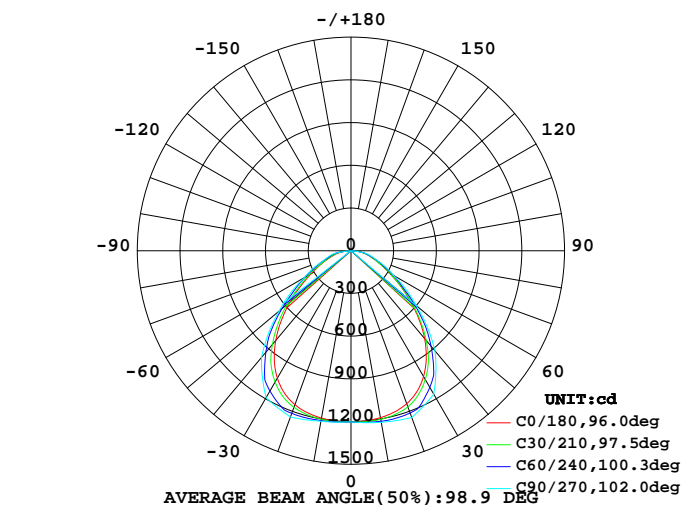


LUMINAIRE PHOTOMETRIC TEST REPORT

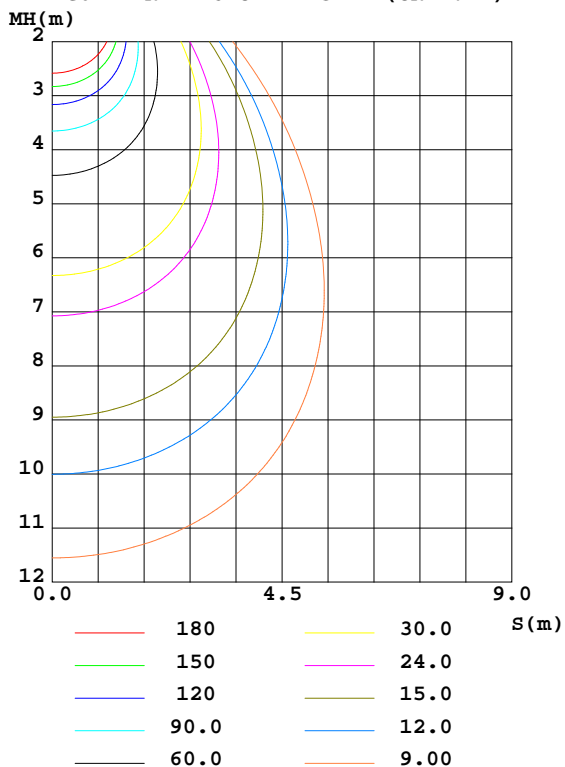
Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 93.23 lm/W			
MODEL	PL-3012-36N	Imax(cd)	1246	S/MH(C0/180)	1.26
NOMINAL POWER(W)	36	LOR(%)	100.0	S/MH(C90/270)	1.39
RATED VOLTAGE(V)	100-240	TOTAL FLUX(lm)	3022.1	η UP,DN(C0-180)	0.0,49.1
NOMINAL FLUX(lm)	3022.13	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.5	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



