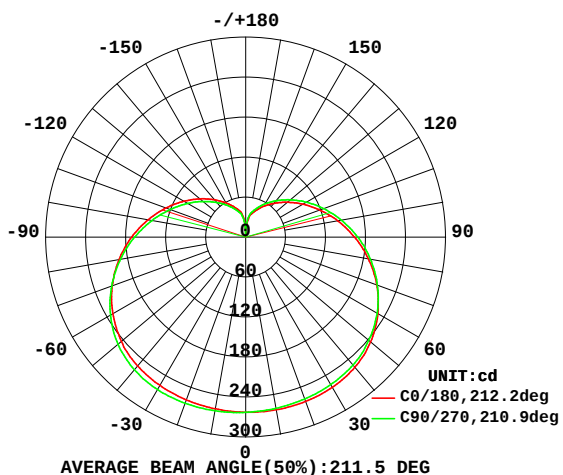


LUMINAIRE PHOTOMETRIC TEST REPORT

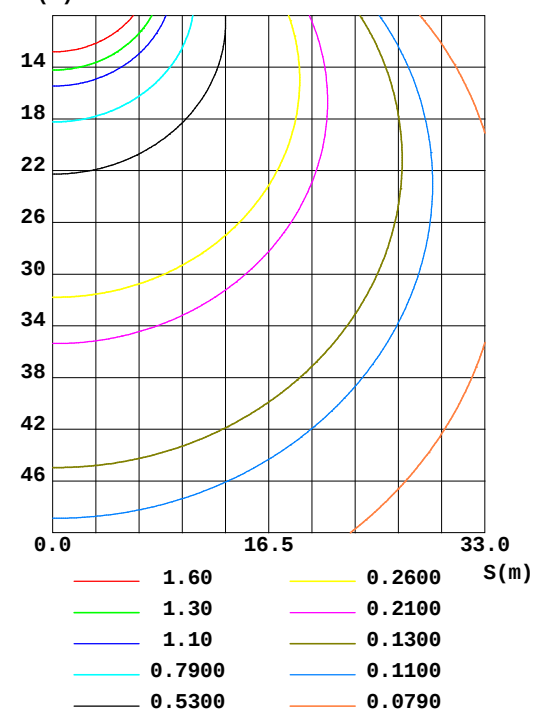
Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 120.91 lm/W			
MODEL		I _{max} (cd)	265.4	S/MH(C0/180)	1.51
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2062.0	η UP, DN(C0-180)	15.5, 34.1
NOMINAL FLUX(lm)	2061.95	CIE CLASS	SEMI-D.	η UP, DN(C180-360)	15.8, 34.6
LAMPS INSIDE	1	η up(%)	31.3	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	230.2	η down(%)	68.7	CIBSE SHR MAX	1.75

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JHJ
Test Date: 2017-04-14

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 7.930m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	ϕ zone	ϕ total	%lum, lamp
10	263.2	261.0	261.7	264.6					0- 10	25.08	25.08	1.22, 1.22
20	262.5	258.6	260.0	265.4					10- 20	74.32	99.40	4.82, 4.82
30	260.3	255.5	257.1	264.4					20- 30	120.6	220.0	10.7, 10.7
40	254.9	250.7	252.5	259.9					30- 40	161.5	381.5	18.5, 18.5
50	244.7	241.1	243.5	250.1					40- 50	193.7	575.2	27.9, 27.9
60	229.2	227.8	230.2	234.4					50- 60	213.4	788.6	38.2, 38.2
70	209.2	210.4	213.1	213.8					60- 70	219.6	1008	48.9, 48.9
80	186.8	190.1	192.9	190.8					70- 80	212.6	1221	59.2, 59.2
90	163.5	168.2	171.2	166.7					80- 90	195.1	1416	68.7, 68.7
100	140.7	146.2	149.2	143.2					90-100	170.3	1586	76.9, 76.9
110	118.8	125.0	127.8	121.0					100-110	141.7	1728	83.8, 83.8
120	99.16	105.3	107.8	101.2					110-120	112.4	1840	89.2, 89.2
130	81.62	87.26	89.57	83.55					120-130	84.72	1925	93.4, 93.4
140	66.29	71.34	73.35	68.09					130-140	60.16	1985	96.3, 96.3
150	53.39	57.66	59.32	55.04					140-150	39.66	2025	98.2, 98.2
160	41.73	45.28	47.50	43.96					150-160	23.47	2048	99.3, 99.3
170	30.24	33.74	36.58	33.40					160-170	11.34	2060	99.9, 99.9
180	3.653	3.653	3.649	3.657					170-180	2.341	2062	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

