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Nata

Client:

LumCAT: 1655-S

Luminaire: 92.70.046.00

Report No: NT2018040601

Test No: nata-0100

LampCAT: CREE CXA1512

Lamp flux(lm): 1248.2

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 35.5000

Current(A): 0.3500

Power (W): 12.4250

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

Photometric Results

Lumens(lm): 1094.00, Efficiency(%): 87.64% , Luminous Efficacy(lm/W): 88.05

Central intensity(cd): 2422.482, Maximum intensity(cd): 2422.482

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=37.0

[C90/270]Total=37.0

Field angle(10%Imax): [C0/180]Total=66.8

[C90/270]Total=66.8

Maximum s/h(1/2): C0_180=0.61 C90_270=0.61

Maximum s/h(1/4): C0_180=0.61 C90_270=0.61

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.72%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.251%

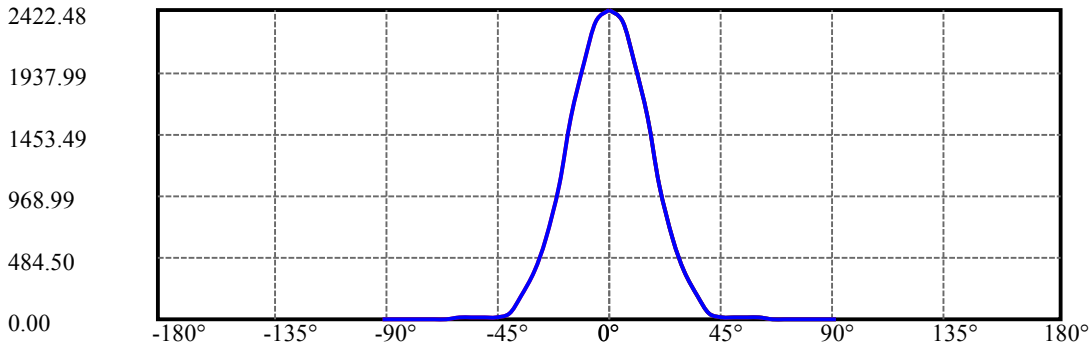
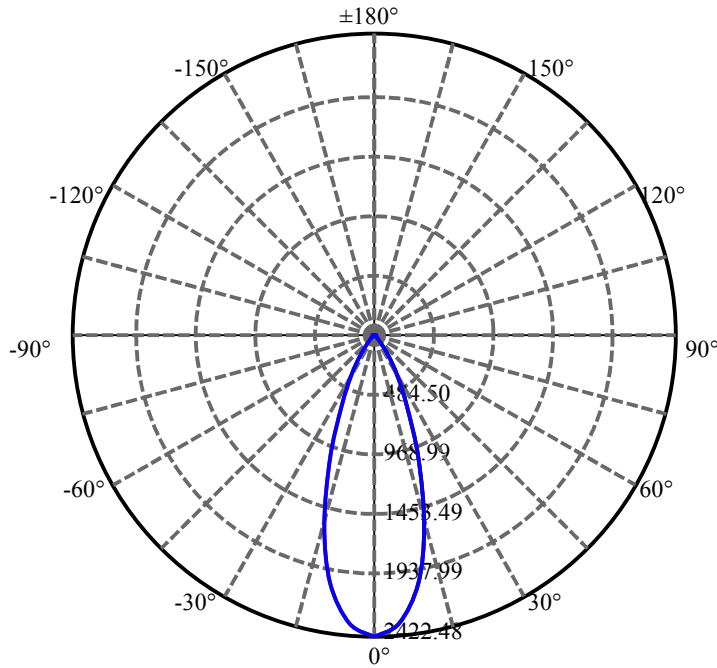
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2422.482	14.487	14.487	1.161%	1.324%
5.0	2326.477	111.144	125.63	8.904%	11.484%
10.0	2018.299	192.108	317.738	15.390%	29.044%
15.0	1577.572	223.808	541.546	17.930%	49.502%
20.0	1056.560	198.078	739.623	15.869%	67.607%
25.0	635.103	147.123	886.747	11.787%	81.056%
30.0	378.003	103.599	990.346	8.300%	90.525%
35.0	179.374	56.395	1046.741	4.518%	95.680%
40.0	37.872	13.344	1060.084	1.069%	96.900%
45.0	13.351	5.175	1065.259	.415%	97.373%
50.0	10.254	4.306	1069.565	.345%	97.767%
55.0	8.541	3.835	1073.4	.307%	98.117%
60.0	7.577	3.597	1076.997	.288%	98.446%
65.0	6.806	3.381	1080.378	.271%	98.755%
70.0	6.318	3.254	1083.632	.261%	99.052%
75.0	6.022	3.188	1086.82	.255%	99.344%
80.0	5.574	3.009	1089.829	.241%	99.619%
85.0	5.258	2.871	1092.701	.230%	99.881%
90.0	4.735	1.298	1093.998	.104%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	990.35	79.34%	90.53%
0-40	1060.08	84.93%	96.90%
0-60	1077.00	86.28%	98.45%
0-90	1092.70	87.54%	99.88%
0-120	1092.70	87.54%	99.88%
0-180	1094.00	87.64%	100.00%
60-90	19.30	1.55%	1.76%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.61	875.20	70.12%	80.00%

ZONAL LUMEN SUMMARY

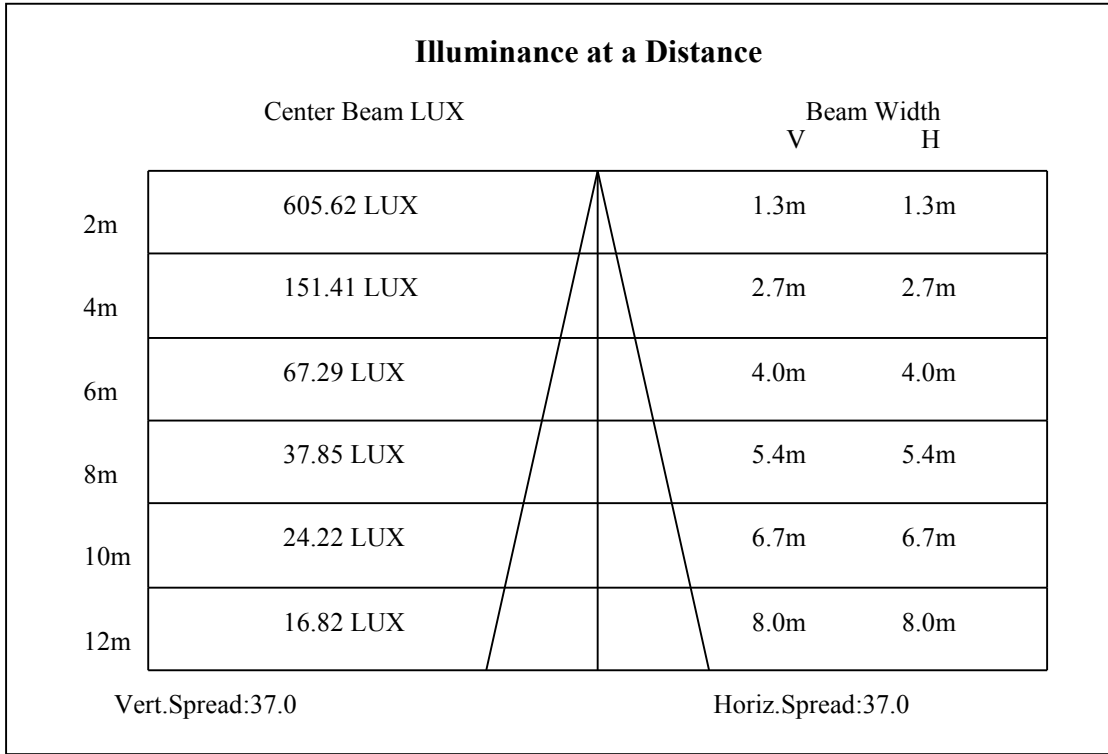
0-10	317.74
10-20	421.89
20-30	250.72
30-40	69.74
40-50	9.48
50-60	7.43
60-70	6.64
70-80	6.20
80-90	2.87
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

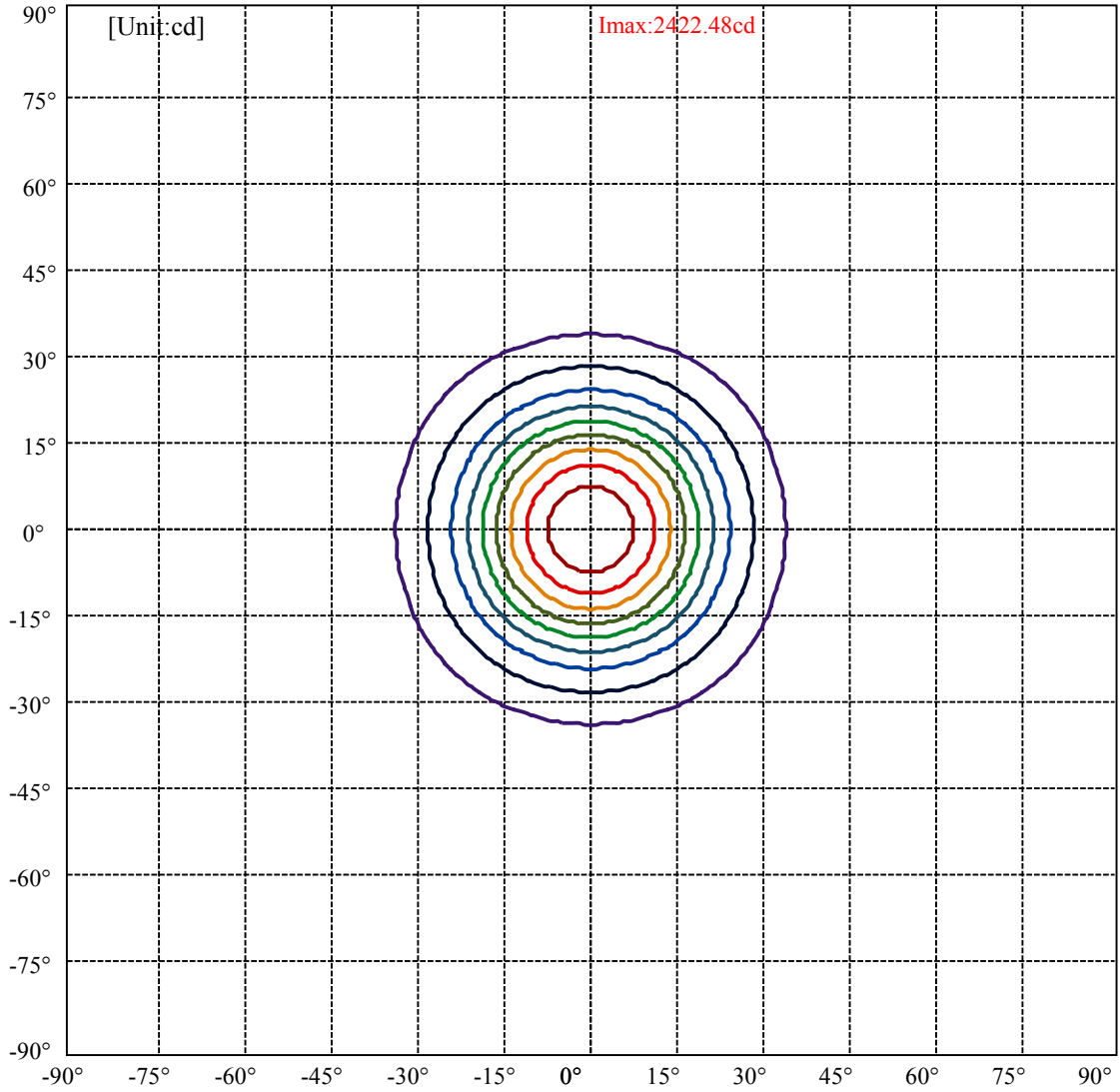


C0(Max): ———
 C0/C180: ———
 C90/C270: ———

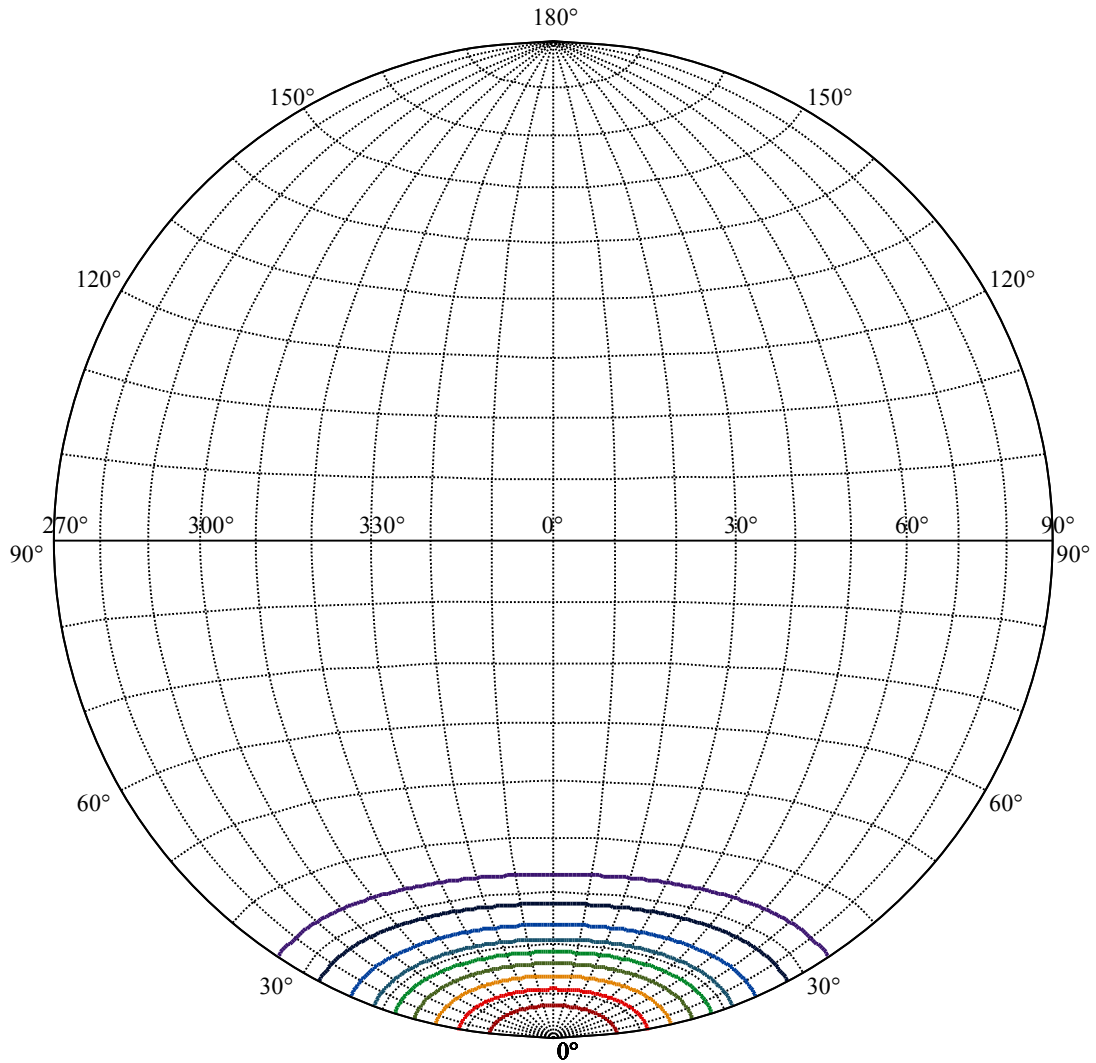
Field angle(10%Imax):C0/180Left:33.4 Right:33.4
 :C90/270Left:33.4 Right:33.4

Beam Angle(50%Imax):C0/180Left:18.5 Right:18.5
 :C90/270Left:18.5 Right:18.5





(10%Imax) 242.248	—
(20%Imax) 484.496	—
(30%Imax) 726.745	—
(40%Imax) 968.993	—
(50%Imax) 1211.24	—
(60%Imax) 1453.49	—
(70%Imax) 1695.74	—
(80%Imax) 1937.99	—
(90%Imax) 2180.23	—



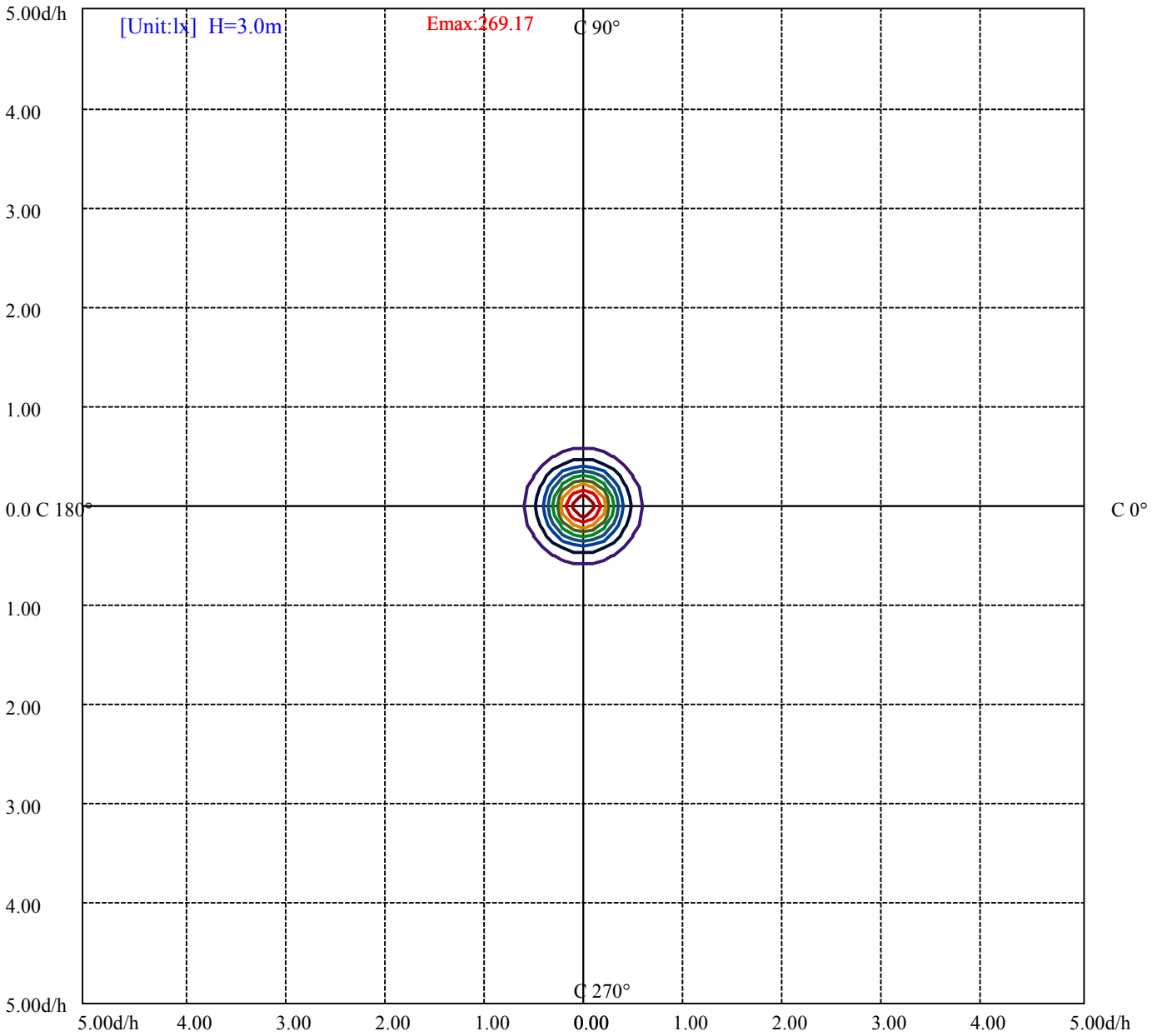
House

[Unit:cd]

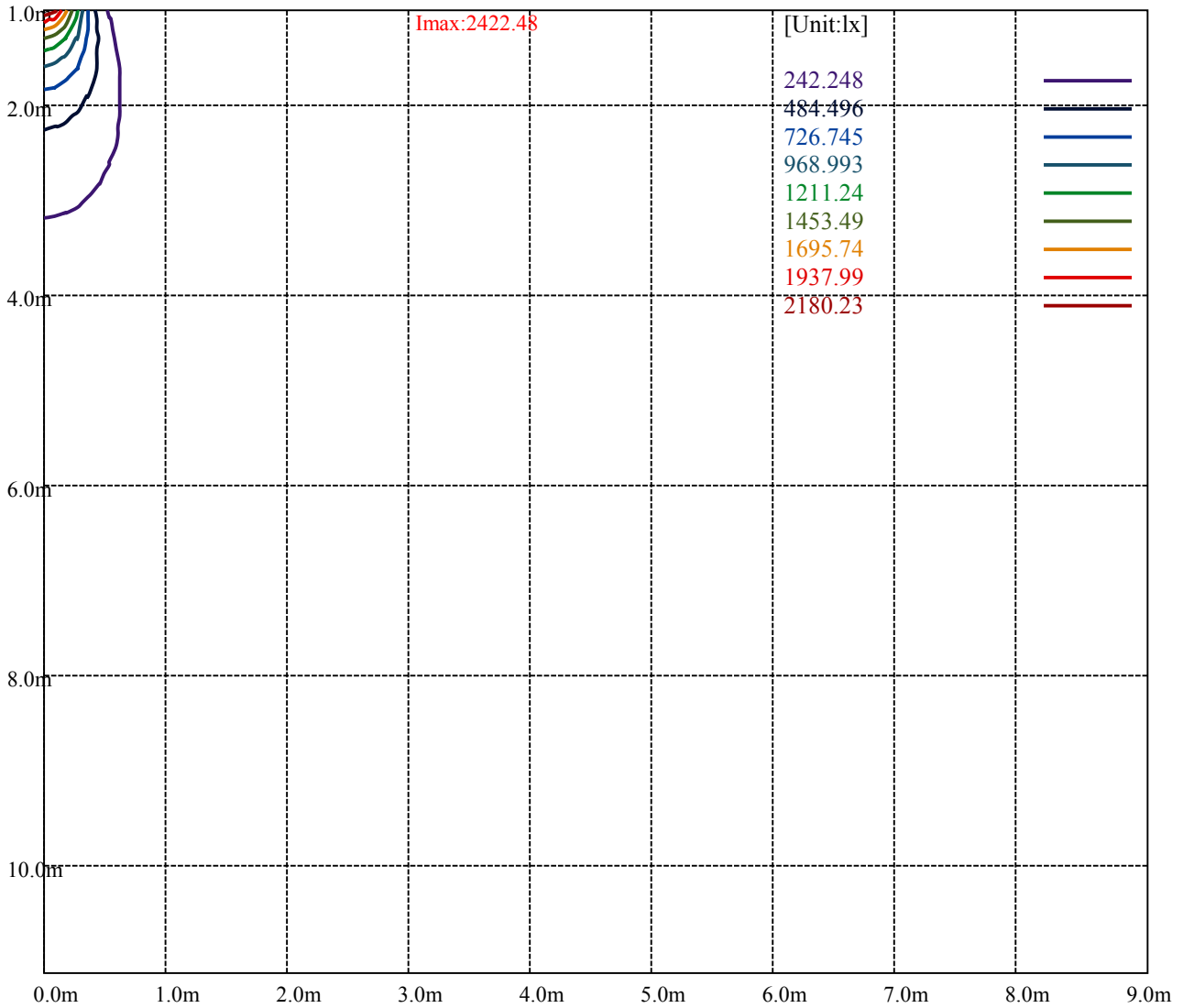
Road

Imax:2422.48

(10%Imax)	242.248	—
(20%Imax)	484.496	—
(30%Imax)	726.745	—
(40%Imax)	968.993	—
(50%Imax)	1211.24	—
(60%Imax)	1453.49	—
(70%Imax)	1695.74	—
(80%Imax)	1937.99	—
(90%Imax)	2180.23	—



(10%Emax) 26.91644	—
(20%Emax) 53.83289	—
(30%Emax) 80.74934	—
(40%Emax) 107.6658	—
(50%Emax) 134.5822	—
(60%Emax) 161.4989	—
(70%Emax) 188.4156	—
(80%Emax) 215.3311	—
(90%Emax) 242.2478	—



Luminance Table

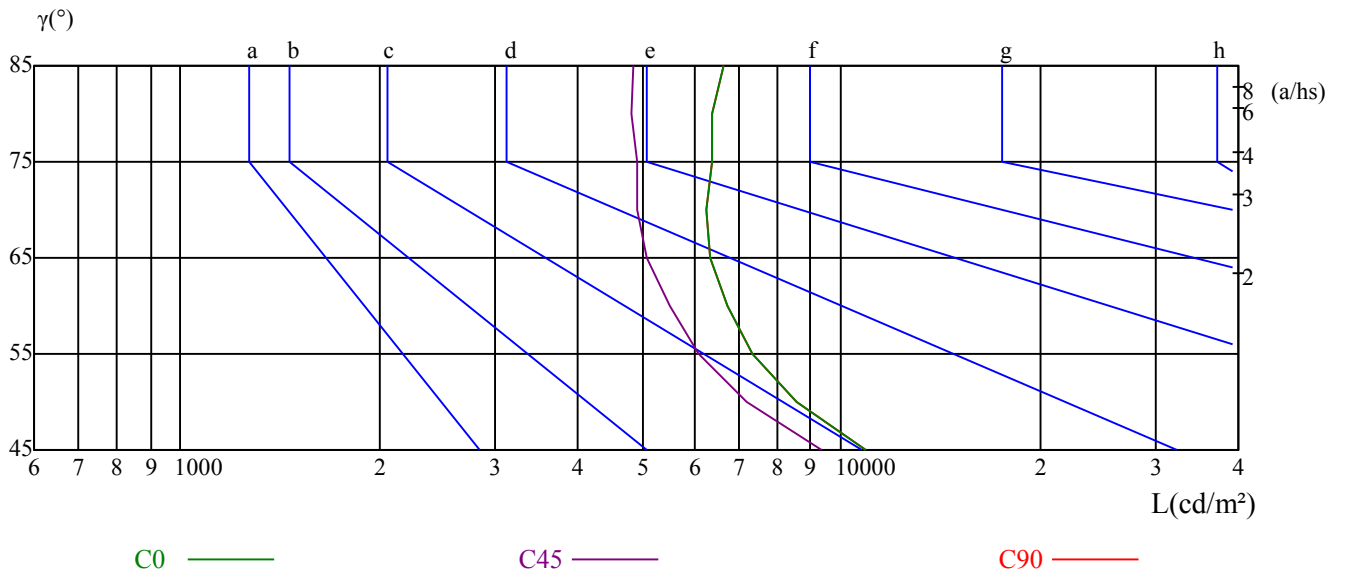
γ	45	50	55	60	65	70	75	80	85
C0	10927	8563	7337	6755	6356	6244	6372	6399	6651
C45	9349	7217	6088	5514	5098	4913	4909	4813	4864
C90	10927	8563	7337	6755	6356	6244	6372	6399	6651

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15728	15728	15728	22721	22721	22721	58914	58914	58914

Glare Table

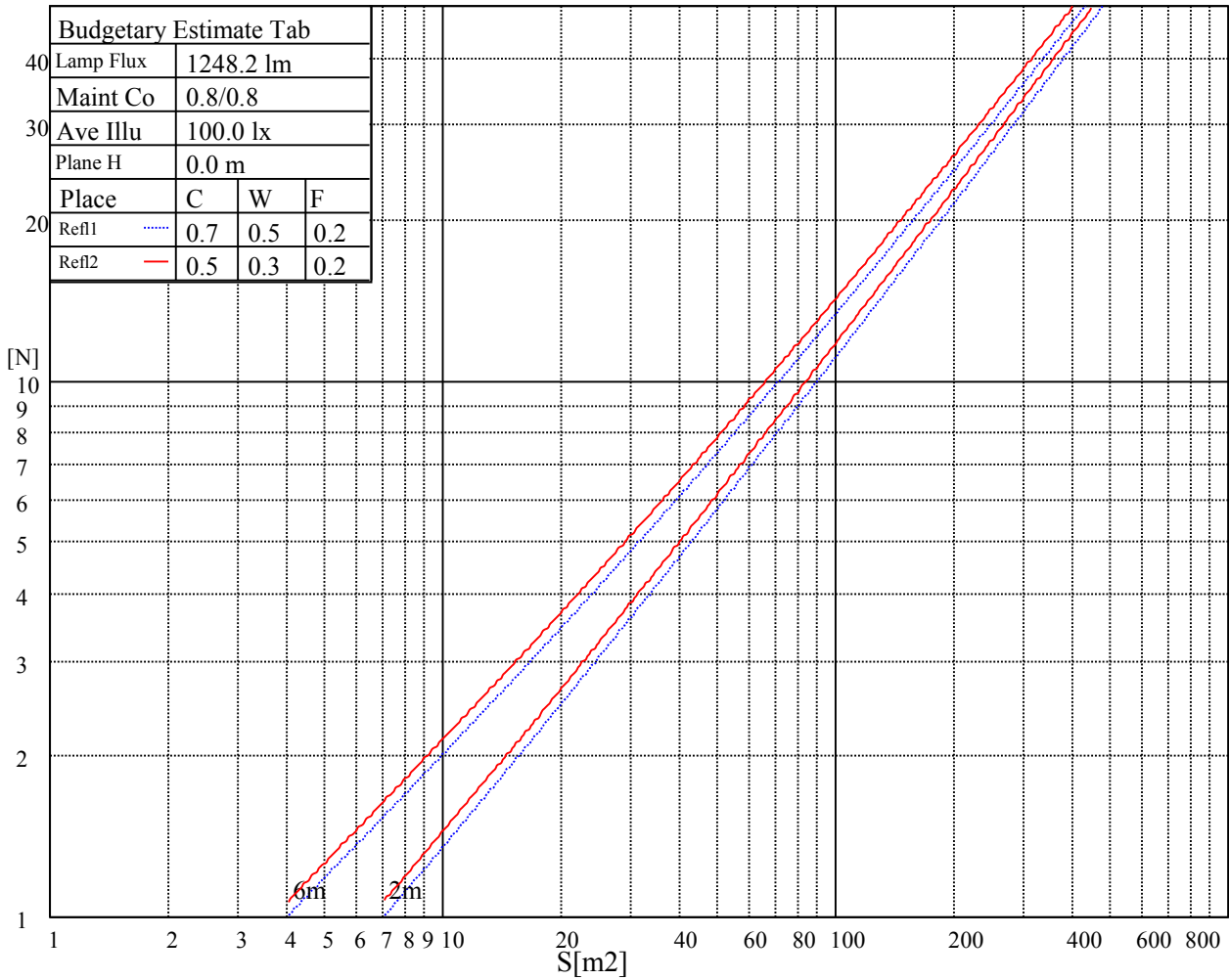
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

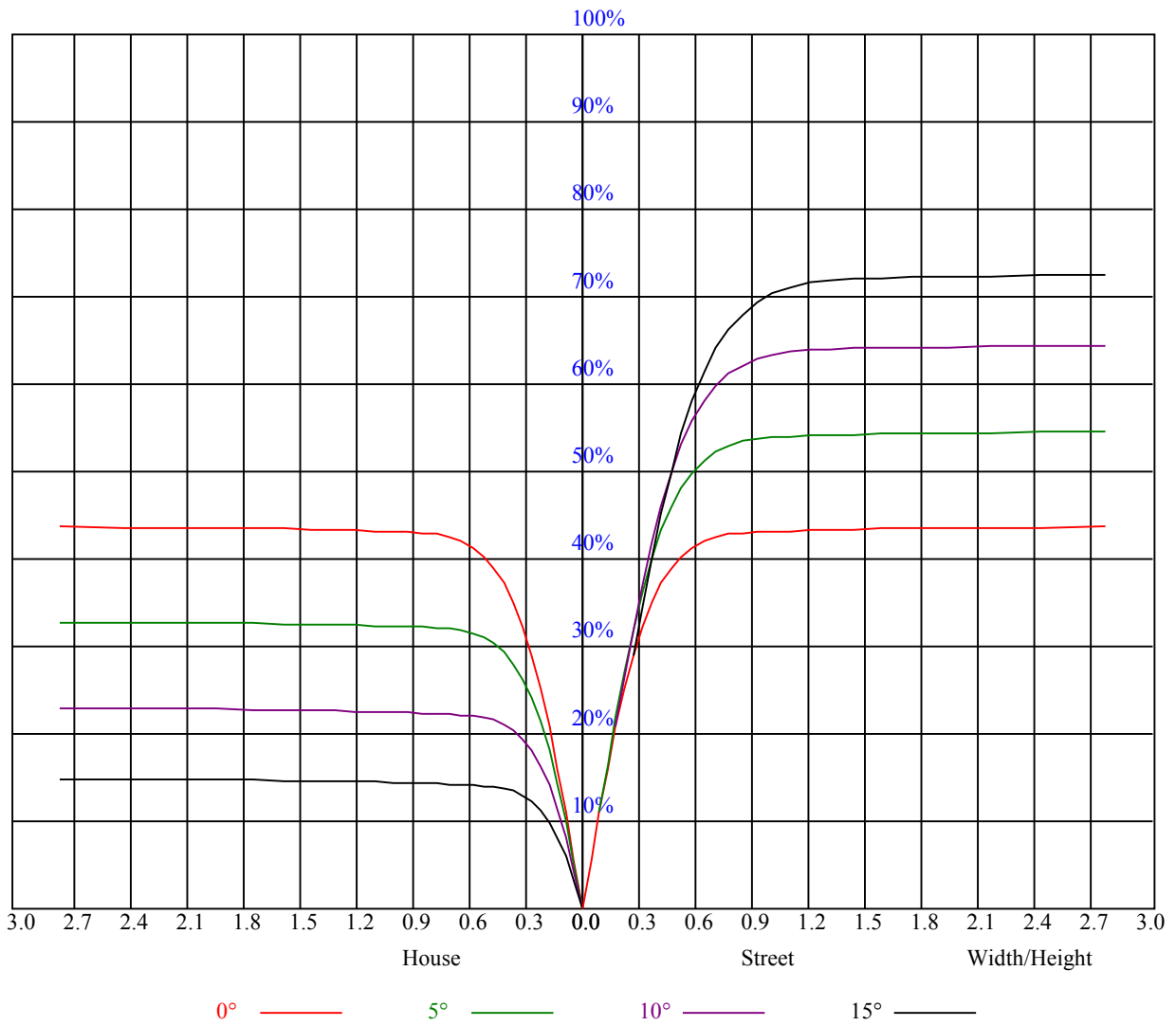


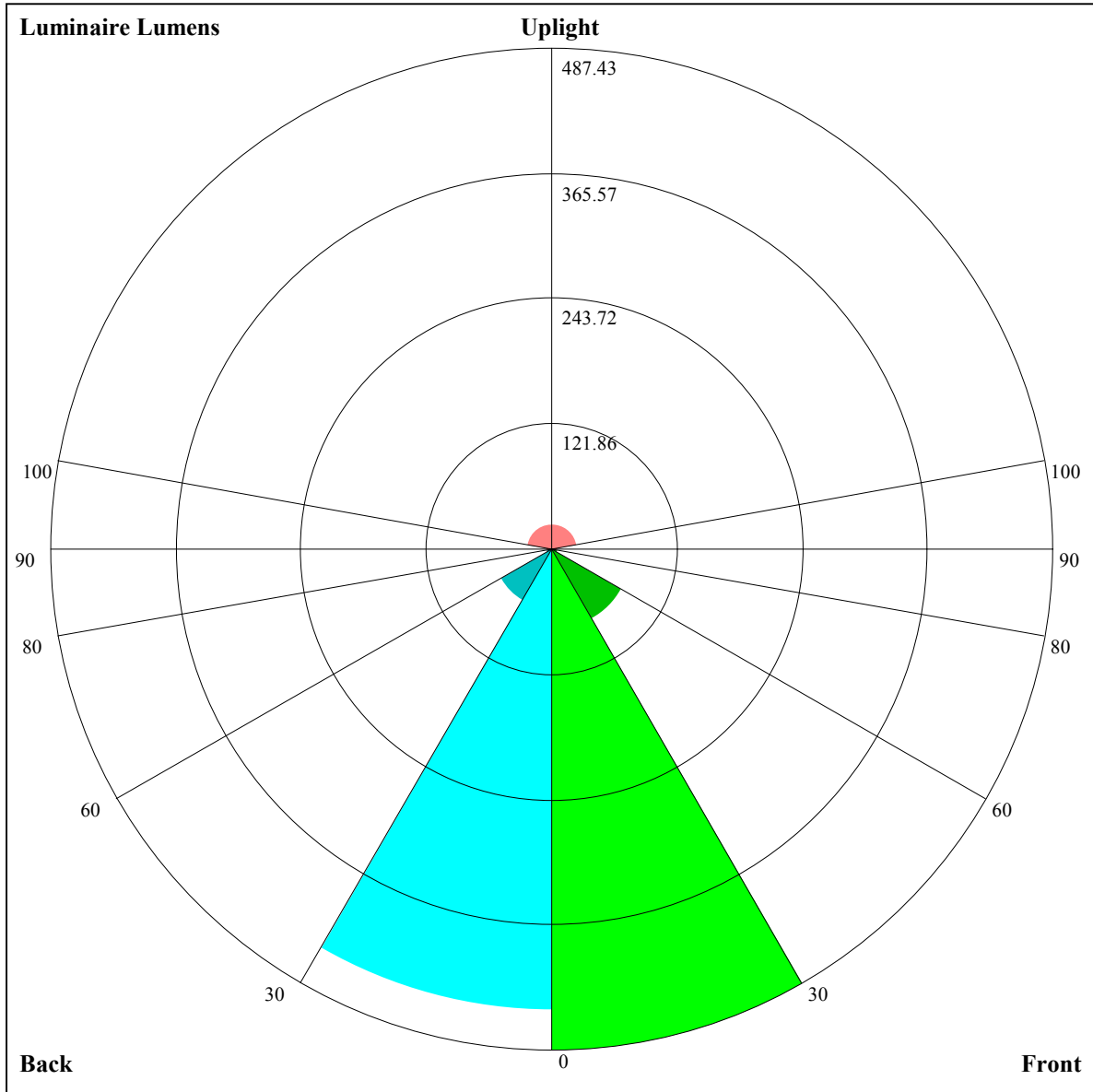
Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	19.83	20.76	20.19	21.07	21.38	18.23	19.15	18.59	19.46	19.78
	3H	19.75	20.58	20.14	20.91	21.26	18.22	19.04	18.60	19.38	19.73
	4H	19.76	20.53	20.16	20.88	21.25	18.28	19.05	18.69	19.40	19.77
	6H	19.85	20.54	20.27	20.92	21.32	18.43	19.13	18.85	19.51	19.91
	8H	19.89	20.56	20.31	20.94	21.35	18.51	19.17	18.93	19.56	19.97
	12H	19.96	20.58	20.38	20.98	21.40	18.61	19.24	19.03	19.63	20.05
4H	2H	19.55	20.31	19.95	20.67	21.04	17.98	18.74	18.38	19.09	19.46
	3H	19.50	20.14	19.93	20.54	20.96	18.03	18.67	18.45	19.07	19.48
	4H	19.61	20.16	20.05	20.59	21.04	18.22	18.78	18.66	19.20	19.65
	6H	19.76	20.25	20.23	20.70	21.15	18.47	18.96	18.94	19.41	19.86
	8H	19.89	20.34	20.38	20.80	21.28	18.65	19.10	19.14	19.56	20.04
	12H	20.07	20.49	20.56	20.94	21.46	18.87	19.29	19.36	19.74	20.27
8H	4H	19.51	19.96	20.00	20.42	20.90	18.18	18.63	18.67	19.09	19.57
	6H	19.75	20.12	20.26	20.60	21.11	18.55	18.92	19.06	19.40	19.91
	8H	20.02	20.33	20.55	20.85	21.35	18.88	19.19	19.42	19.72	20.21
	12H	20.31	20.55	20.86	21.06	21.59	19.24	19.47	19.78	19.99	20.52
12H	4H	19.48	19.90	19.97	20.35	20.87	18.17	18.58	18.66	19.04	19.56
	6H	19.80	20.10	20.33	20.63	21.13	18.62	18.93	19.16	19.45	19.95
	8H	20.07	20.30	20.61	20.82	21.34	18.97	19.20	19.52	19.72	20.25
Variation with the observer position at spacings:											
S = 1.0H	5.3/-5.2					5.3/-5.2					
S = 1.5H	7.4/-4.0					7.4/-4.0					
S = 2.0H	8.9/-3.3					8.9/-3.3					
Standard tables:	BK2					BK2					
Uncorrected UGR	0.1					0.1					

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.91	0.91	0.91	0.89
1	0.98	0.96	0.93	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.82
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.81	0.80	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.75
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.76	0.73	0.71	0.75	0.73	0.70	0.69
6	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
8	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=487.43,FM=78.18,FH=6.75,FVH=2.9

BL=448.99,BM=58.43,BH=6.41,BVH=2.76

UL=5.17,UH=24.58

BUG Rating:B1-U2-G0

Intensity data(cd)

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2418.63	2381.74	2135.09	1722.71	1254.74	750.42	464.68	284.09	66.67
45.0	2422.48	2372.93	2110.86	1746.94	1210.69	741.06	464.68	278.03	62.87
90.0	2424.13	2300.81	2001.30	1533.87	991.62	598.63	355.33	154.54	26.92
135.0	2424.68	2354.76	2032.68	1594.43	1024.05	605.07	350.71	146.45	33.20
180.0	2418.63	2278.23	1915.96	1428.71	921.04	561.08	308.21	122.94	19.93
225.0	2422.48	2282.64	1912.66	1449.08	927.48	558.05	316.41	118.21	21.69
270.0	2424.13	2327.23	2038.19	1580.12	1065.34	632.60	365.57	155.15	36.72
315.0	2424.68	2313.47	1999.65	1564.70	1057.52	633.92	398.44	175.57	34.96
360.0	2418.63	2381.74	2135.09	1722.71	1254.74	750.42	464.68	284.09	66.67
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	15.53	10.90	9.14	8.04	7.16	6.66	6.33	6.11	5.78
45.0	14.76	10.74	9.03	7.98	7.21	6.66	6.39	6.06	5.67
90.0	13.05	10.30	8.53	7.65	6.88	6.44	6.17	5.62	5.23
135.0	12.55	9.97	8.31	7.38	6.66	6.17	5.84	5.34	5.07
180.0	11.45	9.41	7.98	7.10	6.44	6.00	5.67	5.34	5.12
225.0	12.17	9.80	8.26	7.27	6.44	5.95	5.67	5.12	4.90
270.0	14.09	10.74	8.64	7.71	6.88	6.33	5.95	5.45	5.07
315.0	13.21	10.19	8.42	7.49	6.77	6.33	6.17	5.56	5.23
360.0	15.53	10.90	9.14	8.04	7.16	6.66	6.33	6.11	5.78
C/ γ (°)	90.0								
0.0	4.90								
45.0	4.79								
90.0	4.62								
135.0	4.68								
180.0	4.73								
225.0	4.73								
270.0	4.68								
315.0	4.73								
360.0	4.90								