



UL LLC
1075 W Lambert Rd Suite B
Brea, CA 92821

Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
Auroralight Inc
2742 Loker Ave. West
Carlsbad, CA 92010

Catalog Number
LBD400-S13-NL-20-30-48 (NO LOUVERS, 3000K)
Order Number
11263738
Test Number
1254182

Test Date

2016-05-24

Prepared By

Austin Duff, Technician

Approved By

Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Spherical 13" copper shade with no louvers and cylindrical 48" copper stem with brass base
Lamp: Fourteen (14) Cree XP-L 3000K LEDs
Mounting: Path/Area
Ballast/Driver: THOMAS LED30W-66-C0450

Luminaire



Luminaire Characteristics

Luminous Diameter: 12.00 in.
Luminous Height: 1.75 in.

Summary of Results

Roadway Classification: Type IV, Very Short
Cutoff Classification: Cutoff
BUG Rating: B1 U1 G1

Test Conditions

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.1941 A
Power: 20.14 W
Power Factor: 0.864
Frequency: 60 Hz
Current THD: 34.5 %

Tested in 30 planes left side, 30 planes right side, left and right averaged
Vertical test increments are 2.5 degrees
Test distance exceeds five times the greatest luminous opening of luminaire

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1941 A	20.14 W	0.864	60 Hz	34.5 %

Summary of Results

Spacing Criteria

0-180: 1.66
90-270: 1.63

Total Lumen Output:

929.9 Lumens

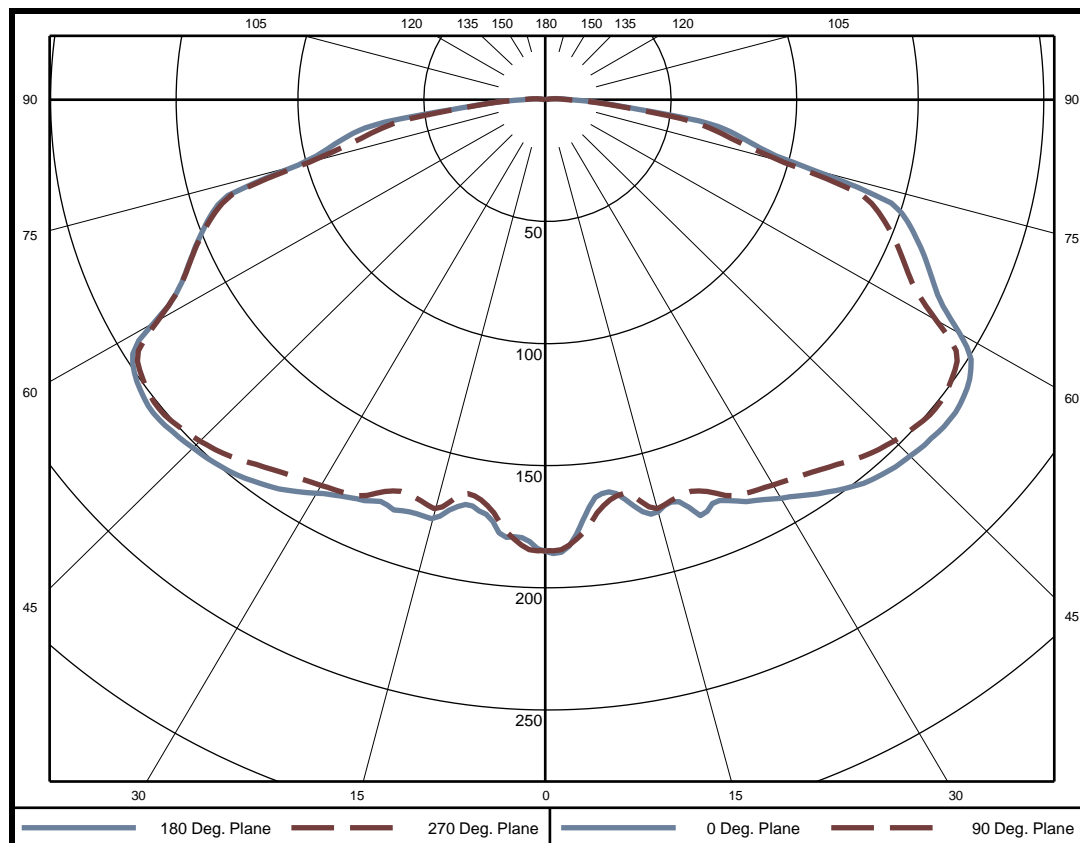
Luminaire Efficacy:

46.2 lm/w

Maximum Candela:

208 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	4.32	0.5%	60-65	83.58	9.0%	120-125	0	0.0%
5-10	12.12	1.3%	65-70	79.20	8.5%	125-130	0	0.0%
10-15	19.93	2.1%	70-75	71.02	7.6%	130-135	0	0.0%
15-20	28.33	3.0%	75-80	46.12	5.0%	135-140	0	0.0%
20-25	37.28	4.0%	80-85	29.20	3.1%	140-145	0	0.0%
25-30	46.06	5.0%	85-90	10.48	1.1%	145-150	0	0.0%
30-35	55.34	6.0%	90-95	3.92	0.4%	150-155	0	0.0%
35-40	64.87	7.0%	95-100	1.88	0.2%	155-160	0	0.0%
40-45	73.92	7.9%	100-105	0.58	0.1%	160-165	0	0.0%
45-50	82.03	8.8%	105-110	0.01	0.0%	165-170	0	0.0%
50-55	88.66	9.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	91.09	9.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	268	28.8%
0-60	604	64.9%
0-90	924	99.3%
90-180	6	0.7%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9
	5	173.0	175.6	178.0	179.4	177.9	177.0	175.7	176.0	180.0	176.0	175.7	177.0	177.9	179.4	178.0
	10	163.9	168.0	166.5	165.3	164.8	171.8	163.6	164.6	169.0	164.6	163.6	171.8	164.8	165.3	166.5
	15	174.7	168.3	171.5	168.4	173.5	174.3	164.5	166.6	177.7	166.6	164.5	174.3	173.5	168.4	171.5
	20	181.4	170.0	171.9	181.8	170.7	173.1	175.3	173.6	178.9	173.6	175.3	173.1	170.7	181.8	171.9
	25	181.4	180.3	180.4	181.3	179.0	179.5	179.5	177.2	180.4	177.2	179.5	179.5	179.0	181.3	180.4
	30	188.6	185.4	183.9	187.3	182.3	183.3	183.8	182.8	186.1	182.8	183.8	183.3	182.3	187.3	183.9
	35	196.3	192.5	191.2	194.4	186.3	190.1	190.8	188.5	193.5	188.5	190.8	190.1	186.3	194.4	191.2
	40	203.2	199.6	198.1	200.6	192.4	196.1	197.6	193.8	198.7	193.8	197.6	196.1	192.4	200.6	198.1
	45	206.4	204.6	202.2	203.7	197.7	200.2	202.2	197.1	201.5	197.1	202.2	200.2	197.7	203.7	202.2
	50	208.3	207.8	204.9	205.8	201.0	203.4	206.0	199.1	203.7	199.1	206.0	203.4	201.0	205.8	204.9
	55	206.0	205.5	202.5	204.2	198.9	201.4	205.7	197.8	201.4	197.8	205.7	201.4	198.9	204.2	202.5
	60	191.3	181.3	180.0	191.8	180.9	181.3	192.4	186.5	182.4	186.5	192.4	181.3	180.9	191.8	180.0
	65	170.2	160.5	159.8	169.5	158.8	159.5	167.2	165.0	158.9	165.0	167.2	159.5	158.8	169.5	159.8
	70	156.3	147.2	146.6	155.8	144.3	146.7	154.4	151.7	145.2	151.7	154.4	146.7	144.3	155.8	146.6
	75	110.1	102.6	101.7	106.0	98.7	105.0	109.2	104.5	103.3	104.5	109.2	105.0	98.7	106.0	101.7
	80	75.2	74.6	73.5	75.2	67.1	80.0	75.2	72.0	78.8	72.0	75.2	80.0	67.1	75.2	73.5
	85	30.5	28.5	28.6	30.7	29.0	29.9	32.3	32.5	29.9	32.5	32.3	29.9	29.0	30.7	28.6
	90	10.6	8.8	9.0	10.8	9.7	9.4	11.1	11.4	9.3	11.4	11.1	9.4	9.7	10.8	9.0
	95	5.5	4.5	4.6	5.5	4.8	4.6	5.5	5.6	4.6	5.6	5.5	4.6	4.8	5.5	4.6
	100	2.3	1.9	2.0	2.3	2.0	1.9	2.3	2.4	1.9	2.4	2.3	1.9	2.0	2.3	2.0
	105	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1
	110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

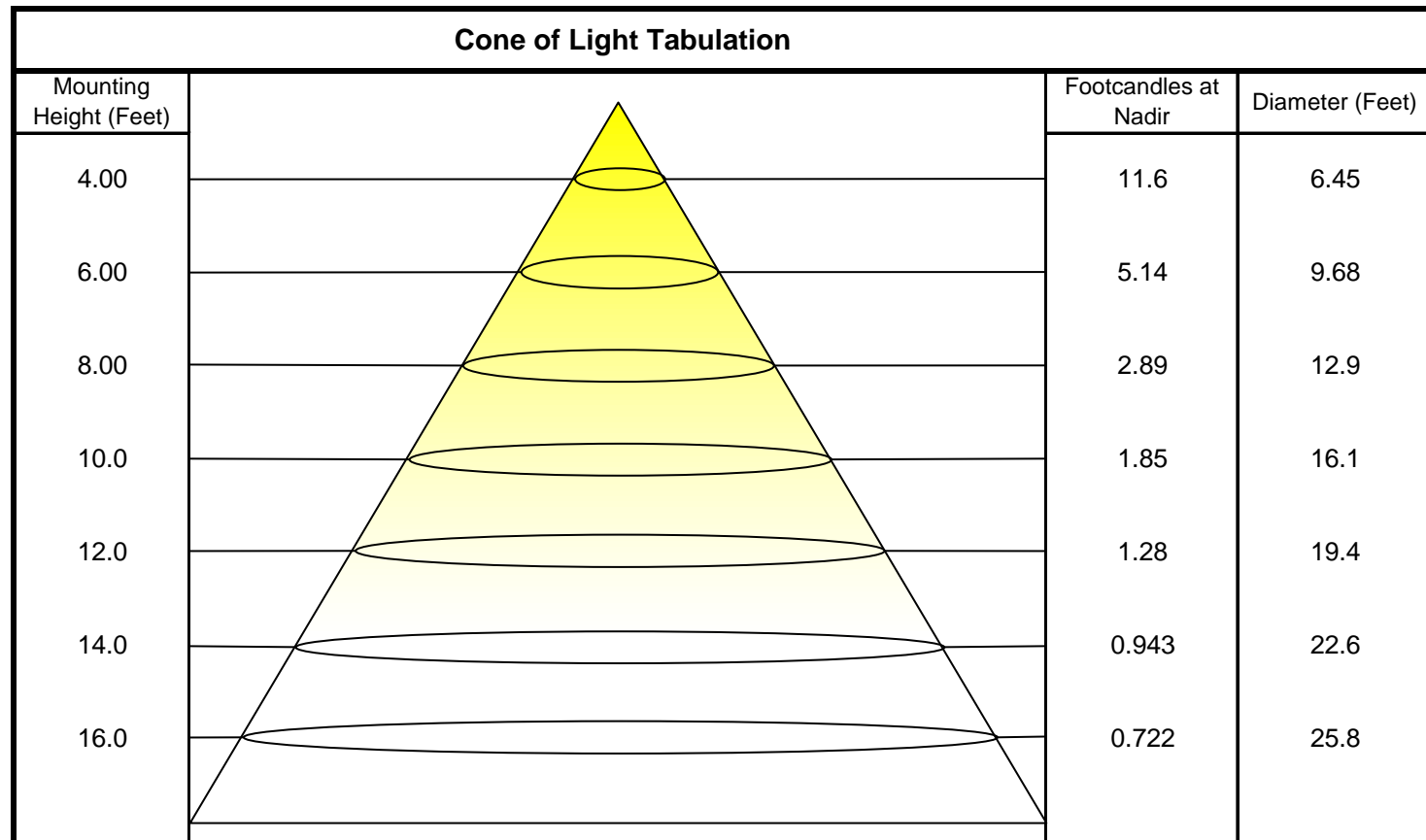
Vertical Angle (Degrees)	Horizontal Angle (Avg. 60°)			
	0	45	90	
	0	2534	2534	2534
	45	8029	7865	7689
	55	5289	5199	5106
	65	3942	3699	3676
	75	2363	2183	2118
	85	634	594	602



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	1106	1106	1106	1106	1079	1079	1079	1079	1030	1030	1030	985	985	985	943	943	943	924
1	984	928	878	833	956	906	860	819	864	826	791	825	794	765	790	765	741	719
2	876	783	706	641	849	764	693	633	728	668	616	695	645	601	665	623	586	563
3	785	669	579	508	759	653	569	502	623	551	492	595	533	482	569	517	472	449
4	709	579	485	413	685	566	477	409	540	463	402	516	449	395	494	436	388	365
5	645	508	413	343	623	497	407	340	475	396	335	455	385	330	436	375	326	303
6	590	451	357	290	570	441	352	288	422	343	284	405	335	281	389	326	277	256
7	543	403	313	249	525	395	309	248	379	301	245	364	294	242	350	288	240	219
8	503	364	277	217	487	357	274	216	343	268	214	330	262	212	318	256	210	190
9	467	331	248	191	453	325	245	190	313	240	189	302	235	187	292	230	185	167
10	437	303	223	170	423	298	221	170	288	217	168	278	213	167	269	209	165	148

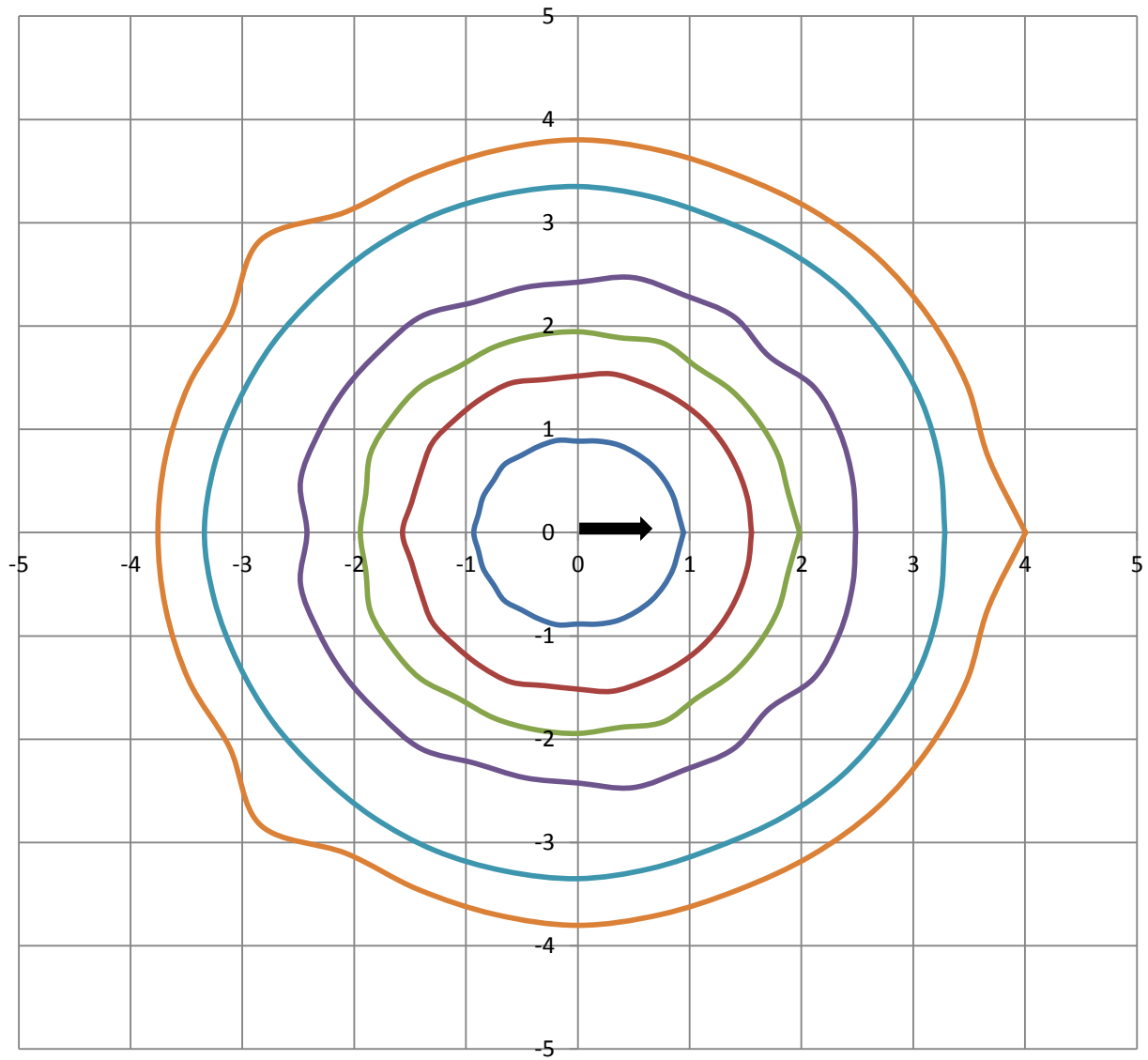
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	184.9 Candela
Central Cone Intensity:	182 Candela
Beam Flux:	850.8 Lumens
Beam Angle (0-180):	153.0 Degrees
Beam Angle (90-270):	151.3 Degrees
Field Angle (0-180):	175.2 Degrees
Field Angle (90-270):	174.8 Degrees





ISOFootcandle Plot

Mounting Height - 4 Feet

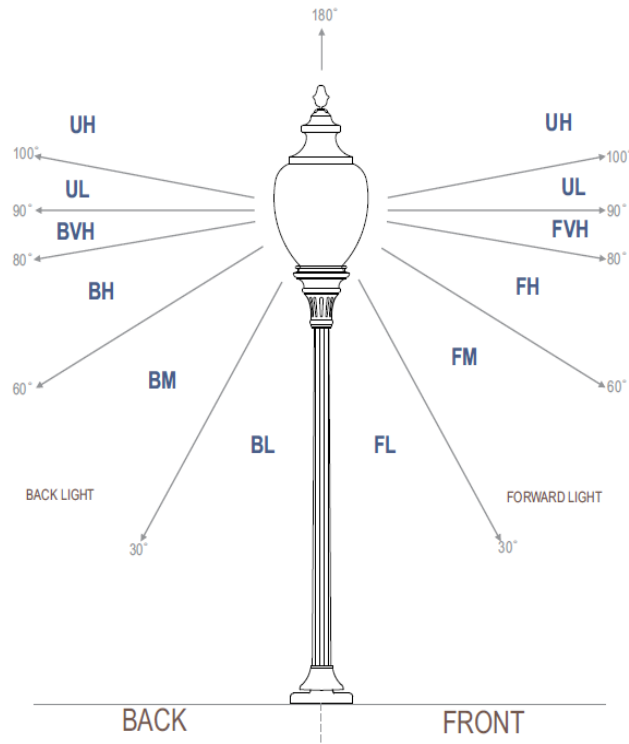


Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc



IES "BUG" Rating
(Back Light, Uplight, Glare)
Per IES TM-15-11



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	74.2	8.0%
FM	(30-60)	228.6	24.6%
FH	(60-80)	139.0	15.0%
FVH	(80-90)	19.4	2.1%
BL	(0-30)	73.9	8.0%
BM	(30-60)	225.7	24.3%
BH	(60-80)	140.0	15.1%
BVH	(80-90)	20.5	2.2%
UL	(90-100)	5.9	0.6%
UH	(100-180)	0.6	0.1%
Total		927.7	100.0%
BUG Rating	B1 U1 G1		