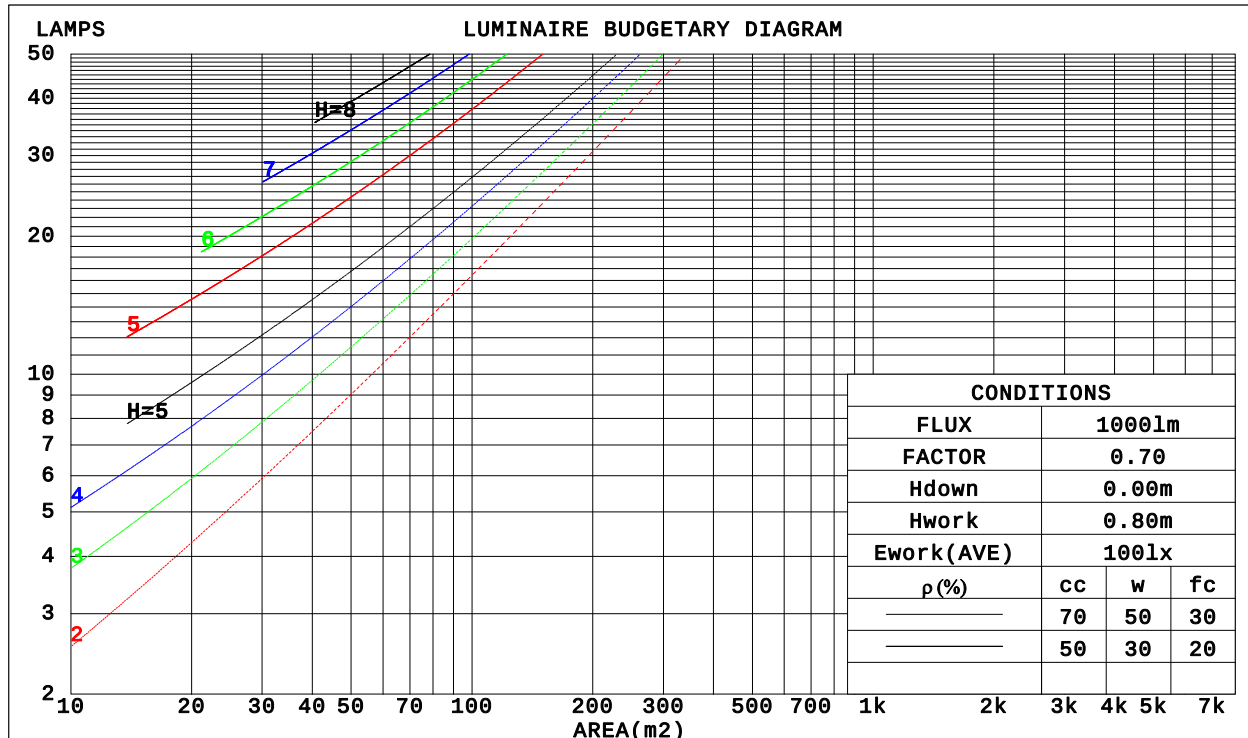
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JHJ
 Test Date: 2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 7.930m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	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						Coefficients of Utilization(CU)										
0.0	1.12	1.12	1.12	1.05	1.05	1.05	.94	.94	.94	.83	.83	.83	.73	.73	.73	.69	
1.0	.91	.85	.80	.86	.80	.76	.75	.71	.68	.66	.63	.60	.58	.55	.53	.48	
2.0	.77	.69	.62	.72	.65	.59	.64	.58	.52	.55	.51	.47	.48	.44	.41	.37	
3.0	.66	.57	.49	.62	.54	.47	.55	.48	.42	.48	.42	.37	.41	.37	.33	.29	
4.0	.58	.48	.41	.54	.45	.39	.48	.40	.35	.42	.36	.31	.36	.31	.27	.24	
5.0	.51	.41	.34	.48	.39	.32	.42	.35	.29	.37	.31	.26	.32	.27	.23	.20	
6.0	.45	.36	.29	.43	.34	.28	.38	.30	.25	.33	.27	.22	.29	.24	.20	.17	
7.0	.41	.32	.25	.38	.30	.24	.34	.27	.22	.30	.24	.19	.26	.21	.17	.15	
8.0	.37	.28	.22	.35	.27	.21	.31	.24	.19	.27	.21	.17	.24	.19	.15	.13	
9.0	.34	.25	.19	.32	.24	.19	.28	.22	.17	.25	.19	.15	.22	.17	.14	.11	
10.0	.31	.23	.17	.29	.22	.17	.26	.20	.15	.23	.18	.14	.20	.16	.12	.10	



