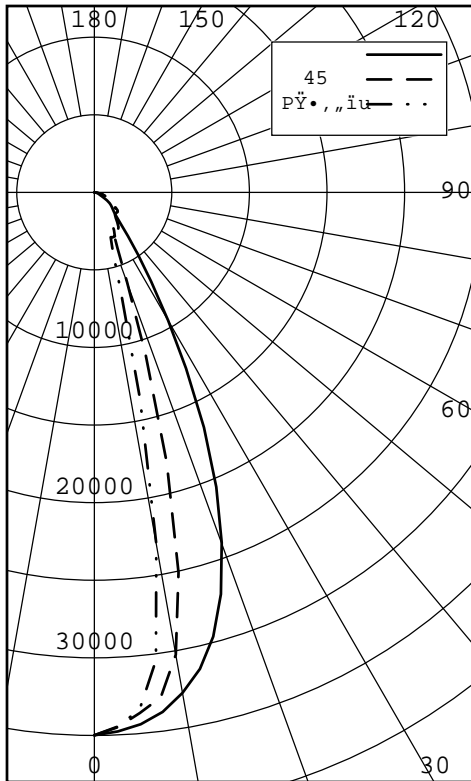


BIRNS - UNDERWATER FLOOD LIGHT  
WITH SPECULAR HOUSING

ONE SYL. 1000 W HALOGEN PAR LAMP,CAT# 1000PAR64Q/WFL. LUMEN RATING = 19400 LMS.  
OPERATING AT 120 VAC AND 1000 WATTS

INTENSITY(CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	
0	34988	34988	34988	34988	34988	
5	33477	33509	33684	33989	34406	3117
10	22997	24981	30255	32270	32755	
15	6647	8303	18069	29465	29631	5127
20	3088	3317	6194	21947	24025	
25	3142	3142	2980	11876	16719	3231
30	2298	2630	2783	5444	9533	
35	2249	2083	2738	2769	4910	1834
40	2572	2540	2159	1997	2666	
45	2100	2293	1907	1831	1795	1557
50	1750	1710	1970	1840	1481	
55	1400	1490	1665	1625	1207	1300
60	1005	1028	1059	1118	745	
65	956	996	866	723	404	820
70	857	889	745	570	319	
75	561	579	548	449	265	486
80	121	135	184	153	112	
85	9	9	76	9	9	45
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	11475	59.15	65.51
0-40	13309	68.60	75.98
0-60	16166	83.33	92.29
0-90	17517	90.30	100.00
40-90	4208	21.69	24.02
60-90	1350	6.96	7.71
90-180	0	.00	.00
0-180	17517	90.30	100.00

\*\* EFFICIENCY: 90.3% \*\*

LUMINANCE SUMMARY CD./SQ.M.

S/MH: .8  
SC(ALONG): .4, SC(ACROSS): .8

ANGLE	ALONG	45	ACROSS
45	76569	69799	65694
55	62930	75116	54464
65	58308	53019	24731
75	55874	54598	26473
85	2654	22624	2665

CERTIFIED BY:

DATE:  
JUN 11, 2003

PREPARED FOR:

BIRNS  
OXNARD, CA

TESTED IN ACCORDANCE WITH IES PROCEDURES.

LIGHTING SCIENCES  
7830 E. EVANS RD  
SCOTTSDALE, AZ, USA 85260

CERTIFIED TEST REPORT No.

17956

BIRNS - UNDERWATER FLOOD LIGHT  
WITH SPECULAR HOUSING

ONE SYL. 1000 W HALOGEN PAR LAMP, CAT# 1000PAR64Q/WFL. LUMEN RATING = 19400 LMS.  
OPERATING AT 120 VAC AND 1000 WATTS

INTENSITY(CANDLEPOWER) DATA  
IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
.0	34988	34988	34988	34988	34988	34988	
2.5	34465	34393	34505	34635	34779	34539	
5.0	33477	33509	33684	33989	34406	33781	3117
7.5	30416	31328	32827	33190	33783	32361	
10.0	22997	24981	30255	32270	32755	28846	
12.5	13676	16306	25102	31094	31462	23768	
15.0	6647	8303	18069	29465	29631	18494	5127
17.5	3968	4744	11054	26660	27145	14504	
20.0	3088	3317	6194	21947	24025	11254	
22.5	3137	3003	3914	16624	20556	8847	
25.0	3142	3142	2980	11876	16719	6982	3231
27.5	2765	3047	2702	8043	12796	5393	
30.0	2298	2630	2783	5444	9533	4193	
32.5	2105	2213	2859	3703	6818	3309	
35.0	2249	2083	2738	2769	4910	2792	1834
37.5	2509	2258	2433	2267	3564	2498	
40.0	2572	2540	2159	1997	2666	2329	
42.5	2347	2576	1970	1863	2100	2158	
45.0	2100	2293	1907	1831	1795	1995	1557
47.5	1863	1948	1952	1876	1611	1878	
50.0	1750	1710	1970	1840	1481	1784	
52.5	1741	1521	1899	1773	1360	1686	
55.0	1400	1490	1665	1625	1207	1521	1300
57.5	1050	1207	1324	1378	978	1231	
60.0	1005	1028	1059	1118	745	1020	
62.5	956	974	929	880	534	882	
65.0	956	996	866	723	404	816	820
67.5	938	983	799	624	341	761	
70.0	857	889	745	570	319	698	
72.5	700	723	682	512	296	604	
75.0	561	579	548	449	265	497	486
77.5	332	328	373	337	197	325	
80.0	121	135	184	153	112	147	
82.5	31	45	108	31	18	52	
85.0	9	9	76	9	9	26	45
87.5	0	0	54	0	0	13	
90.0	0	0	0	0	0	0	

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ONE SYL. 1000 W HALOGEN PAR LAMP, CAT# 1000PAR64Q/WFL. LUMEN RATING = 19400 LMS.  
OPERATING AT 120 VAC AND 1000 WATTS

AVERAGE LUMINANCE DATA

ANGLE	CD./SQ.M. (FOOTLAMBERTS)				
	ALONG	22.5	45	67.5	ACROSS
0	901870(263224)	901870(263224)	901870(263224)	901870(263224)	901870(263224)
30	68396( 19962)	78502( 22911)	83038( 24235)	162432( 47408)	283738( 82813)
40	86535( 25256)	85704( 25014)	72709( 21221)	67386( 19667)	89707( 26182)
45	76569( 22347)	83711( 24432)	69799( 20372)	66950( 19540)	65694( 19173)
50	70192( 20486)	68831( 20089)	79025( 23064)	73995( 21596)	59393( 17334)
55	62930( 18367)	67085( 19579)	75116( 21923)	73234( 21374)	54464( 15896)
60	51829( 15127)	53169( 15518)	54661( 15953)	57762( 16858)	38409( 11210)
65	58308( 17018)	60828( 17753)	53019( 15474)	44214( 12904)	24731( 7218)
70	64606( 18856)	67213( 19617)	56313( 16435)	43050( 12565)	24016( 7009)
75	55874( 16307)	57882( 16893)	54598( 15935)	44853( 13091)	26473( 7726)
80	17988( 5250)	20063( 5855)	27420( 8003)	22684( 6620)	16656( 4861)
85	2654( 774)	2664( 777)	22624( 6603)	2664( 777)	2665( 777)

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 ONE SYL. 1000 W HALOGEN PAR LAMP,CAT# 1000PAR64Q/WFL. LUMEN RATING = 19400 LMS.  
 OPERATING AT 120 VAC AND 1000 WATTS

COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																									
0	1.10	1.10	1.10	1.10	1.07	1.07	1.07	1.07	1.05	1.05	1.05	1.05	1.00	1.00	1.00	.96	.96	.96	.92	.92	.92	.92	.92	.92	.90
1	1.04	1.01	.99	.97	1.02	1.00	.97	.95	1.00	.98	.96	.94	.94	.92	.91	.91	.89	.88	.88	.86	.85	.85	.84	.84	.84
2	.99	.94	.91	.87	.97	.93	.89	.86	.95	.91	.88	.85	.88	.85	.83	.86	.83	.81	.83	.81	.80	.80	.78	.78	.78
3	.94	.88	.83	.79	.92	.87	.82	.79	.91	.85	.81	.78	.83	.80	.77	.81	.78	.76	.79	.77	.74	.74	.73	.73	.73
4	.90	.83	.77	.74	.88	.82	.77	.73	.87	.81	.76	.73	.79	.75	.72	.77	.74	.71	.75	.72	.70	.70	.69	.69	.69
5	.86	.78	.72	.68	.84	.77	.72	.68	.83	.76	.71	.68	.74	.70	.67	.73	.69	.67	.72	.69	.66	.66	.65	.65	.65
6	.82	.74	.68	.65	.81	.73	.68	.64	.79	.72	.67	.64	.71	.67	.64	.70	.66	.63	.69	.65	.63	.63	.61	.61	.61
7	.78	.70	.64	.61	.77	.69	.64	.61	.76	.69	.64	.60	.67	.63	.60	.66	.62	.60	.65	.62	.59	.59	.58	.58	.58
8	.75	.67	.61	.58	.74	.66	.61	.58	.73	.65	.61	.57	.64	.60	.57	.64	.60	.57	.63	.59	.57	.57	.55	.55	.55
9	.72	.64	.58	.55	.71	.63	.58	.55	.70	.63	.58	.55	.62	.57	.54	.61	.57	.54	.60	.57	.54	.54	.53	.53	.53
10	.69	.61	.56	.52	.68	.60	.56	.52	.68	.60	.56	.52	.59	.55	.52	.59	.55	.52	.58	.54	.52	.52	.51	.51	.51

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.  
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST  
 LUMINOUS OPENING OF LUMINAIRE.