

REPORT NUMBER: RAB01898
 ISSUE DATE: 04/27/16
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: BULLET12

PAGE: 1 OF 7
 DATE SAMPLE TESTED: 04/27/16

LUMINAIRE: CAST FINNED METAL HEAT SINK, MOLDED TEXTURED PLASTIC REFLECTOR WITH SEMI-DIFFUSE FINISH, 1 CIRCUIT BOARD WITH 24 LEDs, CLEAR MICRO-PRISMATIC GLASS LENS IN CAST BROWN PAINTED METAL FRAME, LENS PRISMS OUT.

LAMPS: TWENTY-FOUR WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS =13.238 AT 120.0 VAC.

LED DRIVER: INTEGRAL

TEST PROCEDURE: IESNA LM-79-08

(SEE PAGE 2 FOR MORE INFORMATION)

FLOODLIGHT CHARACTERISTICS

IES TYPE	6H X 6V				
MAXIMUM CANDLEPOWER	656. AT	0.0 H,	-1.0 V		
HORIZONTAL BEAM ANGLE (50%)	91.9 deg			AXIAL CANDLEPOWER	
VERTICAL BEAM ANGLE (50%)	85.9 deg				
HORIZONTAL FIELD ANGLE (10%)	126.9 deg		DEG	HORIZ.	DEG VERT.
VERTICAL FIELD ANGLE (10%)	127.8 deg				
BEAM LUMENS (% FIXTURE)	921. (74.3 %)	90.0	0.	90.0	0.
FIELD LUMENS (% FIXTURE)	1190. (95.9 %)	85.0	2.	85.0	0.
TOTAL LUMENS (% FIXTURE)	1240. (100.0 %)	75.0	13.	75.0	17.
TOTAL INPUT WATTS = 13.2		65.0	51.	65.0	71.
EFFICACY = 93.9 Lm/W		55.0	144.	55.0	184.
		47.5	247.	47.5	286.
		42.5	327.	42.5	369.
		37.5	415.	37.5	463.
		33.0	486.	33.0	521.
		29.0	536.	29.0	560.
		25.5	569.	25.5	590.
		22.5	594.	22.5	607.
		19.5	612.	19.5	618.
		17.0	622.	17.0	630.
		15.0	629.	15.0	637.
		13.0	637.	13.0	641.
		11.0	643.	11.0	646.
		9.0	647.	9.0	650.
		7.0	648.	7.0	651.
		5.0	650.	5.0	653.
		3.0	652.	3.0	653.
		1.0	655.	1.0	653.
		0.0	655.	0.0	655.
		-1.0	655.	-1.0	656.
		-3.0	652.	-3.0	653.
		-5.0	650.	-5.0	651.
		-7.0	648.	-7.0	651.
		-9.0	647.	-9.0	645.
		-11.0	643.	-11.0	637.
		-13.0	637.	-13.0	630.
		-15.0	629.	-15.0	622.
		-17.0	622.	-17.0	612.
		-19.5	612.	-19.5	598.
		-22.5	594.	-22.5	577.
		-25.5	569.	-25.5	550.
		-29.0	536.	-29.0	510.
		-33.0	486.	-33.0	448.
		-37.5	415.	-37.5	369.
		-42.5	327.	-42.5	297.
		-47.5	247.	-47.5	221.
		-55.0	144.	-55.0	122.
		-65.0	51.	-65.0	39.
		-75.0	13.	-75.0	9.
		-85.0	2.	-85.0	0.
		-90.0	0.	-90.0	0.



Checked X.CAO
 Approved D.WANG-MUNSON

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ADDITIONAL INFORMATION

ACCREDITED LABORATORY CODE 201058-0
TEST DISTANCE : 28.25 FEET

NOTE: THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.