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JHJ
 Test Date:2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:7.930m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm														
NAME: G120 18W E27 6500K -1							TYPE:				WEIGHT:			
DIM.:							SPEC.:				SERIAL No.:			
MFR.:							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	.414	.235	.075	.397	.227	.072	.366	.210	.067	.337	.194	.062	.310	.180	.058													
2.0	.349	.191	.059	.334	.184	.057	.305	.170	.053	.279	.156	.049	.254	.144	.045													
3.0	.306	.163	.049	.292	.156	.047	.266	.144	.044	.242	.132	.041	.219	.121	.038													
4.0	.273	.142	.042	.260	.136	.040	.236	.125	.037	.214	.115	.035	.194	.105	.032													
5.0	.246	.125	.036	.235	.121	.035	.213	.111	.033	.193	.102	.030	.174	.093	.028													
6.0	.225	.113	.032	.214	.108	.031	.194	.099	.029	.175	.091	.027	.158	.083	.025													
7.0	.206	.102	.029	.197	.098	.028	.178	.090	.026	.161	.083	.024	.145	.075	.022													
8.0	.191	.093	.026	.182	.090	.025	.165	.082	.024	.149	.075	.022	.134	.069	.020													
9.0	.177	.086	.024	.169	.082	.023	.153	.076	.021	.138	.069	.020	.124	.063	.018													
10.0	.166	.079	.022	.158	.076	.021	.143	.070	.020	.129	.064	.018	.116	.059	.017													

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	.429	.429	.429	.367	.367	.367	.250	.250	.250	.144	.144	.144	.046	.046	.046	
1.0	.428	.396	.367	.366	.340	.316	.251	.234	.218	.144	.135	.127	.046	.044	.041	
2.0	.422	.374	.333	.362	.322	.288	.248	.223	.201	.143	.130	.118	.046	.042	.038	
3.0	.415	.358	.313	.356	.309	.271	.244	.215	.190	.141	.125	.112	.045	.041	.037	
4.0	.407	.346	.300	.350	.299	.260	.240	.208	.183	.139	.122	.108	.045	.040	.036	
5.0	.400	.337	.290	.343	.291	.253	.236	.204	.178	.137	.120	.106	.044	.039	.035	
6.0	.392	.329	.284	.337	.285	.247	.233	.200	.175	.135	.117	.104	.044	.038	.034	
7.0	.385	.323	.279	.331	.280	.243	.229	.196	.172	.133	.116	.103	.043	.038	.034	
8.0	.378	.317	.275	.326	.275	.240	.225	.193	.170	.131	.114	.102	.042	.037	.034	
9.0	.372	.313	.273	.321	.271	.238	.222	.191	.169	.129	.113	.101	.042	.037	.033	
10.0	.366	.309	.270	.316	.268	.236	.219	.189	.168	.128	.112	.100	.041	.037	.033	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JHJ
Test Date:2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:7.930m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm												
NAME: G120 18W E27 6500K -1					TYPE:			WEIGHT:				
DIM.:					SPEC.:			SERIAL No.:				
MFR.:					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	20.1	21.4	20.8	22.1	22.9	20.1	21.4	20.8	22.1	22.9	
	3H	22.9	24.1	23.6	24.8	25.7	22.9	24.1	23.6	24.8	25.7	
	4H	24.5	25.6	25.2	26.3	27.2	24.5	25.6	25.2	26.3	27.2	
	6H	26.2	27.2	26.9	28.0	28.9	26.2	27.3	27.0	28.0	28.9	
	8H	27.1	28.1	27.9	28.9	29.8	27.2	28.2	27.9	29.0	29.9	
	12H	28.2	29.2	29.0	30.0	30.9	28.3	29.3	29.1	30.0	31.0	
	4H	2H	21.0	22.1	21.7	22.9	23.7	21.0	22.1	21.7	22.8	23.7
		3H	24.0	25.0	24.7	25.7	26.7	24.0	25.0	24.7	25.7	26.7
		4H	25.7	26.6	26.5	27.4	28.3	25.7	26.6	26.5	27.4	28.3
		6H	27.6	28.4	28.4	29.2	30.2	27.6	28.4	28.4	29.2	30.2
		8H	28.6	29.4	29.4	30.2	31.2	28.7	29.4	29.5	30.2	31.2
		12H	29.8	30.5	30.6	31.3	32.4	29.9	30.6	30.7	31.4	32.4
	8H	4H	26.3	27.1	27.1	27.9	28.9	26.3	27.1	27.2	27.9	28.9
		6H	28.5	29.1	29.3	30.0	31.0	28.5	29.2	29.4	30.0	31.0
		8H	29.7	30.3	30.6	31.1	32.2	29.8	30.3	30.6	31.2	32.3
		12H	31.1	31.6	32.0	32.5	33.6	31.2	31.7	32.1	32.6	33.7
	12H	4H	26.5	27.2	27.3	28.0	29.0	26.5	27.2	27.3	28.0	29.1
		6H	28.8	29.3	29.6	30.2	31.3	28.8	29.4	29.7	30.2	31.3
8H		30.1	30.6	31.0	31.5	32.6	30.2	30.7	31.0	31.5	32.6	
Variations with the observer position at spacings:												
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1						
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3						
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4						