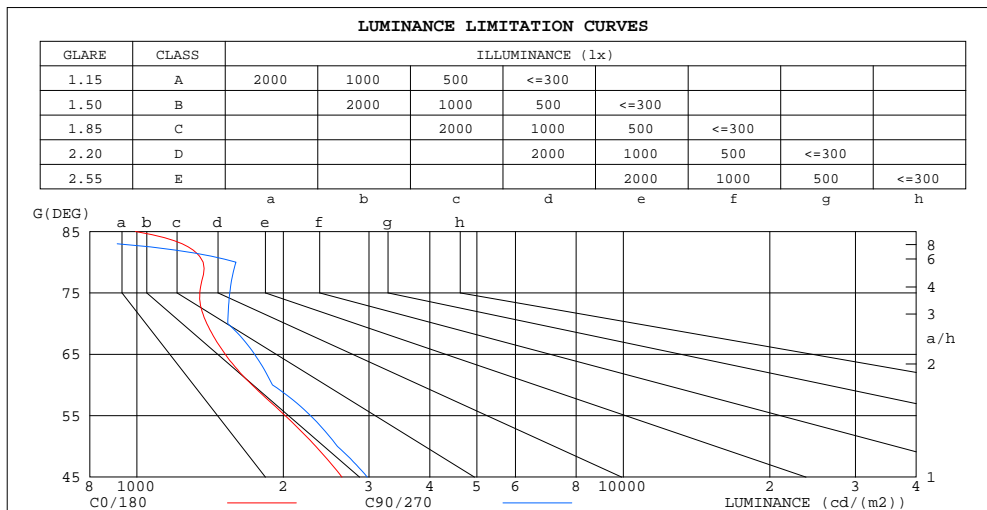
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:HJC
Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
5	1199	1207	1212	1208	1200	1206	1208	1205	0- 5	28.80	28.80	0.95,0.95
10	1191	1209	1223	1212	1193	1206	1216	1205	5- 10	86.35	115.2	3.81,3.81
15	1173	1205	1235	1209	1178	1203	1229	1200	10- 15	143.1	258.3	8.55,8.55
20	1143	1186	1246	1193	1151	1191	1242	1187	15- 20	197.7	455.9	15.1,15.1
25	1093	1150	1204	1161	1105	1164	1218	1157	20- 25	246.7	702.6	23.2,23.2
30	1020	1076	1163	1089	1034	1103	1193	1093	25- 30	284.9	987.5	32.7,32.7
35	921.8	972.8	1040	985.7	938.8	1011	1085	1001	30- 35	308.3	1296	42.9,42.9
40	804.7	854.4	917.3	867.0	822.1	900.2	977.5	890.2	35- 40	312.2	1608	53.2,53.2
45	671.9	702.7	757.5	715.0	691.9	753.8	818.6	741.6	40- 45	297.8	1906	63.1,63.1
50	539.7	557.4	597.8	567.9	557.8	610.8	659.7	595.8	45- 50	265.8	2172	71.9,71.9
55	416.7	428.5	469.9	438.9	430.6	470.9	519.7	461.2	50- 55	224.4	2396	79.3,79.3
60	310.5	318.5	342.0	329.0	321.8	350.2	379.6	345.8	55- 60	182.0	2578	85.3,85.3
65	231.1	242.3	265.6	249.1	241.5	264.7	293.0	261.9	60- 65	143.3	2721	90,90
70	171.5	181.9	189.3	186.1	176.7	196.5	206.5	195.3	65- 70	111.5	2833	93.7,93.7
75	125.5	135.8	144.6	138.1	127.8	146.2	165.1	145.1	70- 75	85.25	2918	96.6,96.6
80	85.58	90.80	99.95	92.36	88.38	106.6	123.7	106.2	75- 80	64.42	2983	98.7,98.7
85	31.16	26.51	0	27.01	33.85	34.53	0	34.52	80- 85	35.74	3018	99.9,99.9
90	0.5847	0	0	0	0.4079	0	0	0	85- 90	3.839	3022	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		



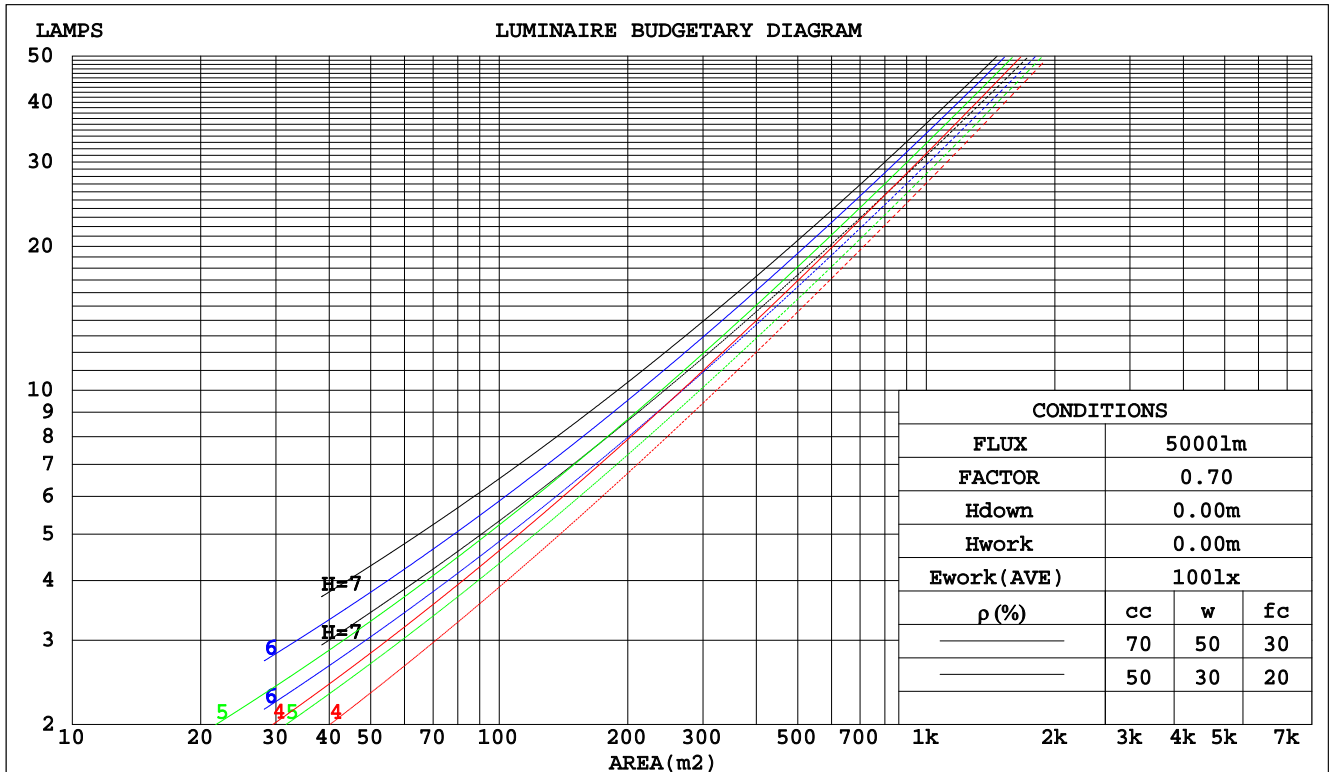
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators: HJC
 Test Date: 2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 25%
 Test Distance: 7.300m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:

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						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	1.05	1.02	.98	1.03	.90	.97	.99	.96	.93	.95	.93	.91	.92	.90	.88	.86
2.0	.93	.87	.82	.91	.86	.81	.88	.83	.79	.85	.81	.77	.82	.78	.75	.73
3.0	.83	.75	.69	.81	.74	.69	.78	.72	.67	.76	.71	.66	.73	.69	.65	.63
4.0	.74	.66	.60	.73	.65	.59	.70	.64	.58	.68	.62	.58	.66	.61	.57	.55
5.0	.67	.58	.52	.66	.58	.52	.64	.57	.51	.62	.55	.51	.60	.54	.50	.48
6.0	.60	.52	.46	.59	.51	.46	.58	.51	.45	.56	.50	.45	.55	.49	.45	.43
7.0	.55	.47	.41	.54	.46	.41	.53	.46	.40	.51	.45	.40	.50	.44	.40	.38
8.0	.50	.42	.37	.50	.42	.37	.48	.41	.36	.47	.41	.36	.46	.40	.36	.34
9.0	.46	.38	.33	.46	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.33	.31
10.0	.43	.35	.30	.42	.35	.30	.41	.35	.30	.40	.34	.30	.40	.34	.30	.28



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators: HJC
 Test Date: 2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 25%
 Test Distance: 7.300m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm									
NAME:				TYPE:			WEIGHT:		
SPEC.:3012				DIM.:			SERIAL No.:		
MFR.: MGL				SUR.:1.2*0.3			Shielding Angle:		

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	.279	.159	.050	.272	.155	.049	.259	.148	.047	.247	.142	.046	.236	.137	.044		
2.0	.265	.145	.045	.259	.143	.044	.247	.138	.043	.237	.133	.042	.227	.128	.041		
3.0	.248	.132	.039	.242	.130	.039	.232	.126	.038	.223	.122	.037	.214	.119	.037		
4.0	.231	.120	.035	.226	.118	.035	.217	.115	.034	.209	.112	.034	.201	.109	.033		
5.0	.215	.110	.032	.211	.108	.032	.203	.106	.031	.196	.103	.031	.189	.101	.030		
6.0	.201	.101	.029	.197	.100	.029	.190	.097	.028	.184	.095	.028	.177	.093	.028		
7.0	.188	.093	.026	.185	.092	.026	.179	.090	.026	.173	.089	.026	.167	.087	.026		
8.0	.177	.086	.024	.174	.086	.024	.168	.084	.024	.163	.082	.024	.158	.081	.024		
9.0	.166	.080	.022	.164	.080	.022	.159	.078	.022	.154	.077	.022	.149	.076	.022		
10.0	.157	.075	.021	.155	.075	.021	.150	.074	.021	.146	.072	.021	.142	.071	.020		

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	.178	.156	.137	.152	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.169	.132	.101	.144	.114	.088	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.160	.114	.077	.137	.098	.067	.094	.068	.047	.054	.040	.028	.017	.013	.009	
4.0	.152	.101	.061	.131	.087	.053	.090	.061	.037	.052	.035	.022	.017	.012	.007	
5.0	.145	.090	.049	.124	.078	.043	.086	.054	.030	.050	.032	.018	.016	.010	.006	
6.0	.138	.081	.041	.119	.071	.036	.082	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.075	.035	.113	.065	.030	.078	.045	.021	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.108	.060	.026	.075	.042	.018	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.103	.055	.023	.071	.039	.016	.042	.023	.010	.013	.008	.003	
10.0	.114	.059	.023	.098	.052	.020	.068	.036	.014	.040	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm										
NAME:					TYPE:			WEIGHT:		
SPEC.:3012					DIM.:			SERIAL No.:		
MFR.: MGL					SUR.:1.2*0.3			Shielding 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	14.6	16.0	14.8	16.2	16.4	15.2	16.6	15.5	16.8	17.0
3H	15.5	16.8	15.8	17.0	17.2	16.2	17.5	16.5	17.7	17.9
4H	15.9	17.1	16.2	17.4	17.6	16.6	17.9	16.9	18.1	18.4
6H	16.3	17.5	16.6	17.7	18.0	17.1	18.2	17.4	18.5	18.8
8H	16.4	17.6	16.8	17.8	18.1	17.2	18.3	17.5	18.6	18.9
12H	16.5	17.6	16.9	17.9	18.2	17.1	18.2	17.5	18.5	18.8
4H 2H	15.0	16.2	15.3	16.5	16.7	15.5	16.7	15.8	17.0	17.2
3H	16.1	17.2	16.4	17.4	17.7	16.7	17.8	17.0	18.1	18.4
4H	16.7	17.6	17.0	18.0	18.3	17.3	18.3	17.7	18.6	18.9
6H	17.2	18.1	17.6	18.4	18.8	17.9	18.8	18.3	19.1	19.5
8H	17.4	18.3	17.9	18.6	19.0	18.0	18.9	18.5	19.2	19.6
12H	17.6	18.3	18.0	18.7	19.1	18.0	18.8	18.5	19.2	19.6
8H 4H	16.9	17.7	17.3	18.1	18.5	17.5	18.3	17.9	18.7	19.1
6H	17.7	18.3	18.1	18.7	19.2	18.3	18.9	18.7	19.3	19.8
8H	18.0	18.6	18.5	19.0	19.5	18.5	19.1	18.9	19.5	19.9
12H	18.2	18.7	18.7	19.2	19.7	18.5	19.0	19.0	19.4	19.9
12H 4H	17.0	17.7	17.4	18.1	18.5	17.5	18.2	17.9	18.6	19.0
6H	17.8	18.3	18.2	18.8	19.2	18.3	18.9	18.8	19.3	19.8
8H	18.1	18.6	18.6	19.1	19.6	18.6	19.1	19.1	19.5	20.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.1 / - 0.2					+ 0.2 / - 0.2				
2.0H	+ 0.5 / - 0.4					+ 0.6 / - 0.5				