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CANDELA TABULATION - FIELD ONLY
 AVERAGE OF RIGHT AND LEFT SIDES

	0.0	1.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.5	22.5	25.5	29.0	33.0	37.5	42.5	47.5	55.0	65.0	75.0	85.0	90.0	
90.0																								
85.0																								
75.0																								
65.0	71.	69.	70.	70.	69.	67.																		
55.0	184.	185.	184.	182.	182.	180.	174.	170.	165.	160.	152.	141.	130.	116.	99.	81.								
47.5	286.	288.	287.	286.	284.	278.	274.	269.	264.	256.	246.	231.	215.	195.	170.	138.	106.	78.						
42.5	369.	371.	369.	366.	363.	356.	380.	455.	438.	404.	326.	295.	276.	251.	222.	183.	141.	103.						
37.5	463.	464.	460.	456.	449.	441.	432.	423.	413.	400.	441.	357.	441.	363.	271.	228.	179.	131.	73.					
33.0	521.	519.	517.	514.	509.	503.	495.	486.	474.	459.	440.	414.	386.	485.	326.	268.	213.	158.	87.					
29.0	560.	559.	559.	556.	552.	546.	539.	531.	521.	508.	487.	457.	430.	394.	385.	338.	240.	180.	101.					
25.5	590.	589.	589.	585.	581.	575.	570.	562.	553.	540.	520.	496.	466.	426.	378.	385.	262.	197.	111.					
22.5	607.	607.	607.	608.	605.	598.	589.	582.	573.	562.	545.	522.	494.	453.	402.	417.	278.	210.	120.					
19.5	618.	620.	620.	622.	618.	611.	605.	599.	590.	580.	566.	544.	514.	474.	421.	442.	354.	221.	127.					
17.0	630.	629.	631.	629.	625.	620.	615.	607.	599.	592.	579.	557.	528.	489.	437.	416.	371.	229.	132.					
15.0	637.	636.	635.	633.	629.	625.	620.	612.	606.	599.	587.	566.	539.	501.	448.	426.	382.	235.	136.					
13.0	641.	642.	640.	637.	635.	632.	625.	621.	614.	604.	592.	575.	547.	510.	457.	435.	391.	240.	139.					
11.0	646.	646.	643.	640.	639.	637.	631.	625.	618.	609.	598.	580.	554.	519.	466.	443.	400.	245.	141.					
9.0	650.	650.	646.	643.	641.	640.	635.	628.	620.	614.	603.	585.	561.	526.	474.	449.	407.	248.	143.					
7.0	651.	651.	649.	646.	643.	640.	637.	631.	623.	615.	603.	588.	566.	532.	479.	407.	494.	250.	145.					
5.0	653.	653.	651.	649.	645.	642.	639.	633.	627.	618.	607.	591.	570.	537.	484.	413.	500.	250.	145.					
3.0	653.	653.	652.	648.	645.	643.	640.	635.	628.	620.	610.	593.	570.	539.	486.	415.	503.	250.	145.					
1.0	653.	653.	650.	649.	647.	645.	640.	635.	627.	619.	610.	592.	569.	537.	486.	414.	505.	248.	144.					
0.0	655.	655.	652.	650.	648.	647.	643.	637.	629.	622.	612.	594.	569.	536.	486.	415.	327.	247.	144.					
-1.0	656.	655.	653.	650.	648.	648.	643.	638.	630.	622.	611.	594.	570.	535.	485.	414.	505.	247.	144.					
-3.0	653.	653.	653.	651.	648.	646.	641.	637.	630.	619.	610.	592.	570.	534.	483.	460.	414.	244.	143.					
-5.0	651.	652.	651.	650.	645.	642.	637.	632.	625.	618.	606.	587.	567.	531.	480.	457.	409.	239.	141.					
-7.0	651.	651.	647.	646.	641.	637.	633.	630.	622.	613.	601.	581.	560.	526.	474.	451.	403.	235.	139.					
-9.0	645.	646.	643.	642.	638.	634.	629.	623.	617.	609.	596.	576.	555.	518.	466.	442.	395.	230.	136.					
-11.0	637.	637.	635.	634.	633.	629.	624.	618.	612.	605.	591.	570.	547.	509.	454.	490.	386.	225.	132.					
-13.0	630.	631.	630.	630.	627.	622.	618.	612.	605.	595.	581.	560.	536.	498.	442.	475.	290.	218.	128.					
-15.0	622.	623.	623.	622.	617.	613.	609.	602.	595.	585.	569.	547.	524.	486.	429.	464.	279.	210.	123.					
-17.0	612.	613.	613.	610.	607.	603.	598.	590.	583.	572.	556.	534.	510.	472.	415.	449.	268.	202.	119.					
-19.5	598.	598.	598.	595.	590.	585.	580.	574.	565.	554.	539.	516.	489.	449.	392.	428.	254.	192.	113.					
-22.5	577.	577.	578.	572.	569.	565.	557.	549.	540.	530.	514.	492.	461.	418.	362.	396.	235.	179.	105.					
-25.5	550.	551.	550.	547.	544.	540.	531.	520.	511.	499.	483.	459.	426.	382.	413.	314.	217.	164.	96.					
-29.0	510.	508.	505.	503.	501.	495.	487.	479.	467.	456.	435.	411.	378.	421.	325.	243.	194.	147.	86.					
-33.0	448.	445.	443.	440.	436.	429.	423.	416.	403.	392.	374.	501.	474.	345.	252.	211.	168.	126.	73.					
-37.5	369.	367.	368.	365.	363.	358.	350.	342.	332.	477.	449.	340.	267.	240.	209.	176.	138.	103.						
-42.5	297.	295.	300.	307.	316.	318.	282.	271.	264.	253.	241.	224.	207.	187.	163.	136.	107.	80.						
-47.5	221.	220.	220.	218.	215.	212.	207.	201.	195.	189.	179.	167.	155.	139.	121.	100.	78.							
-55.0	122.	122.	122.	121.	119.	117.	114.	111.	108.	104.	99.	93.	86.	78.	68.									
-65.0																								
-75.0																								
-85.0																								
-90.0																								

BEAM EDGE = 328. CP = 50% OF MAX
 FIELD EDGE = 66. CP = 10% OF MAX

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LUMEN TABULATION
 AVERAGE OF RIGHT AND LEFT SIDES

	0	2	4	6	8	10	12	14	16	18	21	24	27	31	35	40	45	50	60	70	80	90	TOTAL
90	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
70	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.
60	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	18.
50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	15.
45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	20.
40	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	24.
35	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	22.
31	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	24.
27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	19.
24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	0.	0.	0.	20.
21	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.	1.	1.	1.	0.	0.	0.	21.
18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	14.
16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
-2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
-4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	15.
-6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
-8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
-10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
-12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	14.
-14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	14.
-16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	14.
-18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	14.
-21	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	0.	0.	0.	20.
-24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	19.
-27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	18.
-31	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	21.
-35	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	19.
-40	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	20.
-45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	15.
-50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	11.
-60	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	12.
-70	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.
-80	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
-90	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	34.	34.	34.	34.	33.	33.	32.	31.	31.	44.	41.	38.	46.	38.	41.	32.	19.	19.	5.	1.	0.	620.	

LUMEN TOTAL THIS PAGE = 620.

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 PREPARED FOR: RAB LIGHTING INC.

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 DATE SAMPLE TESTED: 04/27/16

LUMEN TABULATION - FIELD ONLY
 AVERAGE OF RIGHT AND LEFT SIDES

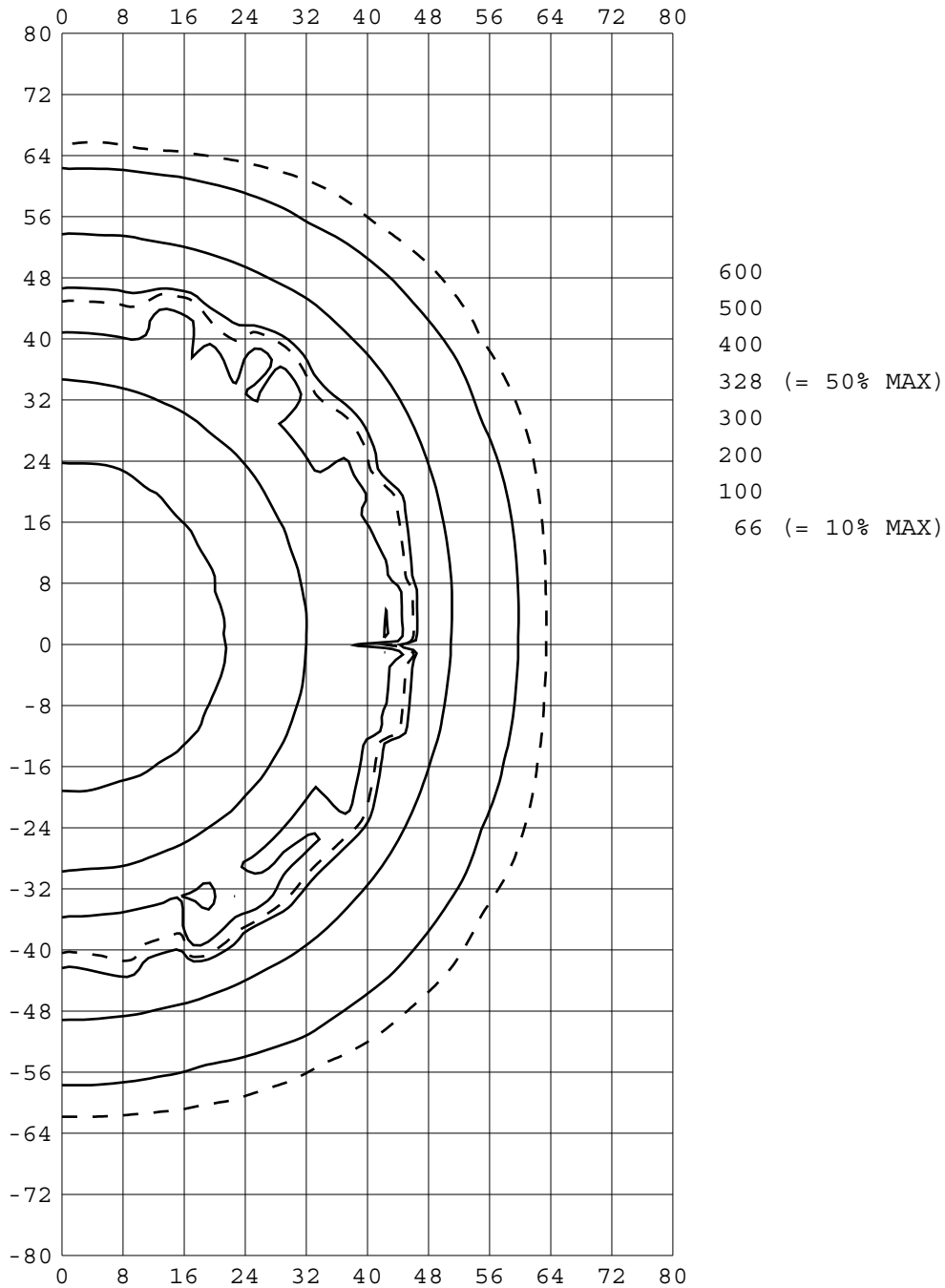
	0	2	4	6	8	10	12	14	16	18	21	24	27	31	35	40	45	50	60	70	80	90	TOTAL
90																							0.
80																							0.
70																							2.
60		0.	0.	0.	0.	0.																	16.
50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.					14.
45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.					19.
40	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.				24.
35	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	1.	1.	1.	1.	1.				22.
31	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	1.	1.	1.				24.
27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				19.
24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.				20.
21	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.	1.	1.	1.				21.
18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				14.
16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				14.
14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				15.
12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.				15.
10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.				15.
8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.				15.
6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				15.
4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				15.
2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				15.
0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				15.
-2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				15.
-4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.				15.
-6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				15.
-8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				15.
-10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				15.
-12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				15.
-14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				14.
-16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				14.
-18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.				14.
-21	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.				20.
-24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				19.
-27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.				17.
-31	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.				21.
-35	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.				19.
-40	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	1.					19.
-45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.					14.
-50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.						10.
-60	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.								10.
-70																							0.
-80																							0.
-90																							0.
	34.	34.	34.	33.	33.	32.	31.	31.	30.	43.	40.	37.	45.	37.	40.	30.	17.	15.	0.	0.	0.		595.

LUMEN TOTAL THIS PAGE = 595.

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ISSUE DATE: 04/27/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 7
DATE SAMPLE TESTED: 04/27/16

ISOCANDELA CURVES
AVERAGE OF RIGHT AND LEFT SIDES



REPORT NUMBER: RAB01901
DATE: 4/26/2016
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: BULLET12

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ADDRESS: 170 LUDLOW AVE, NORTHVALE, NI 07647

LUMINAIRE: CAST FINNED METAL HEAT SINK, MOLDED TEXTURED PLASTIC REFLECTOR WITH SEMI-DIFFUSE FINISH, 1 CIRCUIT BOARD WITH 24 LEDS, CLEAR MICRO-PRISMATIC GLASS LENS IN CAST BROWN PAINTED METAL FRAME, LENS PRISMS OUT.

LAMP: TWENTY-FOUR WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

DRIVER: INTEGRAL

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120.0 , 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due:
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	N/A
	OCEAN OPTICS QE65PRO Spectroradiometer	2/26/17
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	4/4/17

OBJECT OF TEST: Measure the Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRIa,1-14), Chromaticity Coordinates (x,y; u'v'), ANSI C78.377 Duv, and electrical data including ANSI C82.77-2002 Power Factor (PF) and Total Harmonic Distortion (THD) to the test sample. Report Off-State Power.

PROCEDURE: The test sample was provided by the customer and had an unknown number of burn hours. The test sample was mounted inside the integrating sphere and allowed to stabilize. After stabilization occurred, measurements were taken. In order to measure mean performance, multiple data sets were recorded and averaged. Readings were taken with the test sample operating at 120.0 input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology. Off-State Power was reported with no voltage applied to the sample.

*NOTE: Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.

RESULTS: (continued subsequent pages)

Checked	<u>X.CAO</u>
Approved	<u>D.WANG-MUNSON</u> Lighting Engineer

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RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3526
Chromaticity Ordinate y	0.3671
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2105
Chromaticity Ordinate v'	0.4931
Correlated Color Temp CCT (K)	4791
Color Rendering Index (CRIa)	82
Color Rendering Index 1 (Light greyish red)	79
Color Rendering Index 2 (Dark greyish yellow)	87
Color Rendering Index 3 (Strong yellowish green)	92
Color Rendering Index 4 (Moderate yellowish green)	81
Color Rendering Index 5 (Light bluish green)	79
Color Rendering Index 6 (Light blue)	82
Color Rendering Index 7 (Light violet)	88
Color Rendering Index 8 (Light reddish purple)	67
Color Rendering Index 9 (Strong red)	6
Color Rendering Index 10 (Strong yellow)	68
Color Rendering Index 11 (Strong green)	79
Color Rendering Index 12 (Strong blue)	56
Color Rendering Index 13 (Light yellowish pink (skin))	81
Color Rendering Index 14 (Moderate olive green (leaf))	96
ANSI C78.377-2008 Duv	0.005
Total Radiant Flux (milliWatts)	3803 *
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.111
Input Power (Watts)	13.2
Input Power Factor (%)	99.3
Input Current THD (%)	11.6
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

*NOTE:

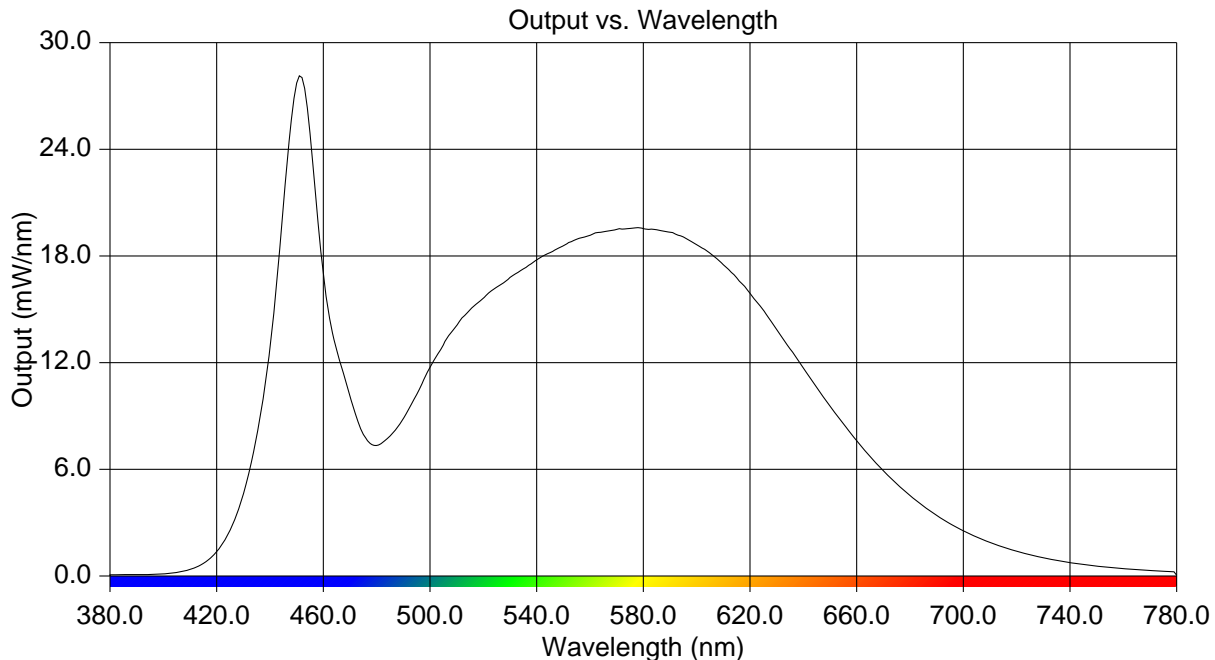
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.065	515	14.972	650	9.552
385	0.074	520	15.616	655	8.568
390	0.077	525	16.250	660	7.608
395	0.088	530	16.794	665	6.728
400	0.125	535	17.274	670	5.919
405	0.194	540	17.795	675	5.184
410	0.365	545	18.187	680	4.526
415	0.707	550	18.567	685	3.933
420	1.370	555	18.943	690	3.416
425	2.573	560	19.162	695	2.943
430	4.611	565	19.365	700	2.543
435	7.851	570	19.497	705	2.191
440	12.814	575	19.549	710	1.891
445	20.789	580	19.541	715	1.619
450	27.729	585	19.477	720	1.396
455	24.914	590	19.347	725	1.193
460	16.989	595	19.073	730	1.022
465	12.719	600	18.639	735	0.876
470	10.114	605	18.151	740	0.755
475	7.963	610	17.507	745	0.649
480	7.344	615	16.777	750	0.559
485	7.864	620	15.902	755	0.481
490	8.863	625	14.950	760	0.415
495	10.205	630	13.862	765	0.356
500	11.746	635	12.779	770	0.308
505	12.994	640	11.695	775	0.265
510	14.100	645	10.622	780	0.040



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CIE Chromaticity Diagram