CIE Pub.117 Corrected 2062 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.5)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JHJ
Test Date:2017-04-14

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:7.930m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

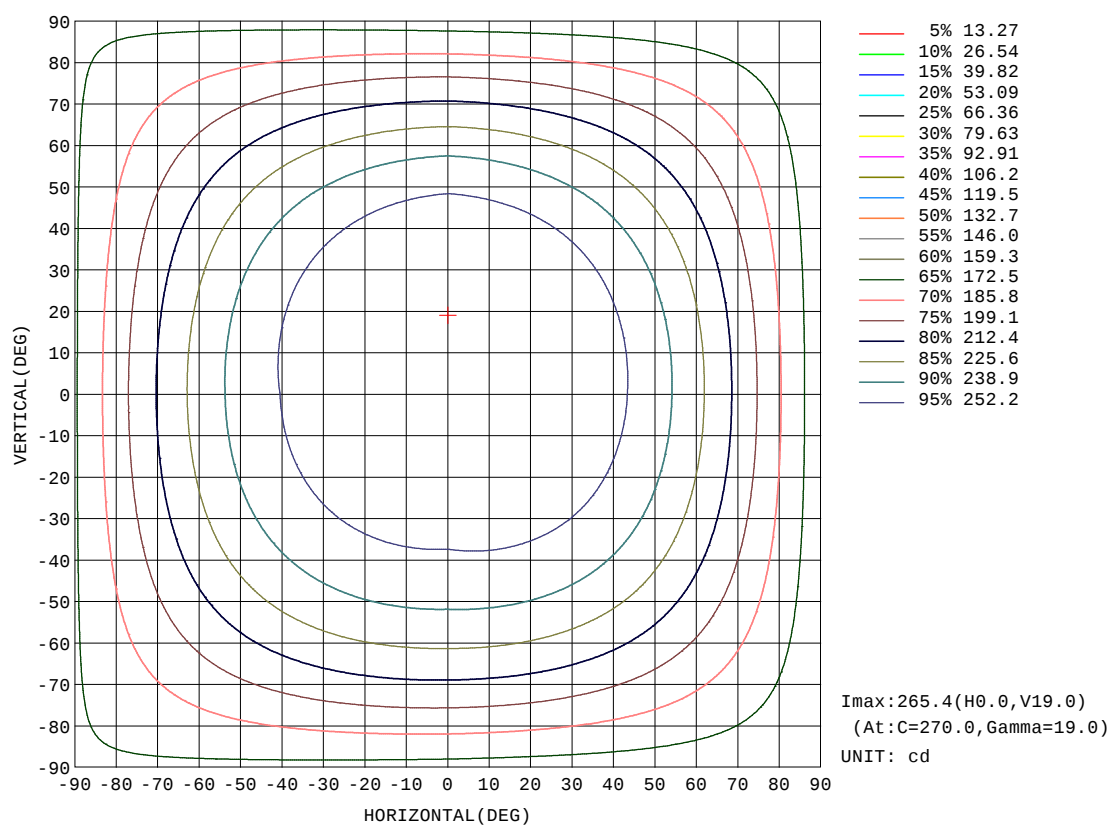
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	41	29	21	40	28	21	37	27	20	13
0.80	50	37	28	48	36	28	45	33	26	18
1.00	58	44	35	55	42	34	51	42	32	22
1.25	65	51	42	62	49	40	56	45	38	27
1.50	70	56	47	66	54	46	60	50	43	30
2.00	77	65	56	73	62	54	66	57	50	35
2.50	82	71	62	78	68	60	70	61	55	39
3.00	86	76	67	82	72	65	73	65	59	42
4.00	91	82	75	86	78	71	77	70	65	47
5.00	95	87	80	89	82	76	79	74	69	50
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JHJ
 Test Date: 2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 7.930m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



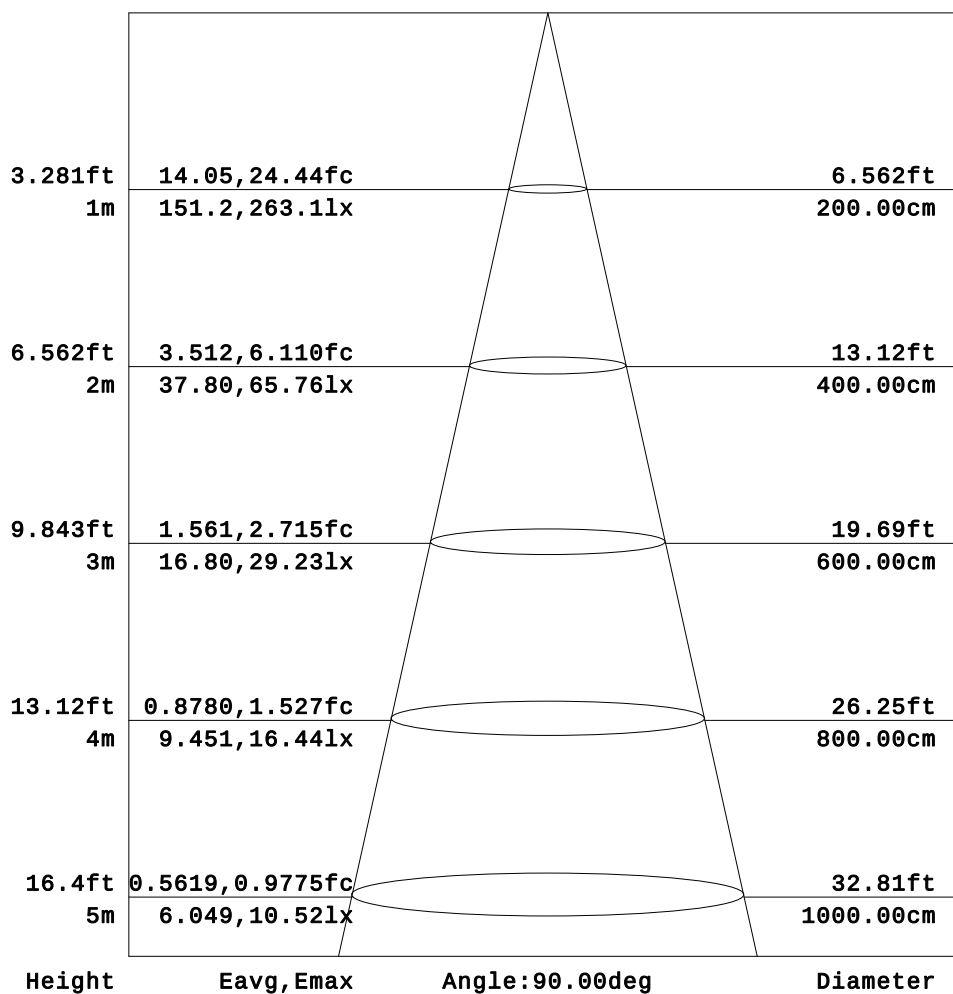
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JHJ
Test Date: 2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 7.930m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Flux out:475.1 lm



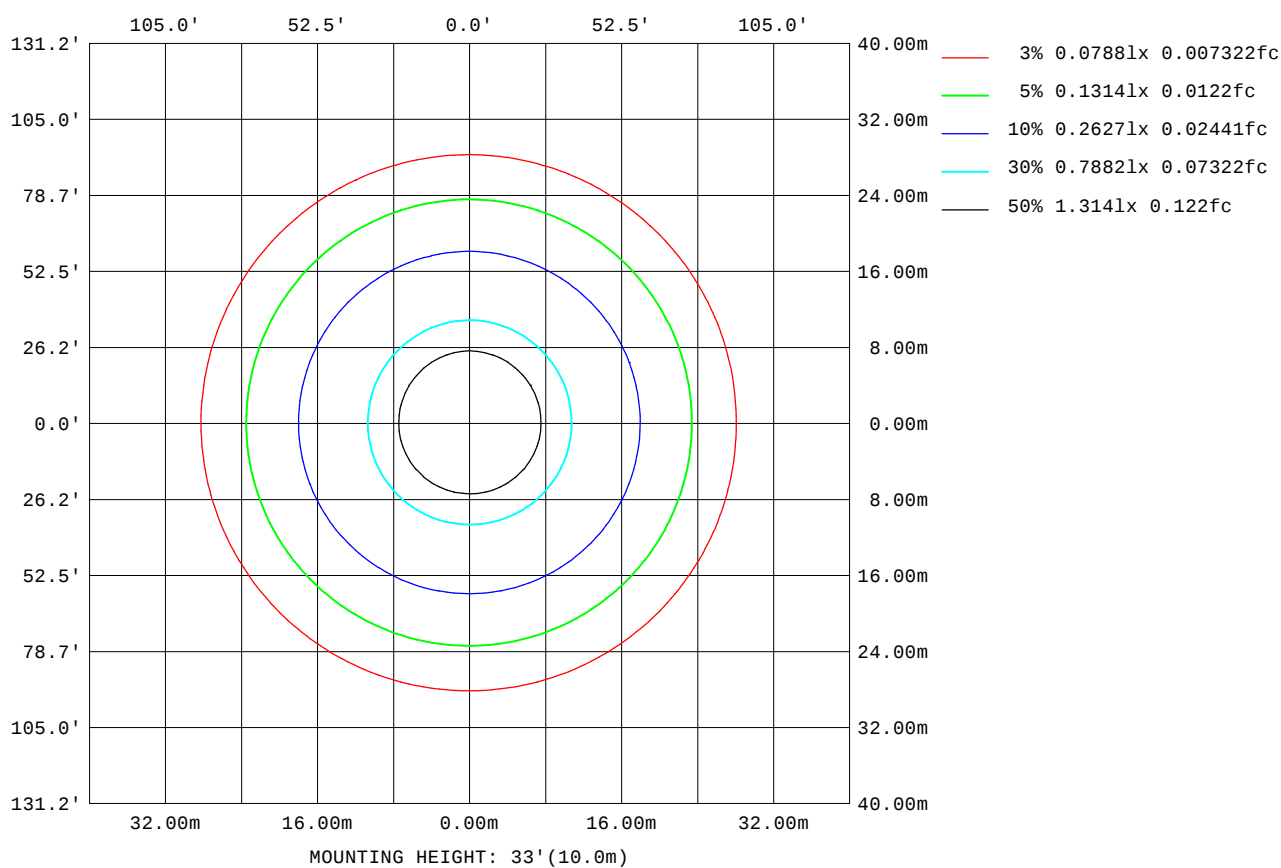
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JHJ
Test Date: 2017-04-14

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 7.930m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

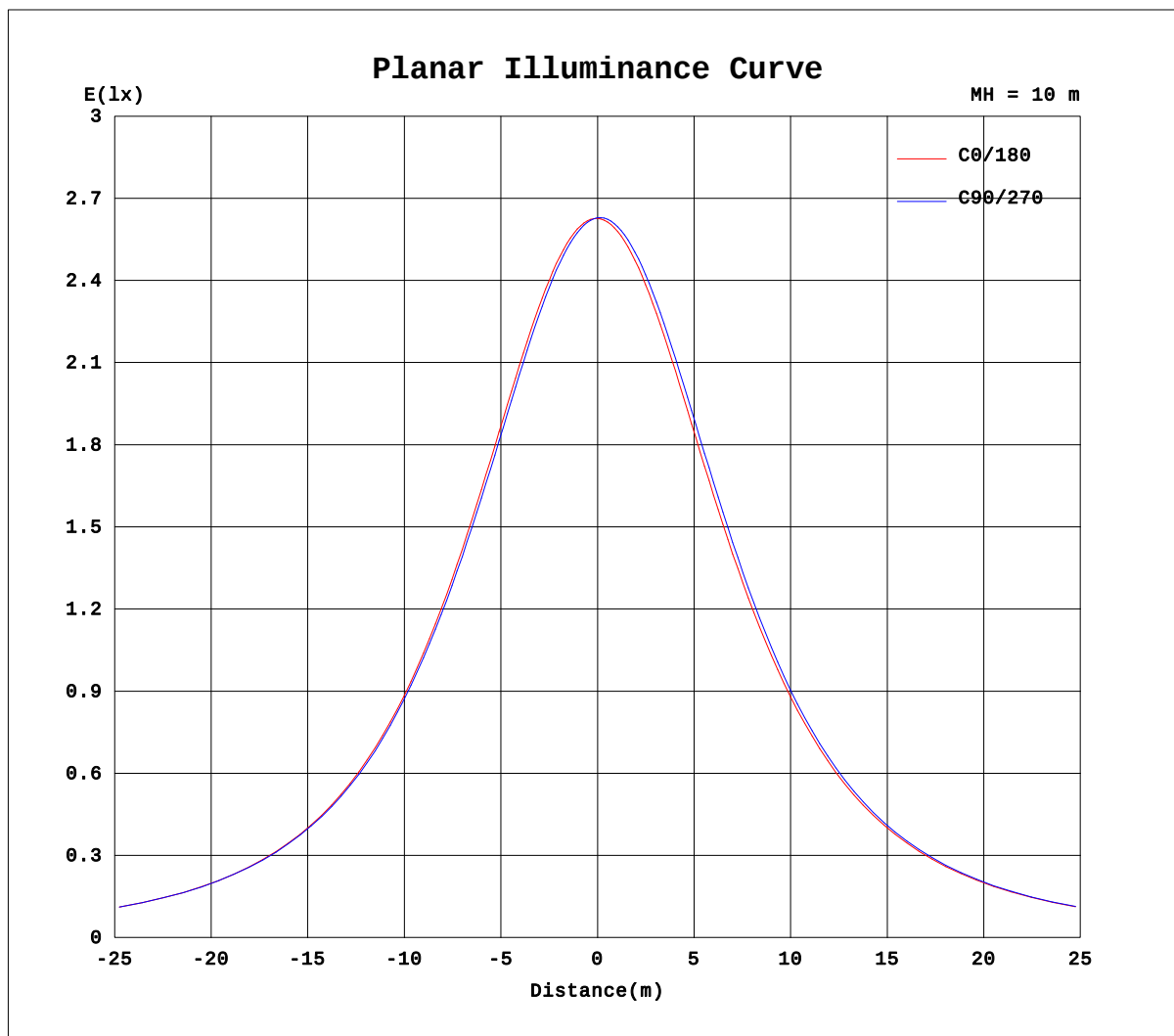
Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JHJ
Test Date: 2017-04-14

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 7.930m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JHJ
Test Date: 2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 7.930m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.2V I:0.1358A P:17.05W PF:0.5457 Lamp Flux:2061.95x1 lm		
NAME: G120 18W E27 6500K -1	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	90	180	270														
0	263	263	263	263														
5	263	262	262	264														
10	263	261	262	265														
15	263	260	261	265														
20	263	259	260	265														
25	262	257	259	265														
30	260	255	257	264														
35	258	253	255	263														
40	255	251	252	260														
45	251	247	249	256														
50	245	241	243	250														
55	238	235	237	243														
60	229	228	230	234														
65	220	220	222	225														
70	209	210	213	214														
75	198	201	203	203														
80	187	190	193	191														
85	175	179	182	179														
90	163	168	171	167														
95	152	157	160	155														
100	141	146	149	143														
105	129	135	138	132														
110	119	125	128	121														
115	109	115	118	111														
120	99.2	105	108	101														
125	90.1	96.0	98.5	92.1														
130	81.6	87.3	89.6	83.5														
135	73.6	79.0	81.2	75.5														
140	66.3	71.3	73.3	68.1														
145	59.5	64.2	66.0	61.2														
150	53.4	57.7	59.3	55.0														
155	47.3	51.2	53.2	49.4														
160	41.7	45.3	47.5	44.0														
165	36.8	39.7	42.2	39.1														
170	30.2	33.7	36.6	33.4														
175	17.2	21.4	24.6	21.5														
180	3.65	3.65	3.65	3.66														

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JHJ
 Test Date:2017-04-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:7.930m [K=1.0000]
 Remarks: