
Nata

LumCAT: 1408-N	
Luminaire: 92.70.064.00	
Report No: NT2018040917	Voltage(V): 34.4000
Test No: nata-0100	Current(A): 0.3500
LampCAT: SEOUL SAWX10	Power (W): 12.0400
Lamp flux(lm): 1576.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1364.59
Efficiency(%): 86.59%
Lumens(lm)/Power(W): 113.34
Central intensity(cd): 1327.135
Maximum intensity(cd): 1327.135
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=57.2
[C90/270]Total=57.2
Field angle(10%Imax): [C0/180]Total=98.9
[C90/270]Total=98.9
Maximum s/h(1/2): C0_180=0.84 C90_270=0.84
Maximum s/h(1/4): C0_180=0.90 C90_270=0.90
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.01%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.806%

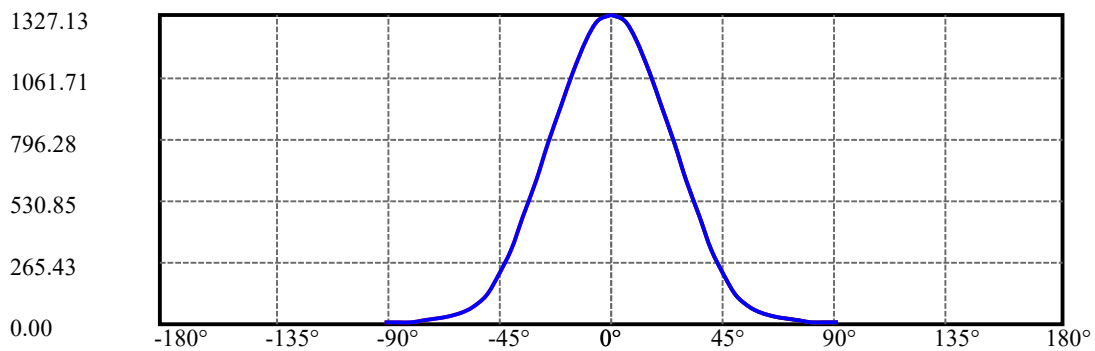
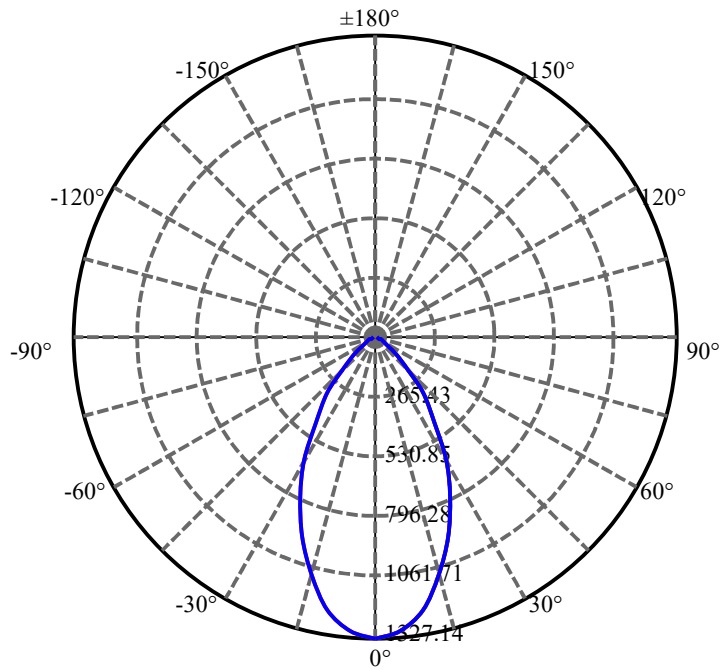
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1327.135	7.937	7.937	.504%	.582%
5.0	1299.675	62.090	70.026	3.940%	5.132%
10.0	1219.155	116.043	186.069	7.363%	13.636%
15.0	1081.604	153.445	339.515	9.736%	24.880%
20.0	939.964	176.219	515.733	11.181%	37.794%
25.0	774.644	179.448	695.182	11.386%	50.945%
30.0	620.038	169.933	865.115	10.783%	63.398%
35.0	461.311	145.035	1010.15	9.203%	74.026%
40.0	325.087	114.540	1124.69	7.268%	82.420%
45.0	204.473	79.252	1203.942	5.029%	88.228%
50.0	123.416	51.822	1255.764	3.288%	92.025%
55.0	75.813	34.040	1289.805	2.160%	94.520%
60.0	50.370	23.911	1313.715	1.517%	96.272%
65.0	34.630	17.204	1330.919	1.092%	97.533%
70.0	24.789	12.768	1343.687	.810%	98.469%
75.0	17.123	9.066	1352.753	.575%	99.133%
80.0	11.617	6.271	1359.024	.398%	99.592%
85.0	7.460	4.074	1363.098	.258%	99.891%
90.0	5.430	1.488	1364.586	.094%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	865.11	54.89%	63.40%
0-40	1124.69	71.36%	82.42%
0-60	1313.72	83.36%	96.27%
0-90	1363.10	86.49%	99.89%
0-120	1363.10	86.49%	99.89%
0-180	1364.59	86.59%	100.00%
60-90	73.29	4.65%	5.37%
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%
0-38.56	1091.67	69.27%	80.00%

ZONAL LUMEN SUMMARY

0-10	186.07
10-20	329.66
20-30	349.38
30-40	259.58
40-50	131.07
50-60	57.95
60-70	29.97
70-80	15.34
80-90	4.07
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:

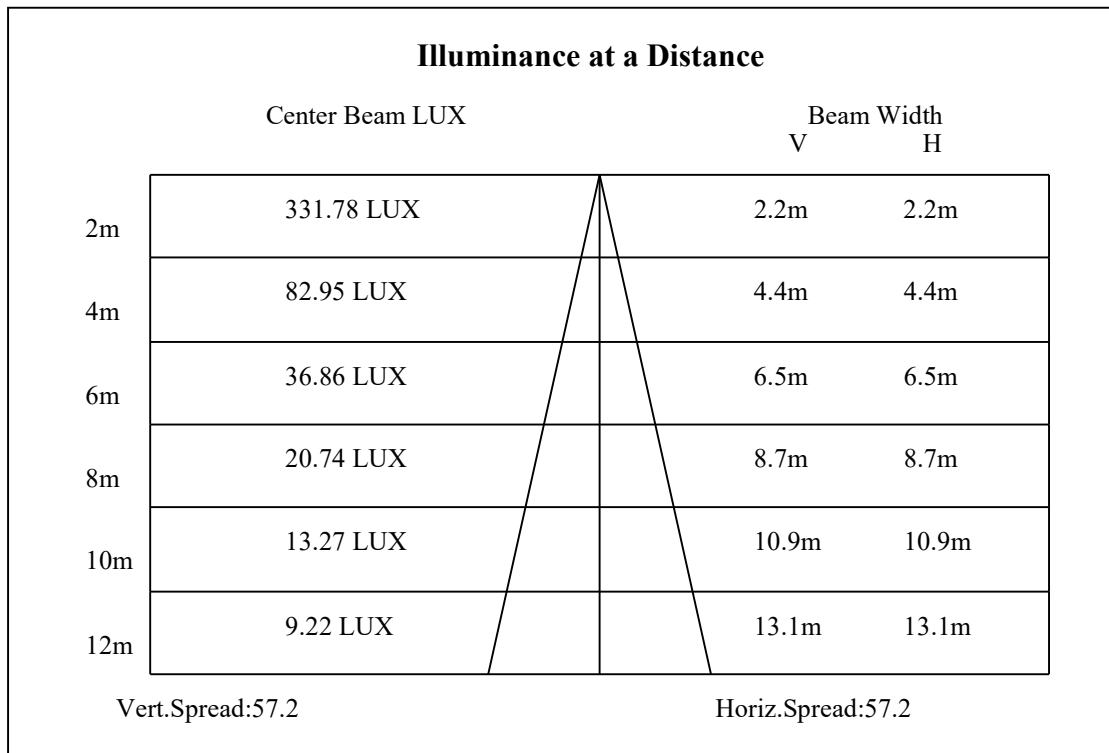
C90/C270:

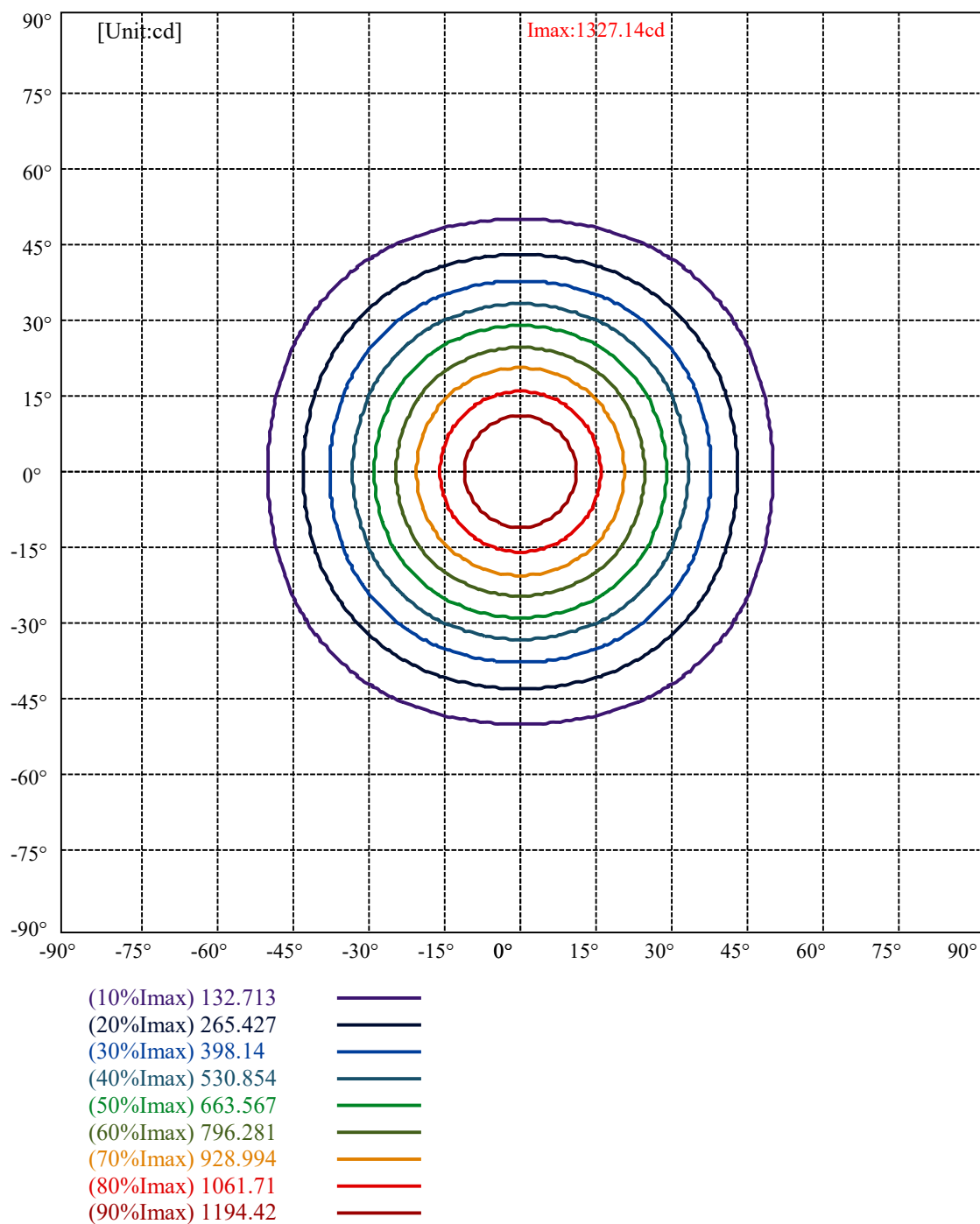
Field angle(10%Imax):C0/180Left:49.4 Right:49.4

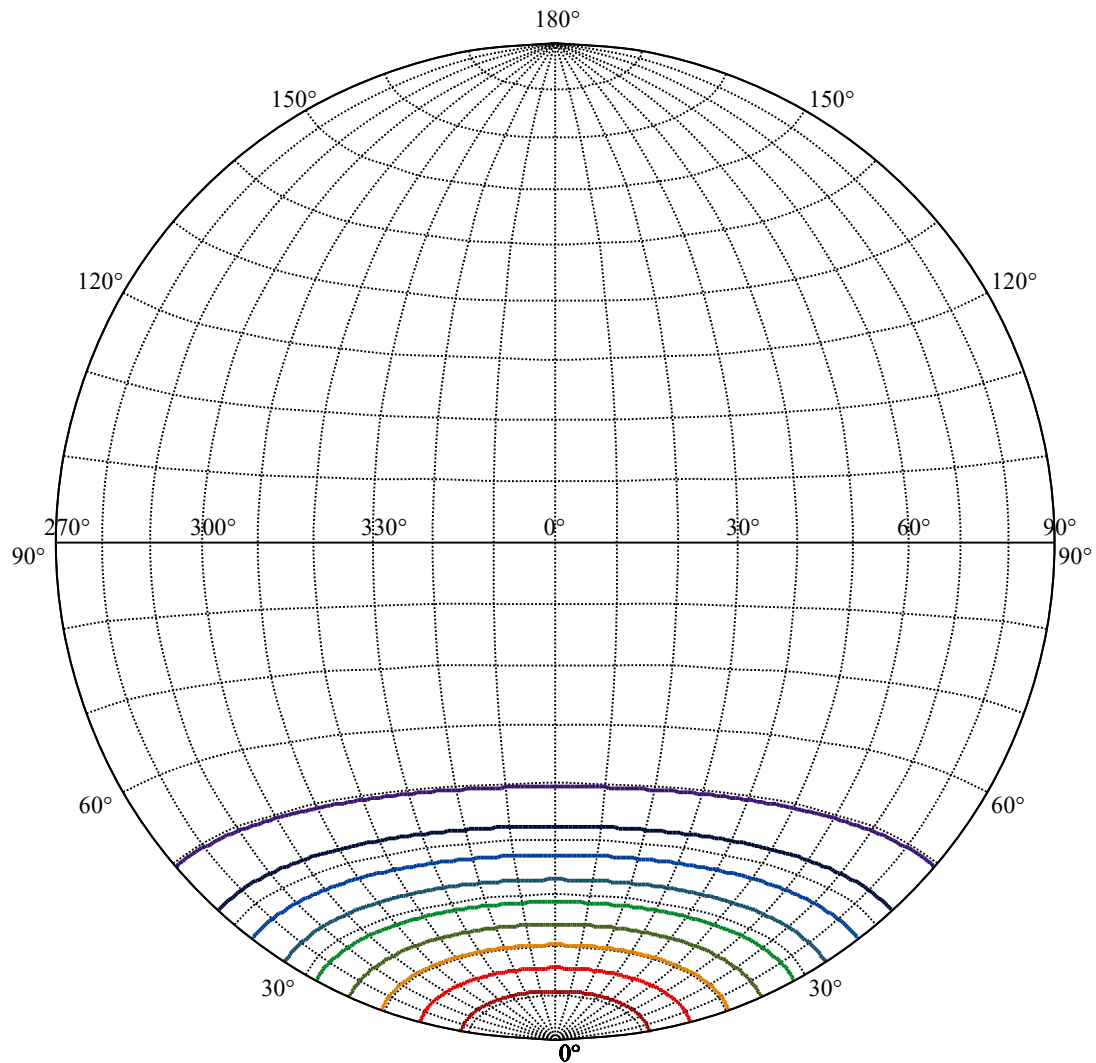
:C90/270Left:49.4 Right:49.4

Beam Angle(50%Imax):C0/180Left:28.6 Right:28.6

:C90/270Left:28.6 Right:28.6







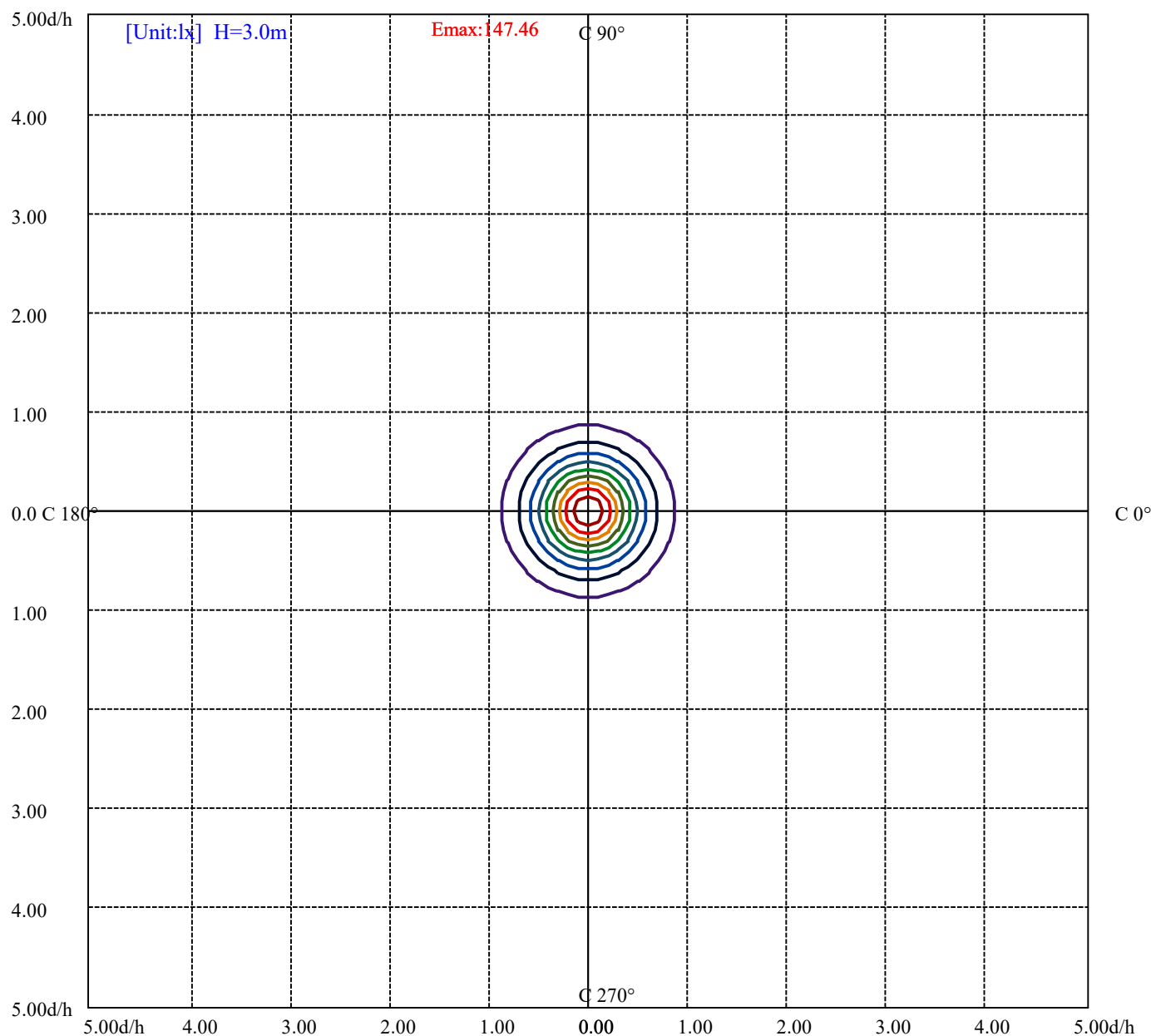
House

[Unit:cd]

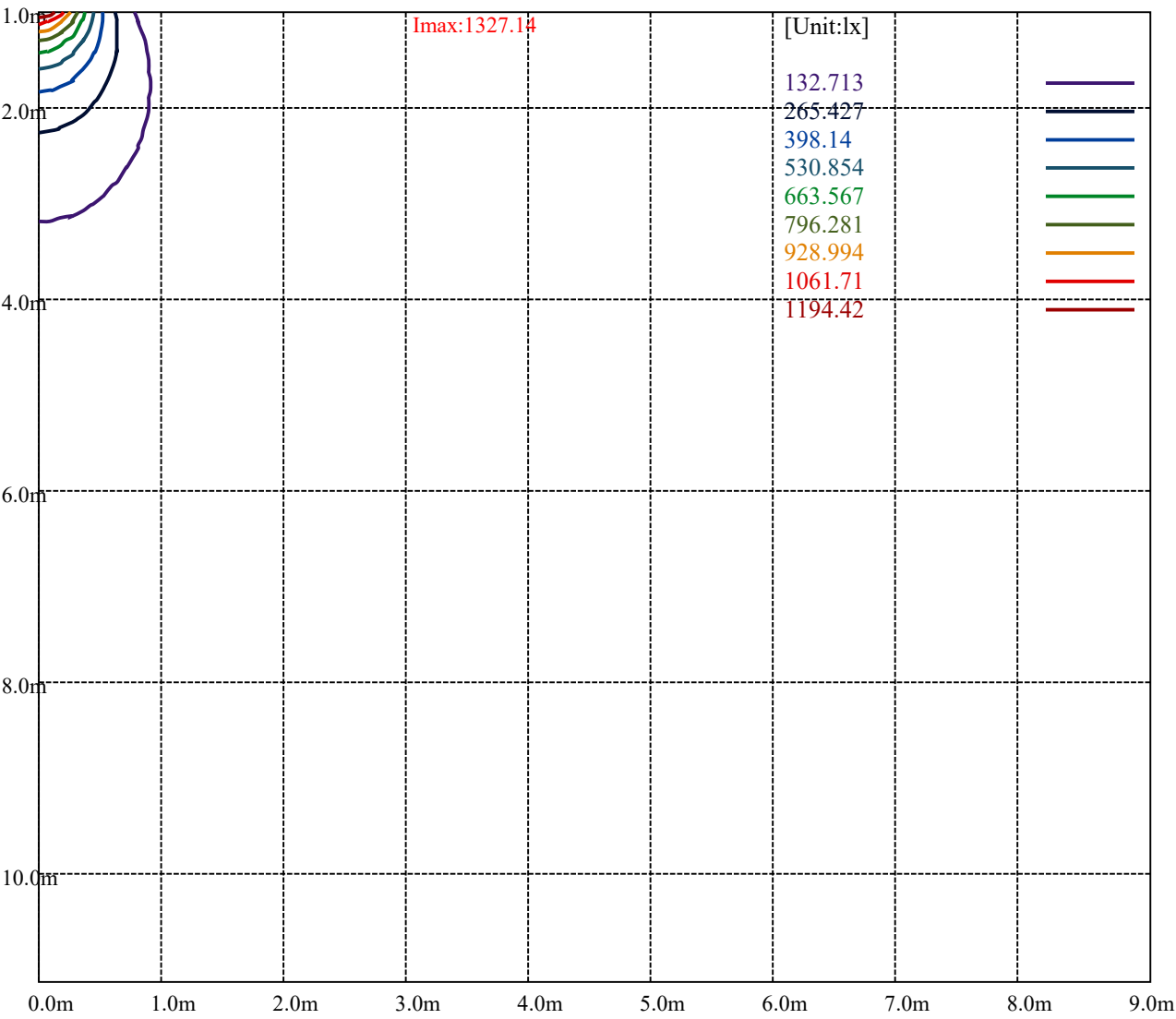
Road

Imax:1327.14

(10%Imax)	132.713	—
(20%Imax)	265.427	—
(30%Imax)	398.14	—
(40%Imax)	530.854	—
(50%Imax)	663.567	—
(60%Imax)	796.281	—
(70%Imax)	928.994	—
(80%Imax)	1061.71	—
(90%Imax)	1194.42	—



(10%E _{max}) 14.74589	—
(20%E _{max}) 29.49189	—
(30%E _{max}) 44.23778	—
(40%E _{max}) 58.98378	—
(50%E _{max}) 73.72967	—
(60%E _{max}) 88.47556	—
(70%E _{max}) 103.2216	—
(80%E _{max}) 117.9678	—
(90%E _{max}) 132.7133	—



Luminance Table

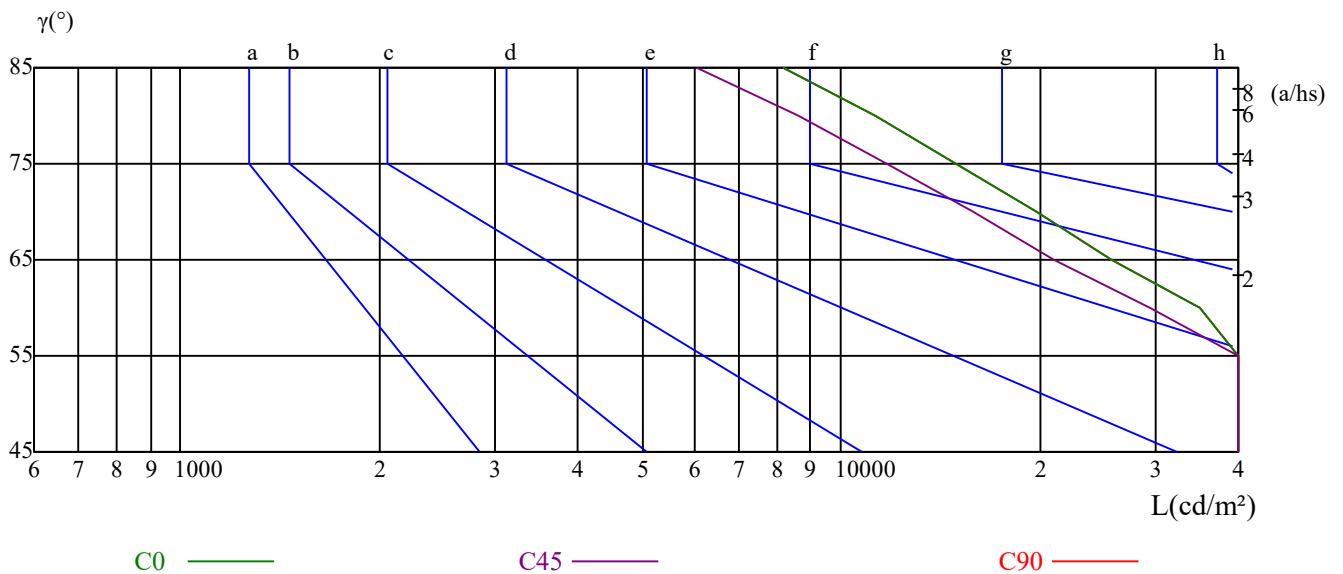
γ	45	50	55	60	65	70	75	80	85
C0	125671	78350	50162	35076	25657	19781	14927	11254	8202
C45	110198	67711	42687	29356	21084	15923	11734	8602	6058
C90	125671	78350	50162	35076	25657	19781	14927	11254	8202

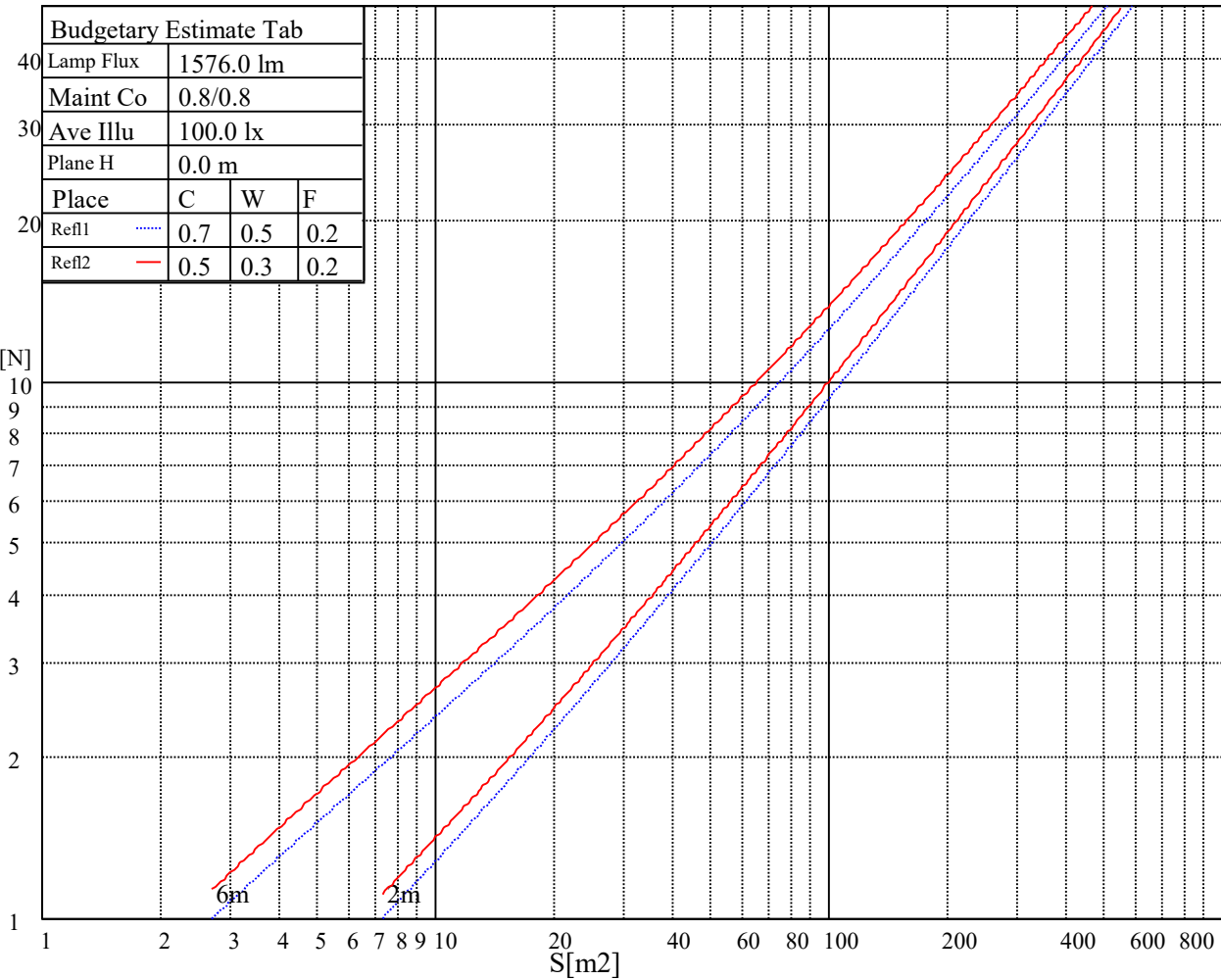
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
53874	53874	53874	43495	43495	43495	56276	56276	56276

Glare Table

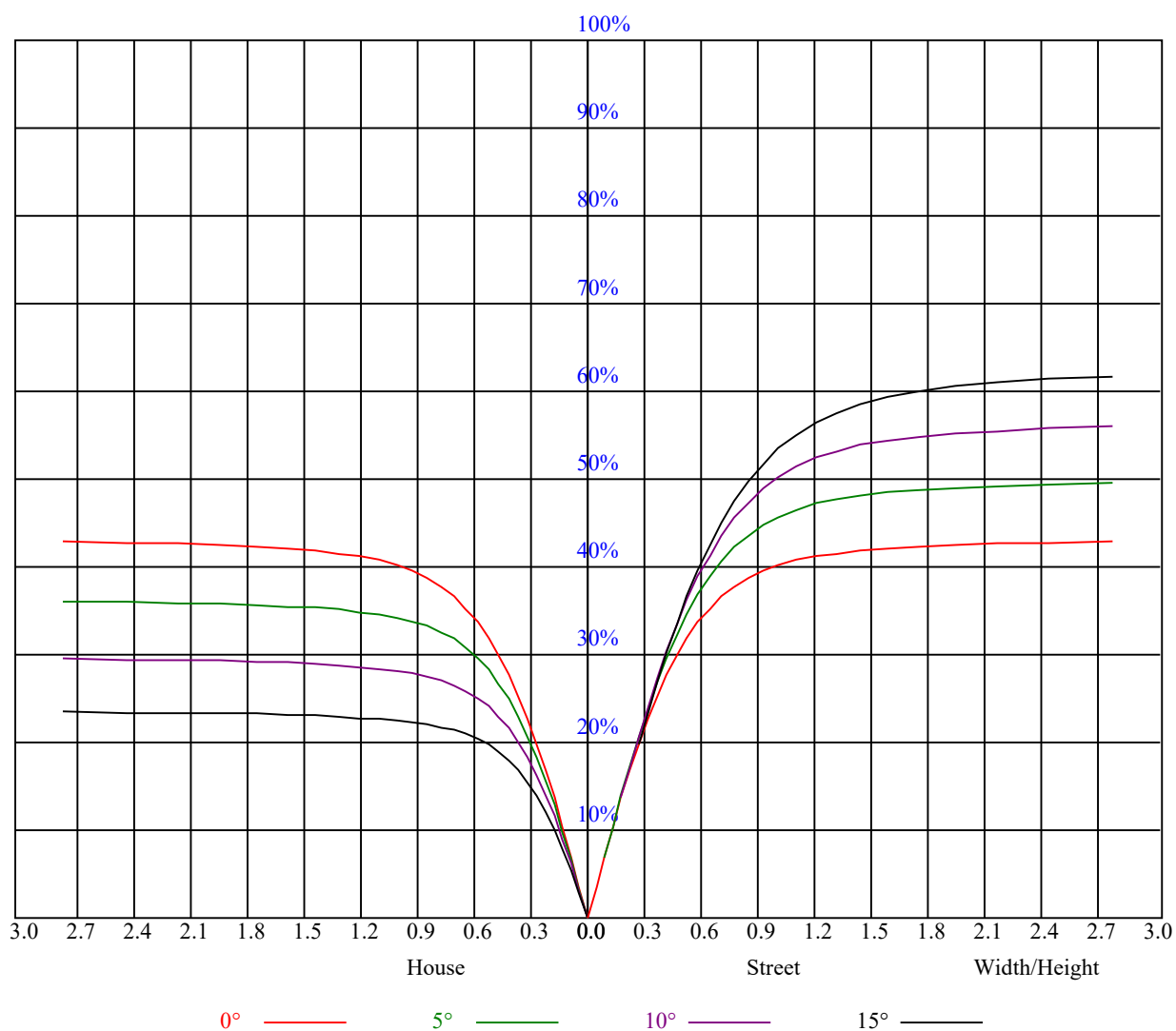
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.95	0.92	0.90	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.79
2	0.87	0.83	0.80	0.86	0.82	0.79	0.83	0.80	0.77	0.80	0.78	0.76	0.78	0.76	0.74	0.73
3	0.81	0.76	0.72	0.80	0.75	0.72	0.77	0.74	0.70	0.75	0.72	0.69	0.73	0.71	0.68	0.67
4	0.75	0.70	0.66	0.74	0.69	0.65	0.72	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.63	0.62
5	0.70	0.65	0.60	0.69	0.64	0.60	0.68	0.63	0.60	0.66	0.62	0.59	0.65	0.61	0.59	0.57
6	0.66	0.60	0.56	0.65	0.60	0.56	0.63	0.59	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.53
7	0.61	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.54	0.51	0.58	0.54	0.51	0.50
8	0.58	0.52	0.49	0.57	0.52	0.48	0.56	0.52	0.48	0.55	0.51	0.48	0.55	0.51	0.48	0.47
9	0.55	0.49	0.46	0.54	0.49	0.45	0.53	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.44
10	0.52	0.46	0.43	0.51	0.46	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.49	0.45	0.42	0.41



Nata 1408-N

Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1322.45	1285.57	1192.52	1061.49	907.88	739.41	591.31	432.19	287.39		
45.0	1330.16	1278.96	1184.26	1035.61	874.85	707.47	564.33	405.77	282.99		
90.0	1327.41	1276.21	1166.09	1022.56	862.35	694.26	546.43	386.83	253.04		
135.0	1328.51	1304.29	1226.11	1099.48	958.53	793.36	640.86	488.35	344.65		
180.0	1322.45	1306.49	1238.22	1097.99	974.88	808.39	649.34	478.27	352.42		
225.0	1330.16	1323.56	1264.09	1096.94	997.62	836.80	676.97	513.29	377.25		
270.0	1327.41	1323.01	1269.05	1156.18	1013.04	854.48	694.26	534.60	394.20		
315.0	1328.51	1299.33	1212.89	1082.57	930.56	762.97	596.81	451.19	308.76		
360.0	1322.45	1285.57	1192.52	1061.49	907.88	739.41	591.31	432.19	287.39		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	172.71	101.80	63.31	43.33	30.61	22.08	15.09	10.30	6.50		
45.0	161.26	95.91	59.96	42.12	29.23	20.98	14.26	9.47	6.17		
90.0	152.89	92.71	57.97	40.08	28.46	20.32	13.60	9.08	6.06		
135.0	211.14	129.11	75.54	49.17	33.31	24.11	16.63	11.18	7.10		
180.0	225.18	138.74	84.51	54.89	37.22	27.03	18.77	12.88	7.98		
225.0	245.72	154.05	94.26	62.82	42.34	29.90	21.09	14.59	9.52		
270.0	278.59	159.66	101.47	63.76	42.61	30.06	21.03	14.48	8.97		
315.0	188.29	115.34	69.48	46.80	33.25	23.84	16.52	10.96	7.38		
360.0	172.71	101.80	63.31	43.33	30.61	22.08	15.09	10.30	6.50		
C/γ(°)	90.0										
0.0	5.23										
45.0	5.40										
90.0	5.23										
135.0	5.18										
180.0	5.29										
225.0	6.17										
270.0	5.78										
315.0	5.18										
360.0	5.23										