CIE Pub.117 Corrected 3022 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.8)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding 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) $k(RI) \times RCR = 5$									
$k = 0.60$	62	52	45	62	51	45	61	51	45	39
0.80	72	62	55	71	61	55	70	61	55	48
1.00	81	71	64	79	70	64	77	71	63	57
1.25	87	78	72	86	77	71	83	76	70	64
1.50	92	83	77	90	82	76	87	81	75	68
2.00	98	90	85	96	89	84	93	87	82	75
2.50	101	95	89	99	93	88	96	91	86	79
3.00	104	98	93	102	97	92	98	94	90	82
4.00	108	103	99	106	101	97	101	98	95	86
5.00	110	106	102	108	104	100	103	100	97	89
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:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:

Conical surface Flux(90deg):

1905.9 lm

%lum = 63.1%

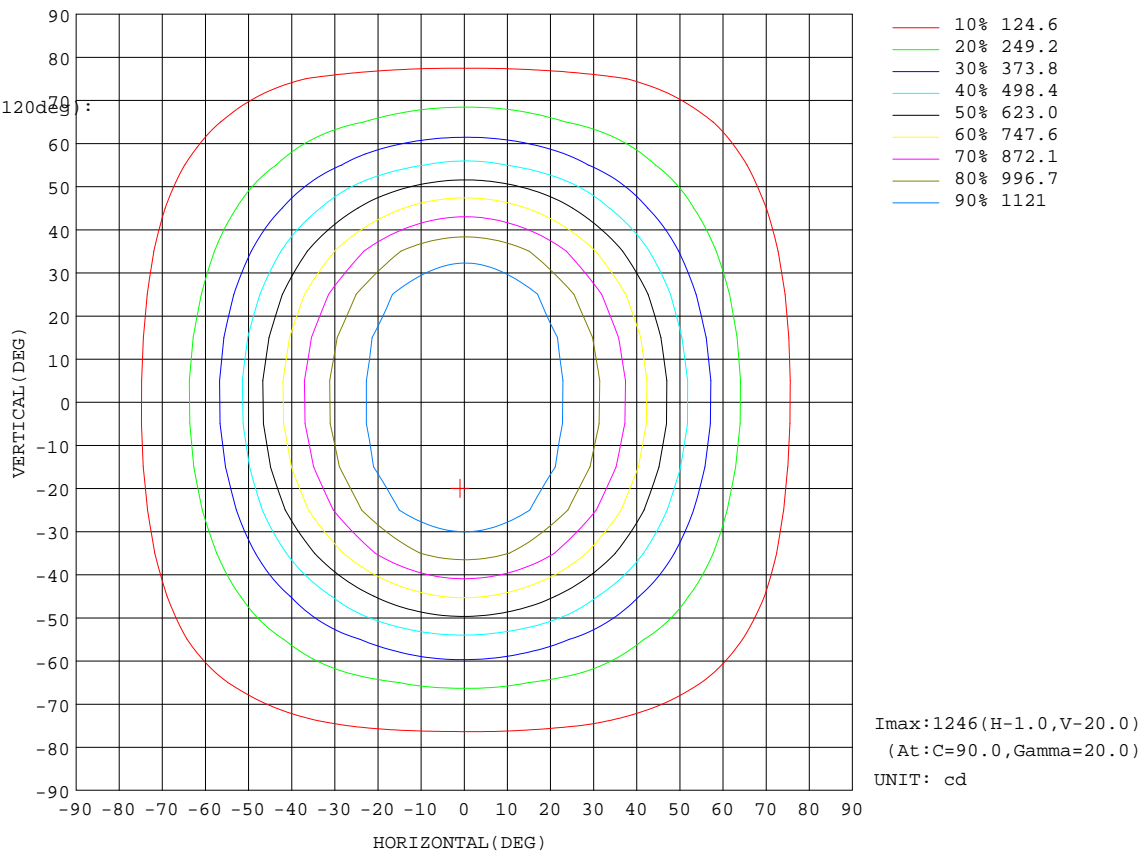
%lamp = 63.1%

Conical surface Flux(120deg):

2578.1 lm

%lum = 85.3%

%lamp = 85.3%

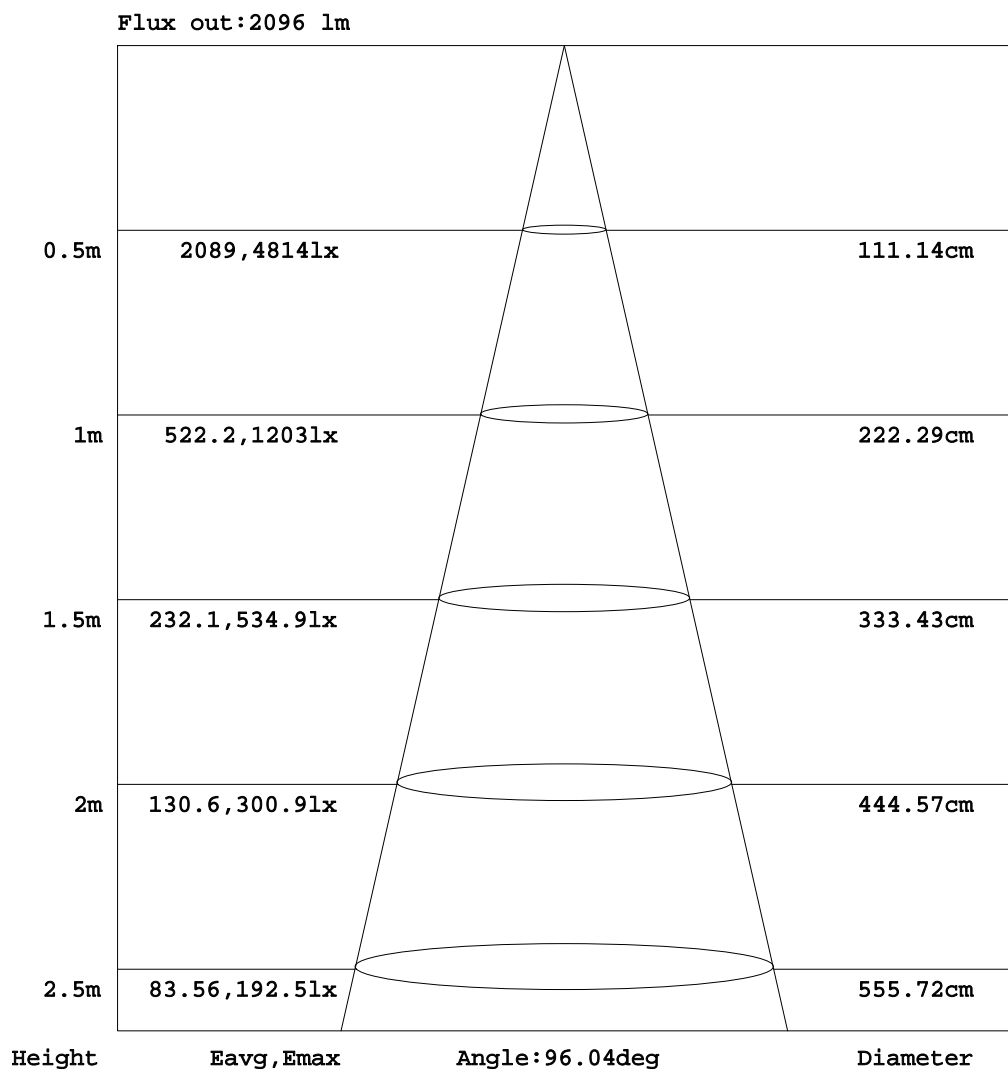


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:HJC
Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

AAI Figure

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:



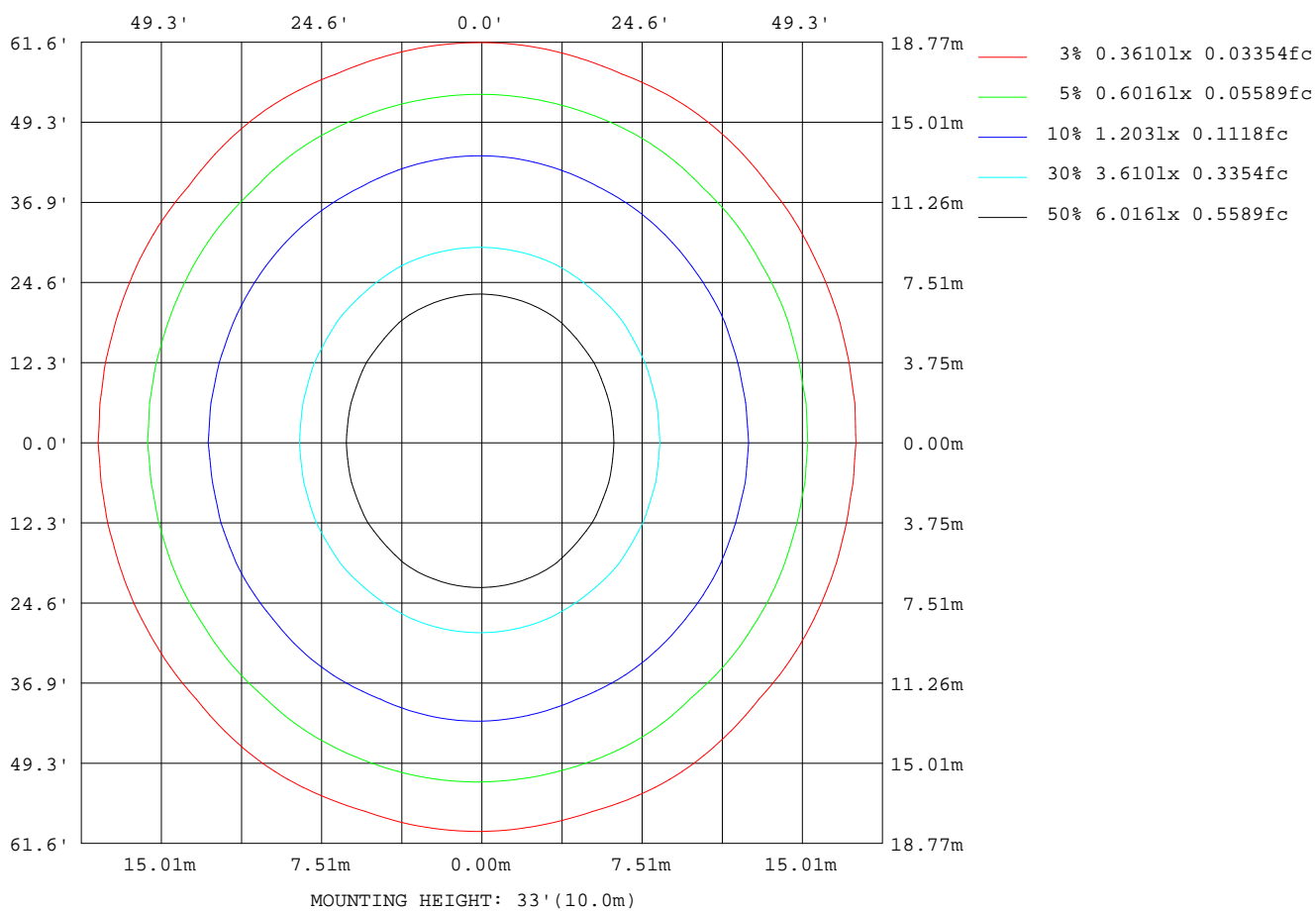
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:221.6V I:0.1537A P:32.42W PF:0.9516 Lamp Flux:3022.13x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:3012	DIM.:	SERIAL No.:
MFR.: MGL	SUR.:1.2*0.3	Shielding Angle:

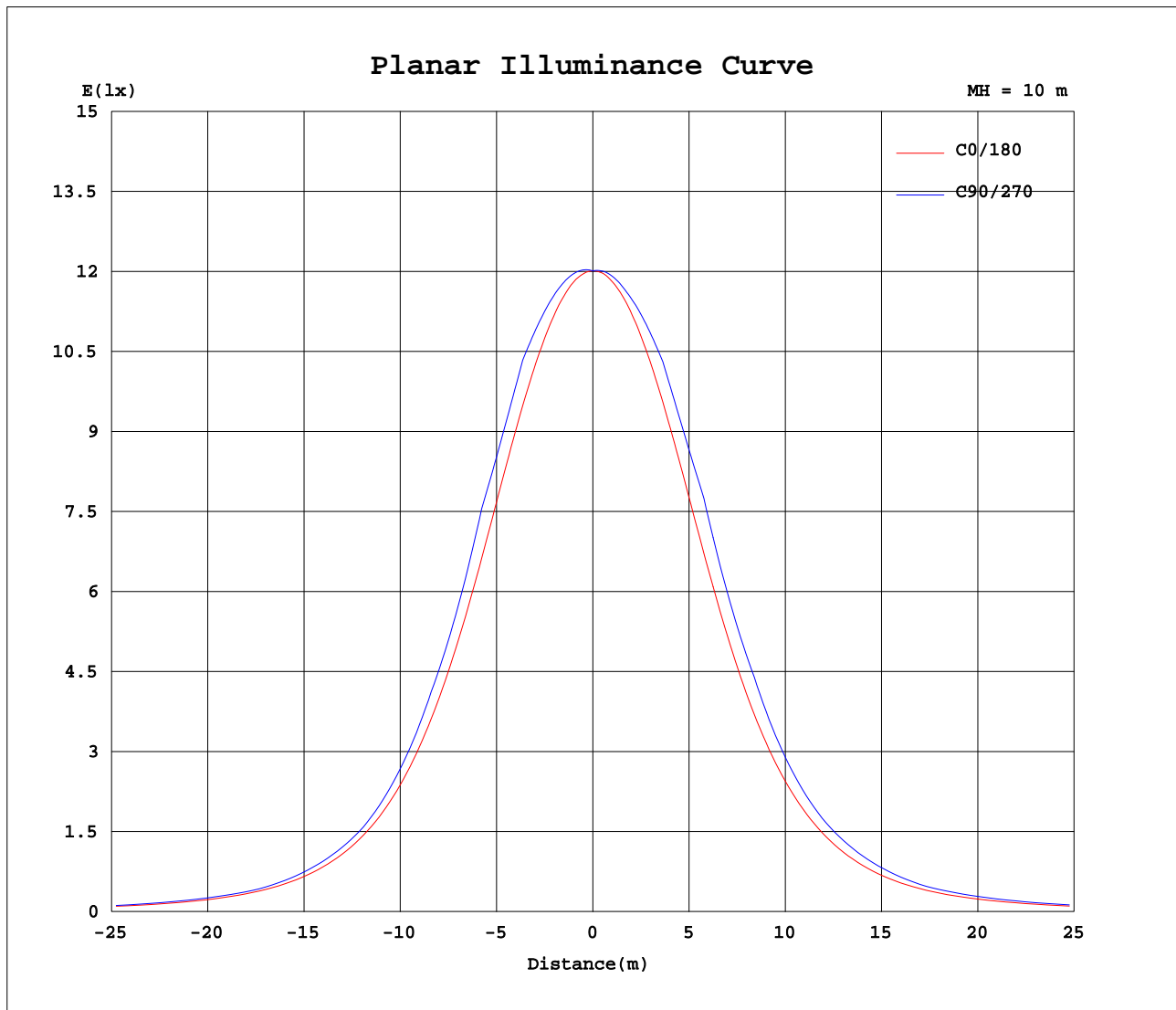
AvgL	cd/m2
L_0~180(65)av	1553
L_0~180(75)av	1359
L_0~180(85)av	1036
L_90~270(65)av	1836
L_90~270(75)av	1662
L_90~270(85)av	0
L_45(65)av	1673
L_45(75)av	1517
L_45(85)av	977

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:HJC
 Test Date:2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:25%
 Test Distance:7.300m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25DEG
Operators: HJC
Test Date: 2016-03-23

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 25%
Test Distance: 7.300m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:25%
Test Distance:7.300m [K=1.0000]
Remarks:

```