	257.5	70- 75	152.0	17814	99.4,99.4
80	101.8	125.7	0	127.7	138.6	93.18	0	84.96	75- 80	85.12	17899	99.8,99.8
85	87.81	0	0	0	114.2	0	0	0	80- 85	23.76	17923	100,100
90	74.05	0	0	0	59.86	0	0	0	85- 90	5.543	17928	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		

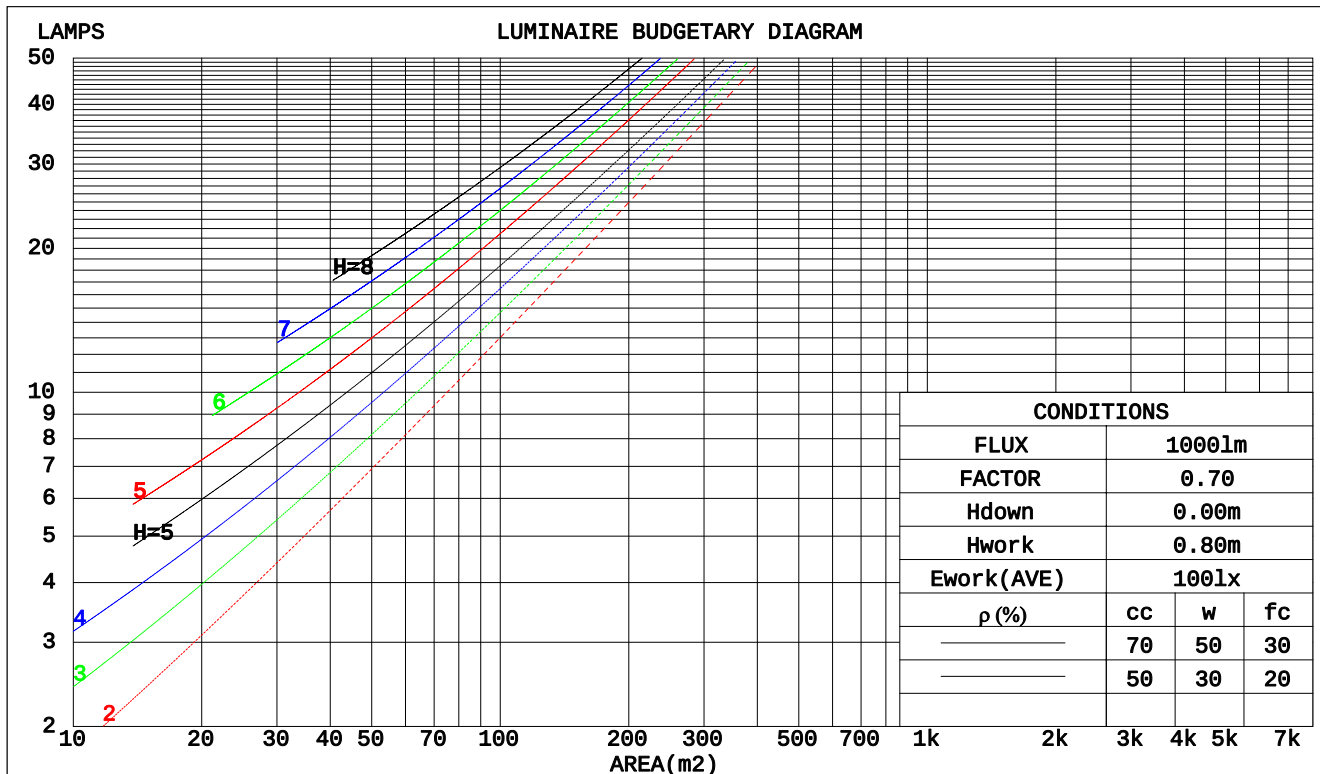
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:28DEG
 Operators:wy
 Test Date:2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity:65.0%
 Test Distance:11.900m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.97	.92	.88	.96	.91	.87	.92	.88	.85	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.84	.78	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.79	.72	.67	.78	.71	.66	.76	.70	.65	.74	.69	.64	.72	.67	.64	.62
5.0	.72	.64	.59	.71	.64	.59	.69	.63	.58	.67	.62	.57	.66	.61	.57	.55
6.0	.66	.58	.52	.65	.58	.52	.63	.57	.52	.62	.56	.51	.60	.55	.51	.49
7.0	.60	.52	.47	.59	.52	.47	.58	.51	.47	.57	.51	.46	.55	.50	.46	.44
8.0	.55	.48	.42	.55	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.40
9.0	.51	.44	.39	.50	.43	.38	.49	.43	.38	.48	.42	.38	.47	.42	.38	.36
10.0	.47	.40	.35	.47	.40	.35	.46	.39	.35	.45	.39	.35	.44	.39	.35	.33



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 28DEG
 Operators: wy
 Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity: 65.0%
 Test Distance: 11.900m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm									
NAME: EFL200W					TYPE:			WEIGHT:	
DIM.:					SPEC.:			SERIAL No.:	
MFR.: QUN					SUR.:			PROTECTION ANGLE:	

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						Wall Exitance Coefficients(WEC)																		
0.0																									
1.0	.231	.131	.042	.224	.128	.041	.211	.121	.039	.199	.115	.037	.188	.109	.035										
2.0	.226	.124	.038	.220	.121	.037	.209	.116	.036	.198	.111	.035	.189	.107	.034										
3.0	.216	.115	.034	.211	.113	.034	.201	.109	.033	.192	.105	.032	.184	.102	.031										
4.0	.205	.107	.031	.201	.105	.031	.192	.102	.030	.184	.099	.030	.177	.096	.029										
5.0	.194	.099	.029	.190	.098	.028	.183	.095	.028	.176	.093	.028	.169	.090	.027										
6.0	.184	.092	.026	.180	.091	.026	.174	.089	.026	.167	.087	.026	.161	.085	.025										
7.0	.174	.086	.024	.171	.085	.024	.165	.083	.024	.159	.082	.024	.154	.080	.023										
8.0	.165	.081	.023	.162	.080	.023	.157	.078	.022	.152	.077	.022	.147	.075	.022										
9.0	.156	.076	.021	.154	.075	.021	.149	.074	.021	.144	.072	.021	.140	.071	.021										
10.0	.149	.071	.020	.146	.071	.020	.142	.070	.020	.138	.068	.019	.134	.067	.019										

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						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	.106	.140	.114	.092	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.125	.086	.056	.086	.060	.040	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.053	.119	.077	.046	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.132	.080	.043	.114	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.044	.026	.013	.014	.009	.004	
8.0	.120	.068	.031	.104	.059	.027	.072	.041	.019	.042	.024	.012	.013	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.095	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 28DEG
 Operators: wy
 Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity: 65.0%
 Test Distance: 11.900m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm											
NAME: EFL200W					TYPE:			WEIGHT:			
DIM.:					SPEC.:			SERIAL No.:			
MFR.: QON					SUR.:			PROTECTION ANGLE:			
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	2H	22.0	23.3	22.3	23.5	23.7	23.3	24.6	23.6	24.8	25.0
	3H	22.1	23.3	22.4	23.5	23.7	23.3	24.5	23.6	24.7	24.9
	4H	22.1	23.2	22.4	23.4	23.6	23.3	24.4	23.6	24.7	24.9
	6H	22.0	23.0	22.3	23.3	23.6	23.3	24.3	23.6	24.6	24.8
	8H	22.0	23.0	22.3	23.2	23.5	23.2	24.2	23.6	24.5	24.8
	12H	22.0	22.9	22.3	23.2	23.5	23.2	24.1	23.5	24.4	24.7
4H	2H	22.2	23.3	22.5	23.6	23.8	23.3	24.4	23.6	24.6	24.9
	3H	22.3	23.3	22.7	23.6	23.9	23.4	24.3	23.7	24.6	24.9
	4H	22.3	23.2	22.7	23.5	23.8	23.4	24.3	23.8	24.6	24.9
	6H	22.3	23.1	22.7	23.4	23.8	23.4	24.1	23.7	24.5	24.8
	8H	22.3	23.0	22.7	23.4	23.7	23.3	24.0	23.7	24.4	24.7
	12H	22.3	22.9	22.7	23.3	23.7	23.3	23.9	23.7	24.3	24.7
8H	4H	22.3	23.0	22.7	23.4	23.7	23.4	24.1	23.8	24.4	24.8
	6H	22.3	22.9	22.7	23.3	23.7	23.3	23.9	23.8	24.3	24.7
	8H	22.3	22.8	22.8	23.2	23.7	23.3	23.8	23.7	24.2	24.6
	12H	22.4	22.8	22.8	23.2	23.7	23.2	23.7	23.7	24.1	24.6
12H	4H	22.3	22.9	22.7	23.3	23.7	23.3	24.0	23.7	24.3	24.7
	6H	22.3	22.8	22.7	23.2	23.6	23.3	23.8	23.7	24.2	24.6
	8H	22.3	22.7	22.8	23.2	23.6	23.2	23.7	23.7	24.1	24.6
Variations with the observer position at spacings:											
S = 1.0H		+ 1.9 / - 2.8					+ 1.1 / - 1.5				
1.5H		+ 1.3 / - 3.7					+ 0.6 / - 0.8				
2.0H		+ 4.1 / - 6.2					+ 2.8 / - 6.7				

CIE Pub.117 Corrected 17928 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.0)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:28DEG
 Operators:wy
 Test Date:2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity:65.0%
 Test Distance:11.900m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:

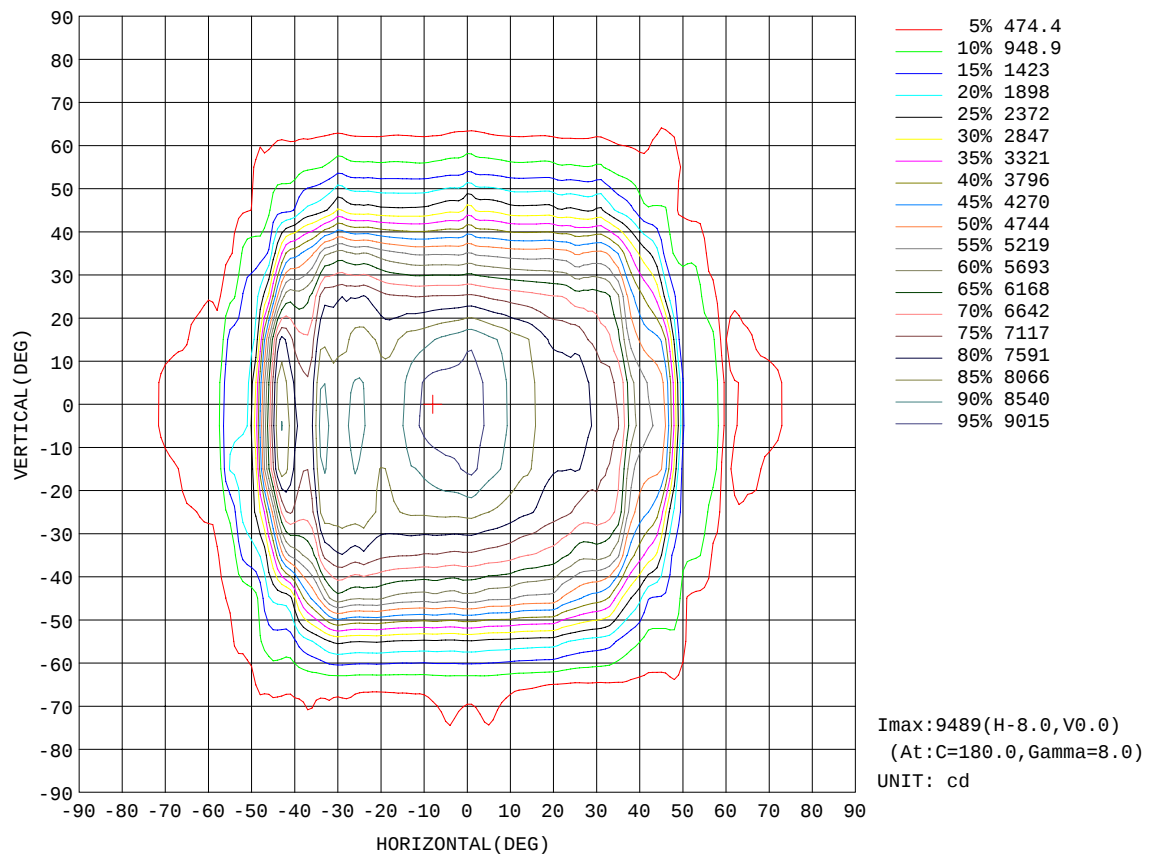
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	68	58	52	67	58	52	66	57	52	46
0.80	78	69	63	77	68	63	76	68	62	56
1.00	86	78	72	85	77	72	83	78	71	65
1.25	93	85	79	91	84	79	89	83	78	72
1.50	97	90	84	95	89	84	93	87	83	77
2.00	102	96	91	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	95	92	85
3.00	107	102	98	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	98	91
5.00	112	108	105	109	106	104	105	103	100	92
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: 28DEG
 Operators: wy
 Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity: 65.0%
 Test Distance: 11.900m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:



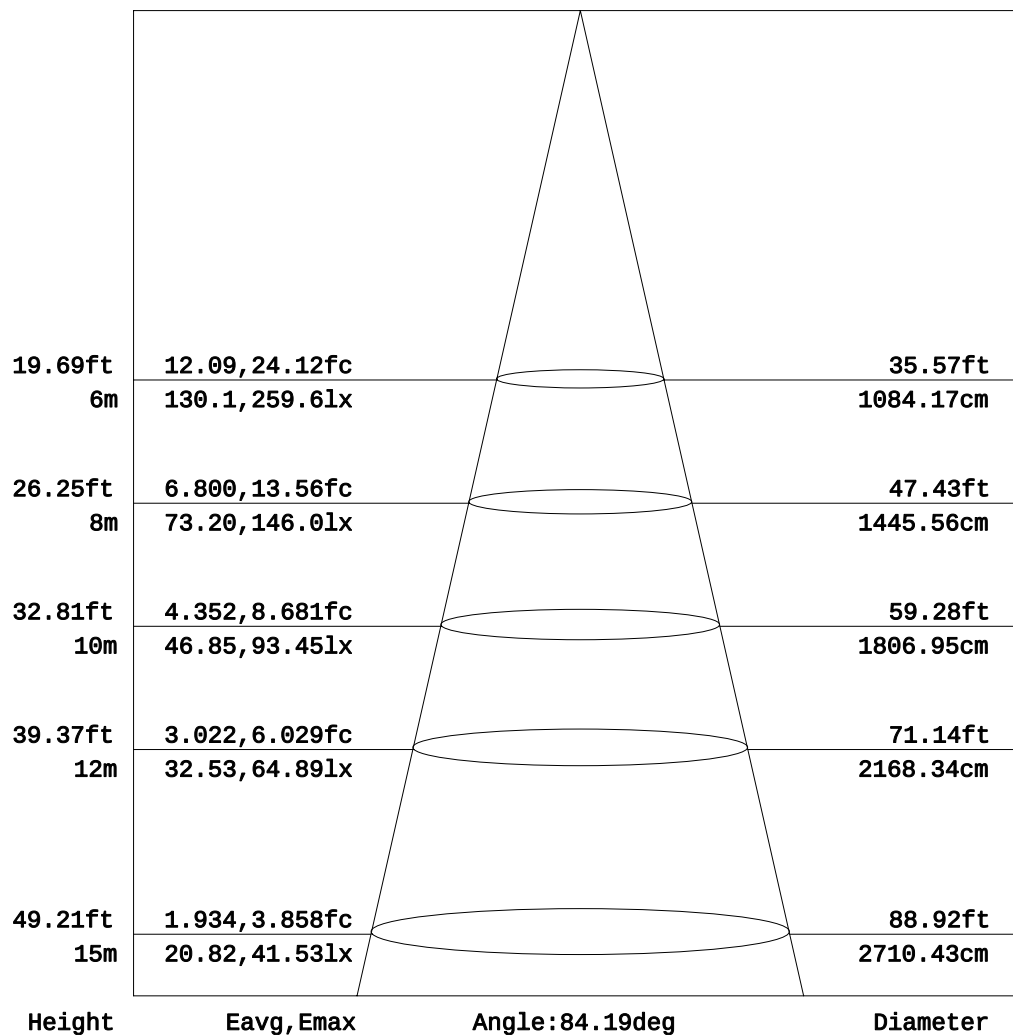
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28DEG
Operators: wy
Test Date: 2013-09-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
Humidity: 65.0%
Test Distance: 11.900m [K=1.0000]
Remarks:

AAI Figure

Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:

Flux out:12358 lm



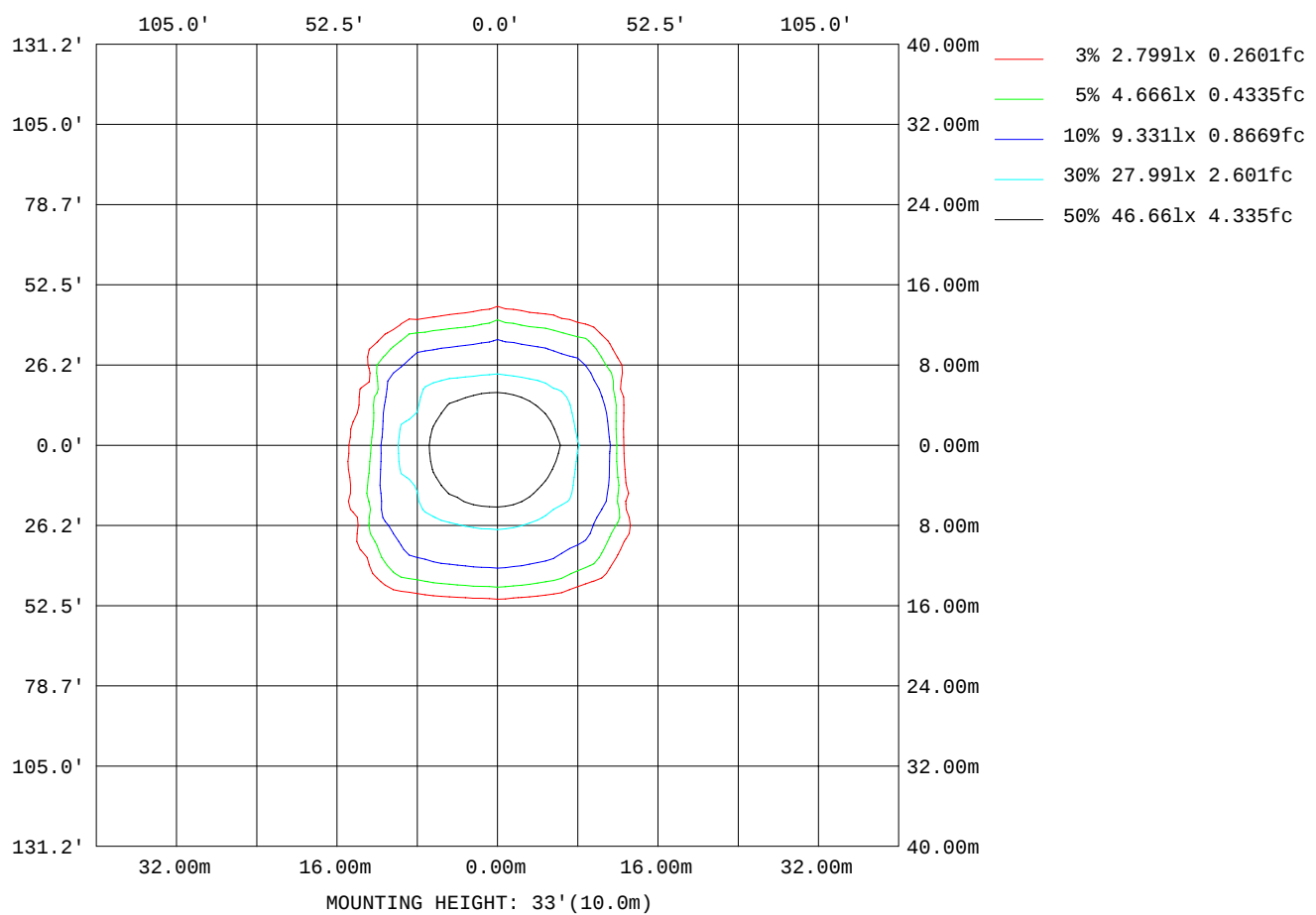
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 28DEG
 Operators: wy
 Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity: 65.0%
 Test Distance: 11.900m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

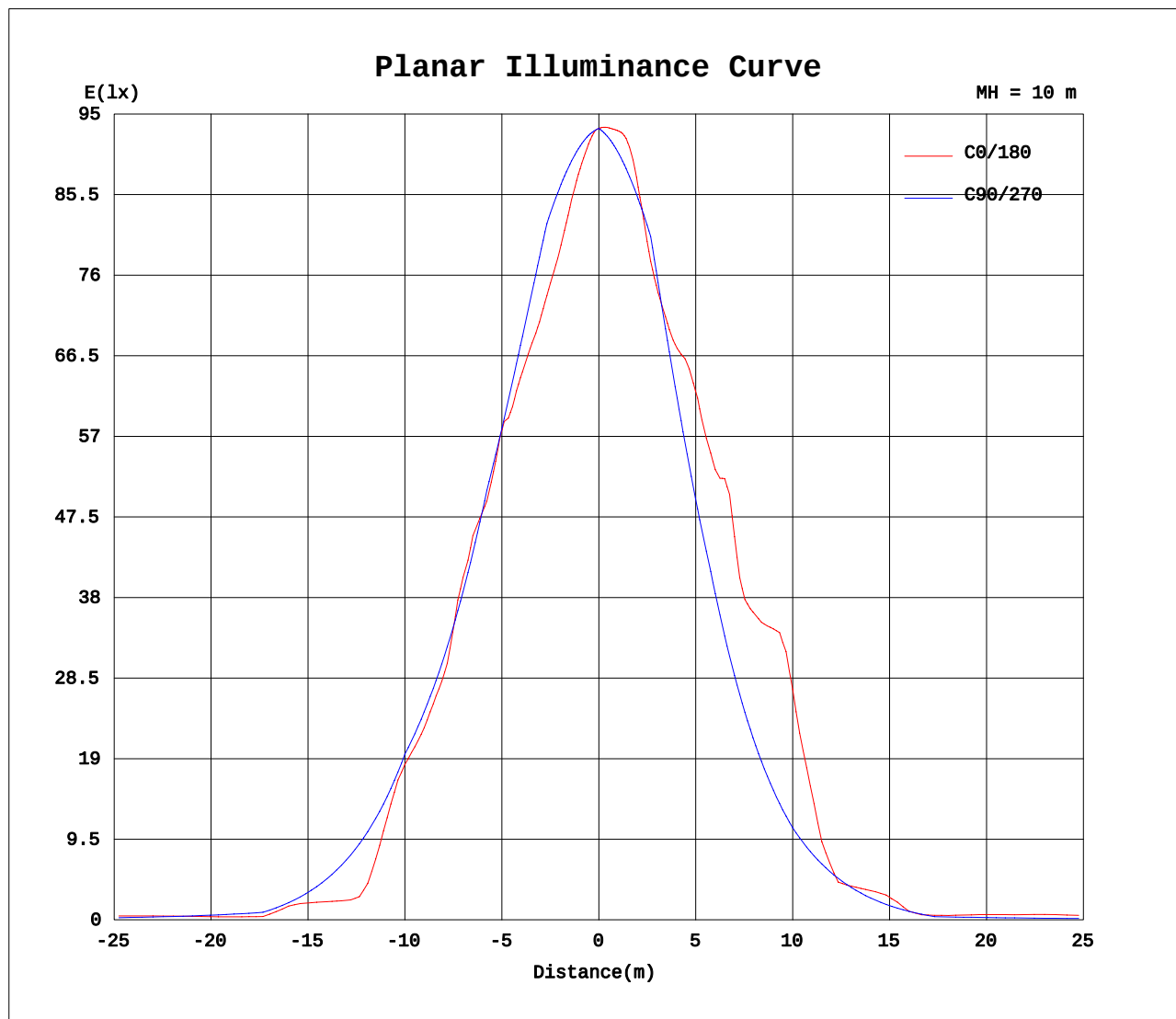
Test:U:228.8V I:0.9250A P:205.7W PF:0.9720 Lamp Flux:17928.1x1 lm		
NAME: EFL200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: QUN	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 28DEG
 Operators: wy
 Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
 Humidity: 65.0%
 Test Distance: 11.900m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28DEG
Operators: wy
Test Date: 2013-09-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.274
Humidity: 65.0%
Test Distance: 11.900m [K=1.0000]
Remarks:

