

LED Downlight CATO Series CS8F-30S-830



Light Output Ratio:	100.0%	
Luminaire Power:	33.89 W	
SHR Nominal:	1.25	Calculated using the TM5
SHR Maximum:	1.25	fine grid method.

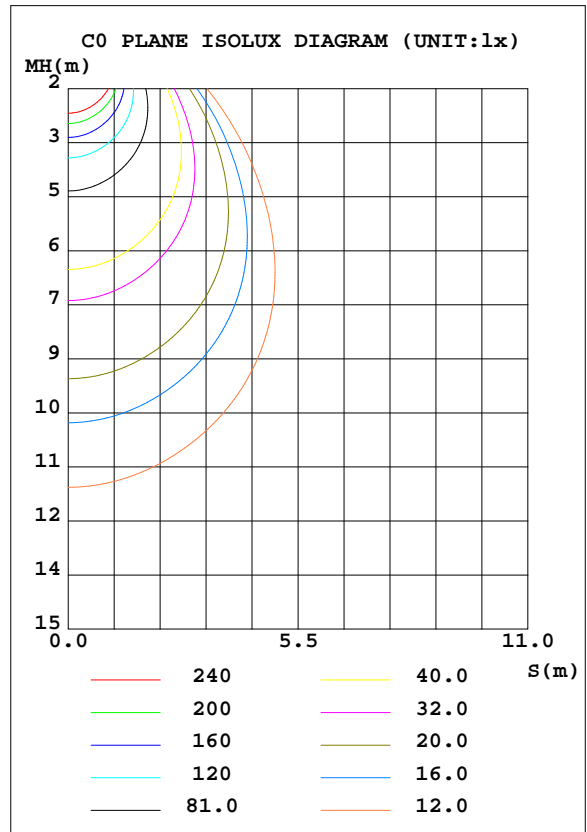
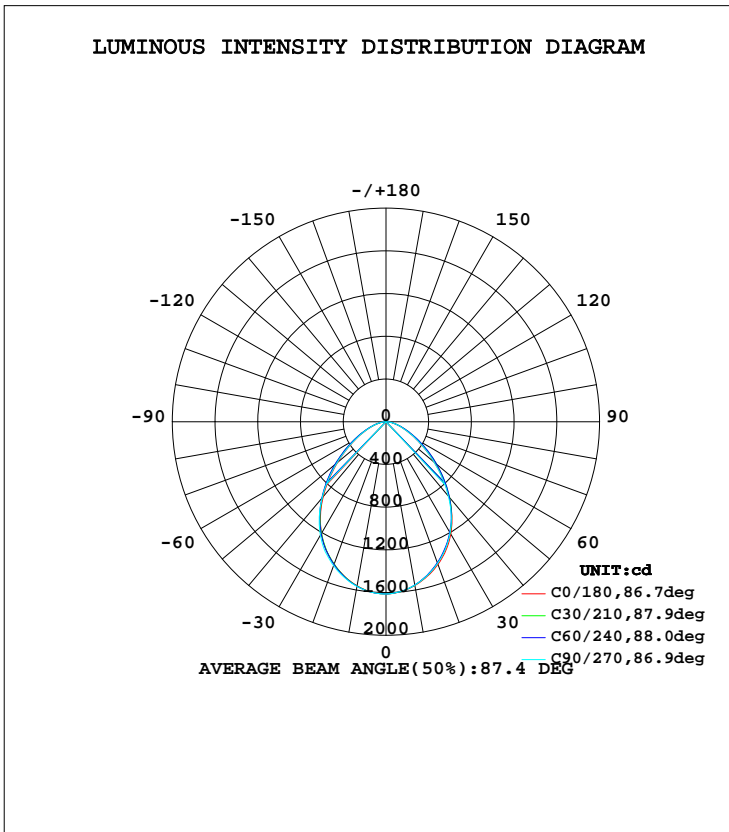
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Cao Chengpei  
 Test Date: 2014-08-30

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity: 53.0%  
 Test Distance: 5.780m [K=1.0000]  
 Remarks:

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.3V I:0.1556A P:33.89W PF:0.9891 Lamp Flux:3250.54x1 lm		
NAME: CS8F-30S-830	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L230mm*W230mm*H76mm	
MFR.: E-LITE LIGHTING CO.,LTD.		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 95.91 lm/W			
MODEL	SAMSUNG-3000K	I <sub>max</sub> (cd)	1612	S/MH(C0/180)	1.13
NOMINAL POWER(W)	36	LOR(%)	100.0	S/MH(C90/270)	1.15
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	3250.5	η UP, DN(C0-180)	0.0, 49.8
NOMINAL FLUX(lm)	3250.54	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.25



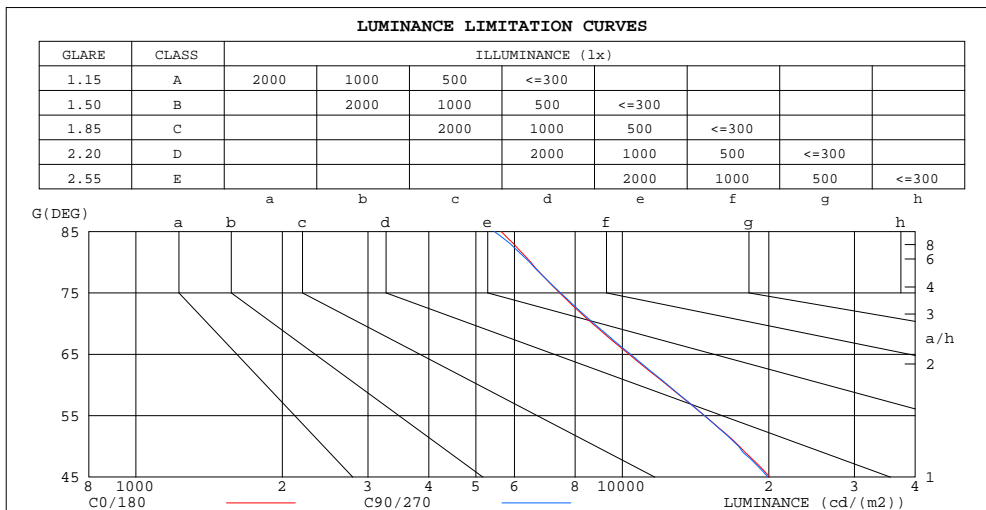
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 Remarks:

**ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES**

**ZONAL FLUX DIAGRAM:**

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	1557	1554	1553	1555	1561	1561	1566	1561	0- 10	151.3	151.3	4.65,4.65
20	1422	1407	1412	1406	1420	1416	1434	1420	10- 20	421.3	572.6	17.6,17.6
30	1214	1202	1201	1195	1209	1203	1229	1213	20- 30	607.4	1180	36.3,36.3
40	919.2	936.6	908.7	926.1	914.8	931.4	931.1	945.4	30- 40	670.0	1850	56.9,56.9
50	591.9	635.2	589.9	625.1	591.3	626.5	599.9	638.0	40- 50	591.0	2441	75.1,75.1
60	326.7	364.9	328.0	357.9	327.0	358.5	330.9	365.3	50- 60	420.4	2861	88,88
70	157.1	176.7	158.3	172.0	156.2	171.2	158.7	175.4	60- 70	244.4	3106	95.5,95.5
80	59.56	65.69	59.25	62.10	57.02	61.96	59.67	65.17	70- 80	114.5	3220	99.1,99.1
90	1.874	1.011	0.4242	0.4388	0.3764	0.3993	0.5615	2.001	80- 90	30.31	3251	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5634	5456
80	6484	6450
75	7434	7467
70	8684	8750
65	10325	10398
60	12351	12401
55	14758	14749
50	17408	17349
45	20103	19924

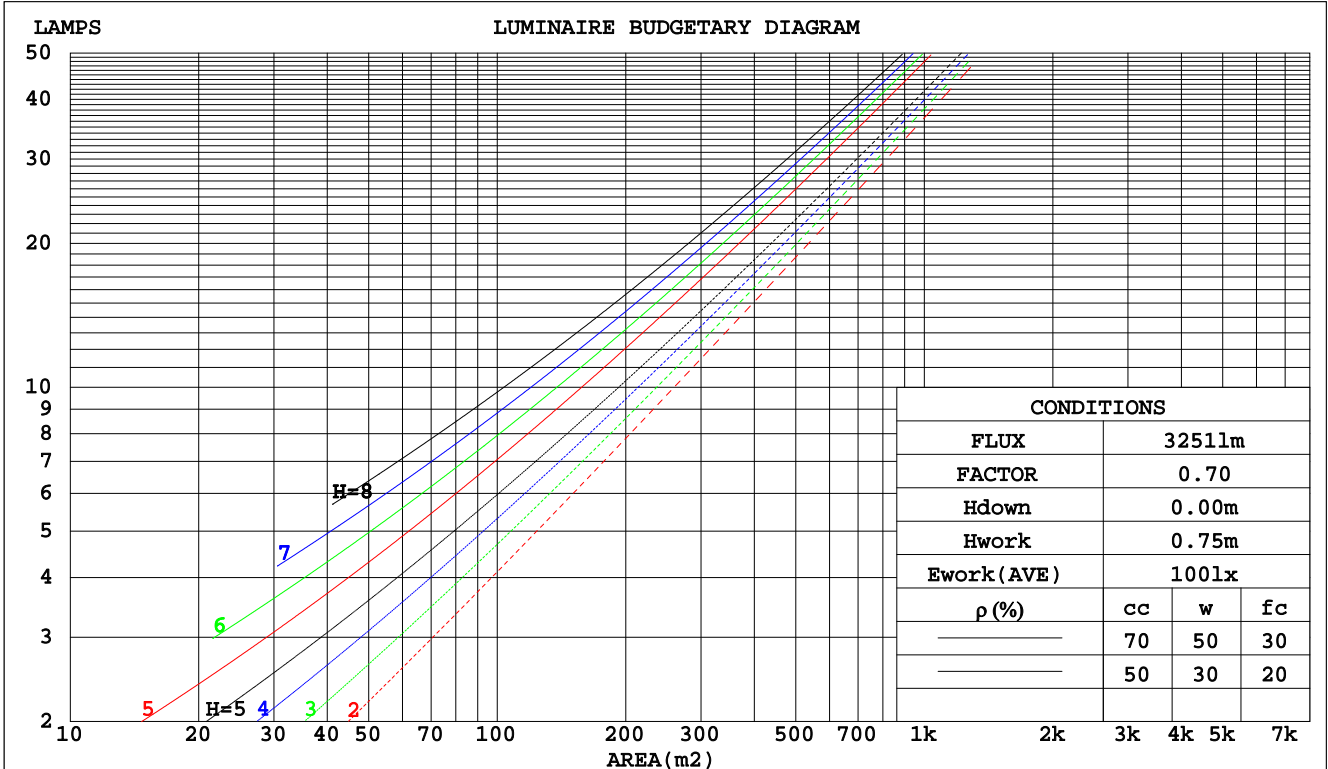
C Range: 0 - 360DEG  
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 Operators:Cao Chengpei  
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$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity:53.0%  
 Test Distance:5.780m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.3V I:0.1556A P:33.89W PF:0.9891 Lamp Flux:3250.54x1 lm		
NAME: CS8F-30S-830	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L230mm*W230mm*H76mm	
MFR.: E-LITE LIGHTING CO.,LTD.		

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	1.06	1.03	.99	1.04	1.01	.98	.90	.97	.95	.96	.94	.92	.93	.91	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.77	.72	.83	.76	.71	.80	.74	.70	.78	.73	.69	.75	.71	.67	.65
4.0	.76	.68	.62	.75	.67	.62	.72	.66	.61	.70	.65	.60	.68	.63	.59	.57
5.0	.69	.61	.55	.68	.60	.54	.66	.59	.54	.64	.58	.53	.62	.57	.53	.51
6.0	.63	.54	.48	.62	.54	.48	.60	.53	.48	.58	.52	.47	.57	.51	.47	.45
7.0	.57	.49	.43	.56	.49	.43	.55	.48	.43	.54	.47	.43	.52	.47	.42	.41
8.0	.53	.45	.39	.52	.44	.39	.51	.44	.39	.49	.43	.39	.48	.43	.38	.37
9.0	.48	.41	.36	.48	.41	.36	.47	.40	.35	.46	.40	.35	.45	.39	.35	.33
10.0	.45	.38	.33	.44	.37	.33	.43	.37	.32	.43	.37	.32	.42	.36	.32	.30



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WEC AND CCEC

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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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.262	.149	.047	.255	.146	.046	.242	.139	.044	.230	.133	.043	.219	.127	.041	
2.0	.251	.138	.042	.245	.135	.042	.234	.130	.040	.223	.125	.039	.214	.121	.038	
3.0	.236	.126	.038	.231	.124	.037	.221	.120	.036	.212	.116	.036	.203	.113	.035	
4.0	.221	.115	.034	.217	.113	.034	.208	.110	.033	.200	.107	.032	.192	.104	.032	
5.0	.207	.106	.031	.203	.104	.030	.195	.102	.030	.188	.099	.030	.181	.097	.029	
6.0	.194	.097	.028	.191	.096	.028	.184	.094	.027	.177	.092	.027	.171	.090	.027	
7.0	.182	.090	.026	.179	.089	.025	.173	.087	.025	.167	.086	.025	.162	.084	.025	
8.0	.172	.084	.024	.169	.083	.023	.163	.082	.023	.158	.080	.023	.153	.079	.023	
9.0	.162	.078	.022	.159	.078	.022	.154	.076	.022	.150	.075	.021	.145	.074	.021	
10.0	.153	.073	.020	.151	.073	.020	.146	.072	.020	.142	.071	.020	.138	.069	.020	

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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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.177	.157	.138	.151	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.062	.129	.087	.054	.089	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.143	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.136	.081	.042	.117	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.035	.111	.064	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
8.0	.123	.068	.030	.106	.059	.027	.073	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.097	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

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γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity:53.0%  
 Test Distance:5.780m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

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SPEC.:3000K	DIM.: L230mm*W230mm*H76mm	
MFR.: E-LITE LIGHTING CO.,LTD.		

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	21.7	23.1	22.0	23.3	23.5	21.8	23.1	22.0	23.3	23.5
3H	22.4	23.7	22.7	23.9	24.1	22.5	23.7	22.7	23.9	24.2
4H	22.6	23.8	22.9	24.1	24.3	22.7	23.9	23.0	24.1	24.4
6H	22.8	23.9	23.1	24.2	24.5	22.8	24.0	23.2	24.2	24.5
8H	22.8	23.9	23.2	24.2	24.5	22.9	24.0	23.2	24.2	24.5
12H	22.9	23.9	23.2	24.2	24.5	22.9	23.9	23.3	24.2	24.5
4H 2H	22.1	23.3	22.4	23.5	23.8	22.1	23.3	22.4	23.5	23.8
3H	22.9	24.0	23.3	24.3	24.6	23.0	24.0	23.3	24.3	24.6
4H	23.3	24.2	23.6	24.5	24.9	23.3	24.3	23.7	24.6	24.9
6H	23.5	24.4	23.9	24.7	25.1	23.6	24.4	24.0	24.8	25.1
8H	23.6	24.4	24.0	24.8	25.1	23.7	24.4	24.1	24.8	25.2
12H	23.7	24.4	24.1	24.8	25.2	23.7	24.4	24.1	24.8	25.2
8H 4H	23.4	24.2	23.8	24.5	24.9	23.4	24.2	23.9	24.6	25.0
6H	23.8	24.4	24.2	24.8	25.2	23.8	24.5	24.3	24.9	25.3
8H	23.9	24.5	24.4	24.9	25.3	24.0	24.5	24.4	24.9	25.4
12H	24.0	24.5	24.5	25.0	25.4	24.1	24.5	24.5	25.0	25.5
12H 4H	23.4	24.1	23.8	24.5	24.9	23.4	24.1	23.9	24.5	24.9
6H	23.8	24.4	24.2	24.8	25.2	23.8	24.4	24.3	24.8	25.3
8H	24.0	24.4	24.4	24.9	25.4	24.0	24.5	24.5	24.9	25.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.5					+ 0.4 / - 0.5				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.7 / - 0.8					+ 0.7 / - 0.8				

CIE Pub.117 Corrected 3251 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.1)

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 Humidity:53.0%  
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 Remarks:

UTILIZATION FACTORS TABLE

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SPEC.:3000K	DIM.: L230mm*W230mm*H76mm	
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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	65	54	48	64	54	48	63	53	48	42
0.80	75	64	58	74	64	58	72	63	57	51
1.00	83	73	67	81	72	66	79	73	66	60
1.25	89	80	74	88	80	74	85	78	73	67
1.50	94	85	79	92	84	79	89	83	78	71
2.00	99	92	87	98	91	86	94	89	85	78
2.50	103	96	91	101	95	90	97	92	88	81
3.00	105	100	95	103	98	94	100	95	92	84
4.00	109	104	100	106	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

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ISOCANDELA DIAGRAM

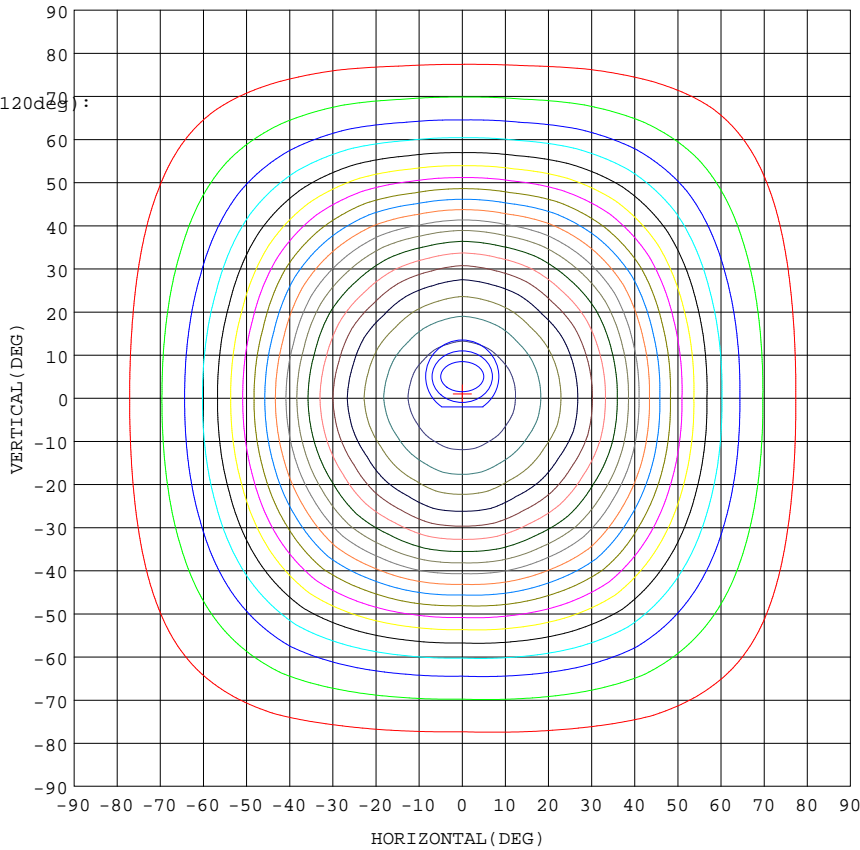
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Conical surface Flux(90deg):

2163.2 lm  
%lum = 66.5%  
%lamp = 66.5%

Conical surface Flux(120deg):

2861.4 lm  
%lum = 88.0%  
%lamp = 88.0%



1. AVG=1596, MIN=1579
2. AVG=1590, MIN=1556
3. AVG=1582, MIN=1528

I<sub>max</sub>:1612(H0.0,V1.0)  
(At:C=105.0,Gamma=0.0)  
UNIT: cd

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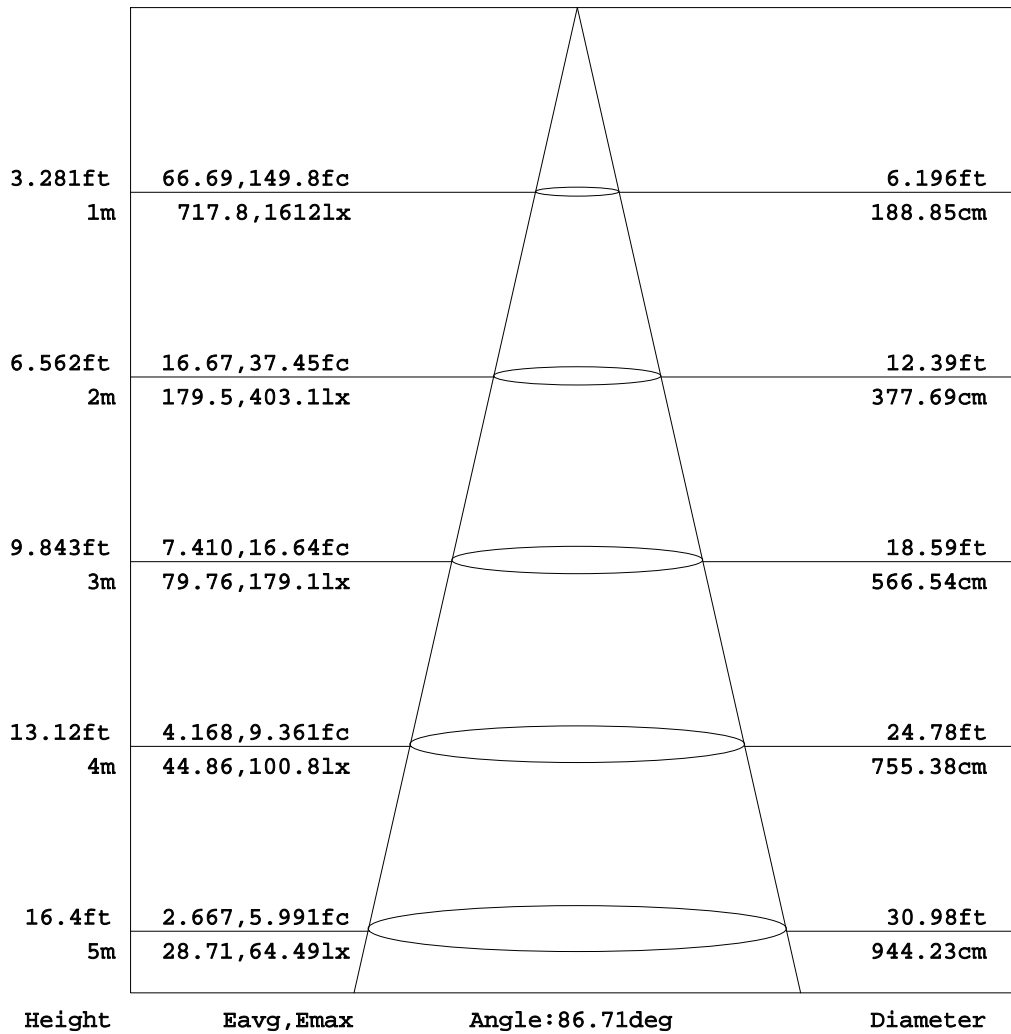
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AAI Figure

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Flux out:2103 lm



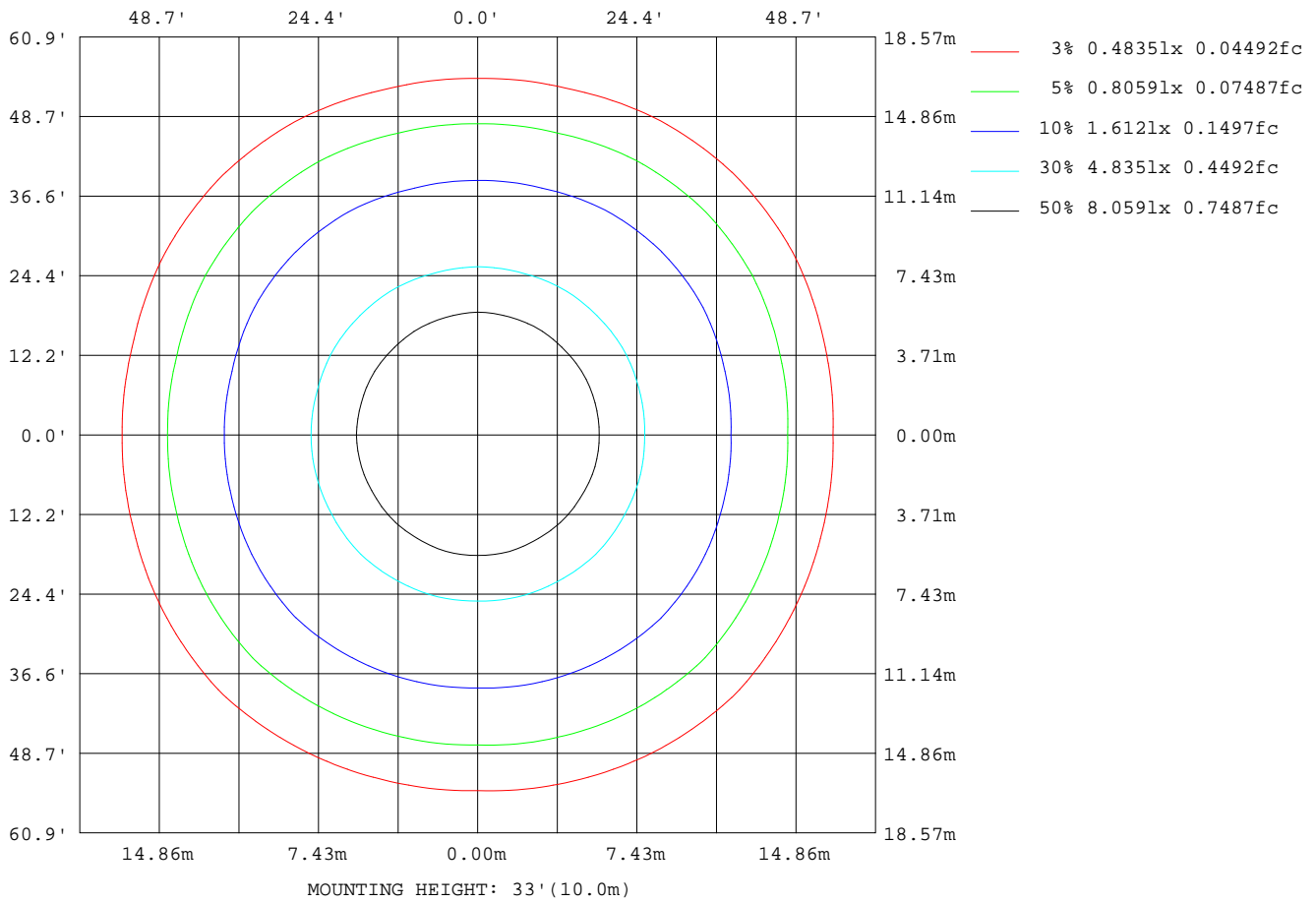
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

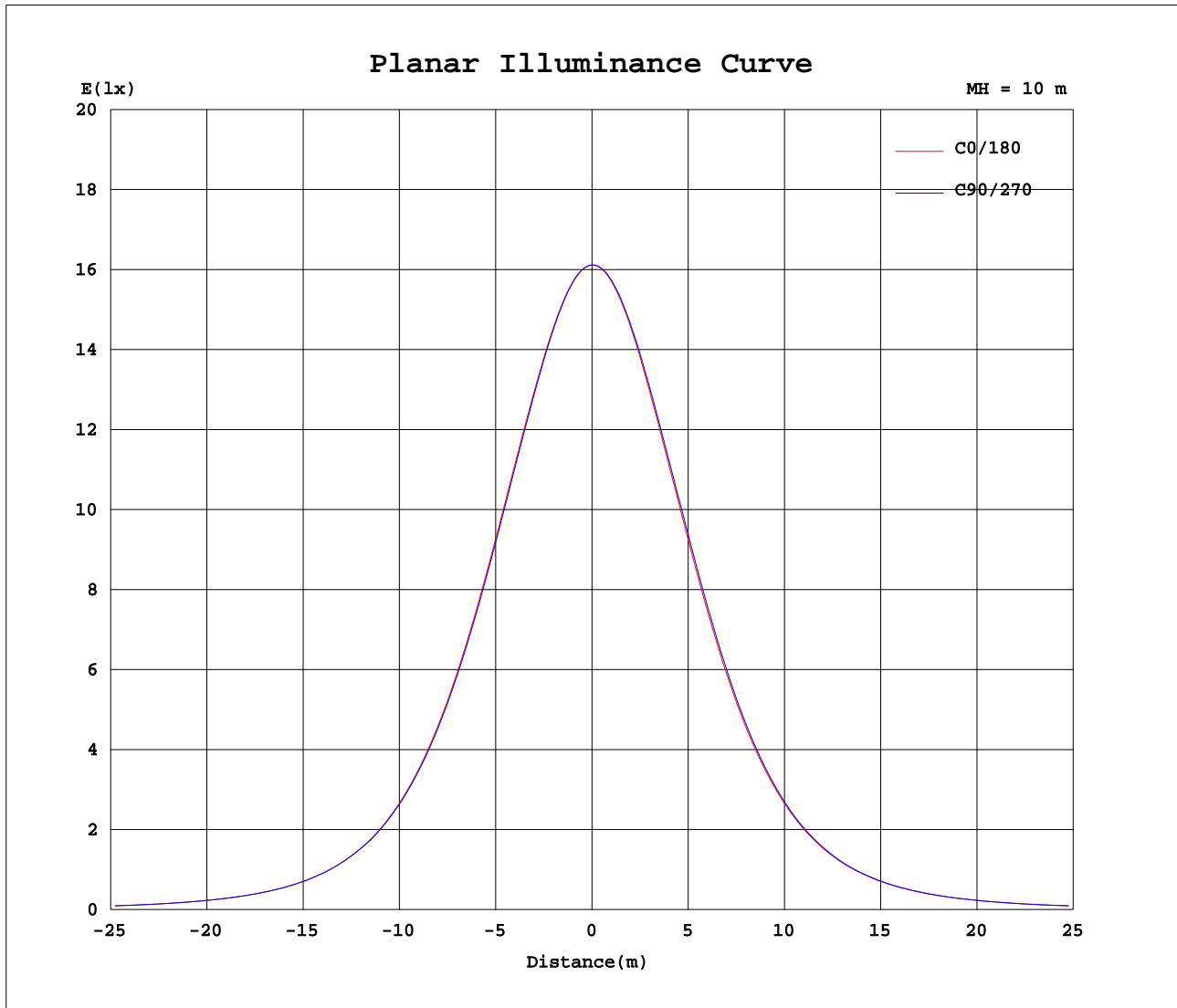
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Planar Illuminance Curve



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## Photometric Data Table [cd]

G/C	0.0	15.0	30.0	45.0	60.0	75.0	90.0	105.0	120.0	135.0
0.0	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612
3.0	1606	1606	1605	1606	1605	1606	1605	1606	1605	1606
6.0	1591	1591	1589	1590	1589	1590	1589	1590	1589	1591
9.0	1567	1567	1564	1564	1563	1564	1563	1565	1564	1565
12.0	1536	1535	1531	1530	1529	1531	1531	1532	1530	1531
15.0	1498	1496	1491	1489	1488	1491	1491	1492	1488	1490
18.0	1454	1452	1444	1442	1440	1445	1446	1446	1441	1441
21.0	1405	1402	1392	1389	1389	1387	1394	1395	1387	1387
24.0	1349	1350	1334	1333	1328	1339	1337	1340	1328	1330
27.0	1285	1285	1270	1270	1264	1275	1273	1276	1276	1265
30.0	1214	1215	1201	1202	1195	1204	1201	1204	1192	1195
33.0	1134	1136	1125	1128	1120	1126	1121	1125	1116	1120
36.0	1046	1051	1043	1050	1039	1042	1034	1040	1033	1040
39.0	952.0	958.2	955.9	965.6	953.6	951.7	941.1	948.2	946.1	955.4
42.0	852.7	861.4	864.2	877.3	863.5	857.0	844.1	852.5	854.3	866.7
45.0	752.0	763.0	769.9	786.9	771.2	761.1	745.3	755.7	760.9	776.1
48.0	653.3	665.4	676.3	695.2	679.0	665.7	648.7	659.9	668.5	684.9
51.0	562.6	571.8	588.5	605.4	591.2	574.3	560.0	568.0	581.7	595.6
54.0	475.1	484.7	501.7	519.2	506.6	488.8	474.4	482.3	496.3	510.3
57.0	396.3	405.3	421.9	438.4	427.2	410.0	396.9	404.0	417.7	430.5
60.0	326.7	334.9	349.8	364.9	354.9	339.9	328.0	334.5	346.4	357.9
63.0	266.1	273.4	286.1	299.1	290.8	278.0	267.7	273.2	283.2	292.9
66.0	214.3	220.5	230.7	241.5	234.7	224.6	215.8	220.3	228.0	236.1
69.0	170.3	175.4	183.1	191.7	186.3	178.6	171.6	175.1	180.7	186.9
72.0	133.1	137.1	142.8	149.2	145.2	139.6	134.0	136.7	140.3	144.8
75.0	101.8	105.1	108.6	113.7	110.3	106.7	102.2	104.3	106.3	109.5
78.0	75.06	77.51	79.85	83.29	80.85	78.42	75.04	76.44	77.43	79.48
81.0	52.26	53.92	55.45	57.54	55.94	54.20	51.79	52.54	52.96	54.02
84.0	32.08	33.31	34.05	35.38	34.15	33.20	31.39	31.85	31.67	32.09
87.0	15.02	15.73	15.90	16.37	15.64	15.18	14.08	14.19	13.71	13.62
90.0	1.874	1.691	1.431	1.011	0.6592	0.4450	0.4242	0.4222	0.4388	0.4388
G/C	150.0	165.0	180.0	195.0	210.0	225.0	240.0	255.0	270.0	285.0
0.0	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612
3.0	1606	1607	1608	1607	1608	1608	1609	1609	1609	1609
6.0	1591	1592	1594	1593	1595	1595	1596	1596	1597	1596
9.0	1565	1568	1570	1570	1572	1571	1573	1573	1575	1573
12.0	1531	1535	1539	1538	1540	1539	1543	1543	1546	1544
15.0	1490	1495	1500	1498	1500	1498	1503	1505	1509	1506
18.0	1441	1448	1454	1452	1453	1451	1458	1461	1467	1463
21.0	1387	1396	1403	1400	1401	1397	1405	1410	1418	1413
24.0	1327	1340	1347	1341	1344	1338	1347	1353	1363	1357
27.0	1261	1274	1282	1276	1279	1273	1285	1288	1301	1293
30.0	1190	1201	1209	1203	1208	1203	1214	1216	1229	1221
33.0	1113	1121	1128	1123	1131	1127	1138	1136	1148	1142
36.0	1030	1035	1041	1036	1048	1046	1055	1049	1060	1055
39.0	943.8	943.9	946.8	944.5	959.9	960.6	966.5	956.2	964.0	961.1
42.0	852.7	848.5	849.7	848.4	868.4	871.0	874.7	858.9	864.5	863.5
45.0	759.9	752.1	751.1	750.6	774.8	779.0	780.5	760.0	763.4	763.6
48.0	667.7	656.8	653.8	655.1	680.9	687.0	686.0	663.0	663.9	665.5
51.0	581.4	564.8	561.0	566.0	589.6	598.4	594.3	572.7	568.8	574.4
54.0	496.3	479.5	474.9	479.8	503.2	513.2	507.4	485.3	481.0	486.6
57.0	417.5	401.3	396.5	401.3	423.0	432.6	426.5	406.0	401.3	407.0
60.0	346.3	331.7	327.0	330.7	350.4	358.5	353.6	334.9	330.9	335.4
63.0	282.8	270.3	266.3	269.7	286.1	293.2	288.8	273.2	269.5	273.6
66.0	227.4	217.5	214.2	216.7	230.1	235.6	232.5	219.6	216.9	220.1
69.0	179.9	172.2	169.6	171.3	181.9	186.0	184.1	174.0	172.2	174.6
72.0	139.3	133.9	131.9	133.1	140.9	144.1	142.9	135.6	134.4	136.3
75.0	105.2	101.5	100.1	100.7	106.6	108.7	108.3	103.2	102.7	103.9
78.0	76.27	73.83	72.96	73.26	77.57	78.97	79.14	75.68	75.59	76.47
81.0	51.79	50.08	49.60	49.93	52.85	53.88	54.29	52.23	52.29	53.08
84.0	30.46	29.48	29.21	29.49	31.45	32.23	32.82	31.77	31.95	32.64
87.0	12.71	12.45	12.56	12.66	13.56	13.90	14.55	14.37	14.67	15.16
90.0	0.4450	0.4450	0.3764	0.3806	0.3806	0.3993	0.3910	0.4076	0.5615	1.108
G/C	300.0	315.0	330.0	345.0						
0.0	1612	1612	1612	1612						
3.0	1609	1608	1608	1607						
6.0	1596	1594	1594	1593						
9.0	1574	1571	1571	1569						
12.0	1543	1539	1540	1538						
15.0	1505	1500	1501	1500						
18.0	1460	1454	1456	1456						
21.0	1409	1402	1405	1405						

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Cao Chengpei  
 Test Date: 2014-08-30

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity: 53.0%  
 Test Distance: 5.780m [K=1.0000]  
 Remarks:

## Photometric Data Table [cd]

24.0	1354	1345	1350	1349
27.0	1292	1282	1288	1286
30.0	1223	1213	1220	1215
33.0	1147	1140	1145	1138
36.0	1065	1060	1064	1052
39.0	976.0	974.6	976.7	960.6
42.0	883.5	885.4	885.4	864.3
45.0	788.2	792.6	791.3	765.7
48.0	692.6	699.8	696.4	668.7
51.0	599.9	609.5	603.7	577.8
54.0	511.9	522.9	515.8	490.1
57.0	430.3	440.8	433.8	410.1
60.0	356.7	365.3	359.6	338.3
63.0	291.3	299.0	294.0	276.3
66.0	234.7	240.7	236.8	222.4
69.0	186.0	190.4	187.7	176.6
72.0	144.8	148.0	146.1	138.0
75.0	110.2	112.2	111.3	105.3
78.0	81.03	82.18	81.88	77.72
81.0	56.17	57.05	56.83	54.23
84.0	34.70	35.21	35.26	33.63
87.0	16.33	16.57	16.83	16.06
90.0	1.587	2.001	2.265	2.471

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Cao Chengpei  
 Test Date: 2014-08-30

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity: 53.0%  
 Test Distance: 5.780m [K=1.0000]  
 Remarks: