

REPORT NUMBER: RAB00932

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ISSUE DATE: 06/09/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: BAYLED104NW+GDBAYLED78FP (Clear Flat Glass Lens with Frosted Polyshield - standoffs installed)

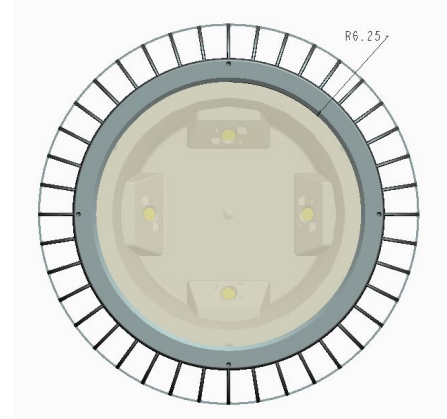
(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	3087	3087	3087	3087	3087
5	3071	3071	3072	3071	3071
15	2939	2941	2941	2940	2940
25	2681	2679	2679	2681	2678
35	2333	2334	2334	2335	2339
45	1928	1929	1935	1930	1934
55	1519	1521	1522	1519	1520
65	1107	1165	1081	1149	1096
75	605	748	858	763	617
85	148	140	139	137	152
90	17	20	20	22	22
95	87	93	91	93	87
105	156	173	176	173	156
115	117	120	117	119	118
125	72	73	70	73	72
135	39	39	38	39	38
145	12	12	13	12	13
155	11	10	10	10	10
165	9	9	9	9	9
175	4	4	5	4	4
180	3	3	3	3	3

FLUX

292
829
1235
1460
1491
1361
1097
806
222
97
173
119
65
30
9
5
3
1



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	2355	25.3
0- 40	3815	41.1
0- 60	6667	71.7
0- 90	8792	94.6
90-120	389	4.2
90-130	455	4.9
90-150	494	5.3
90-180	502	5.4
0-180	9294	100.0

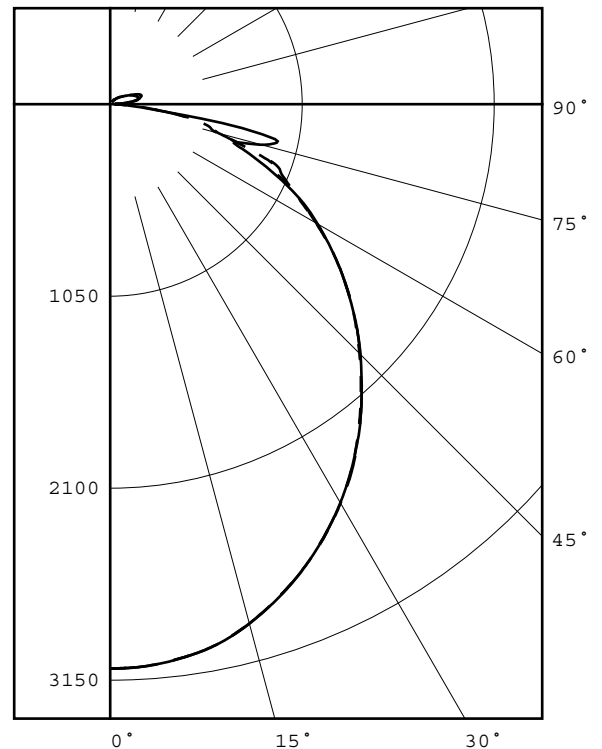
TOTAL INPUT WATTS = 117.4

EFFICACY = 79.2 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.2 1.2



LEGEND:

0-deg: - - - - -
 45-deg: _____
 90-deg: - - - - -

Checked

X.CAO

Approved

D.WANG-MUNSON

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ADDITIONAL INFORMATION

LUMINAIRE: CAST 2-PIECE WHITE PAINTED FINNDED METAL HOUSING, 4 FLAT METAL HEAT SINKS WITH 4 EXTRUDED METAL HEAT SINKS, 4 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, MOLDED PLASTIC TRIM WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST WHITE PAINTED METAL LENS FRAME, WITH FROSTED POLYSHIELD IN FRONT HOLDED BY 4 METAL SHAFTS.
LAMPS: FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), TILTED 30-DEGREES FROM VERTICAL BASE-UP POSITION.
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
TOTAL INPUT WATTS: 117.37 W AT 277.0 VOLTS
TEST PROCEDURE: IESNA LM-79-08
TEST DISTANCE: 28.25 FEET
PREPARED FOR: RAB LIGHTING INC.
LED DRIVER: FOUR RAB RD26
ACCREDITED LABORATORY CODE 201058-0

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PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 108.8 X 108.9 DEGREES
FIELD ANGLE (10%) : 164.4 X 164.4 DEGREES

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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	3087	3087	3087	3087	3087
5.0	3071	3071	3072	3071	3071
10.0	3027	3027	3028	3028	3027
15.0	2939	2941	2941	2940	2940
20.0	2820	2823	2822	2823	2821
25.0	2681	2679	2679	2681	2678
30.0	2519	2516	2517	2519	2516
35.0	2333	2334	2334	2335	2339
40.0	2131	2133	2138	2133	2137
45.0	1928	1929	1935	1930	1934
50.0	1729	1722	1728	1723	1729
55.0	1519	1521	1522	1519	1520
60.0	1300	1331	1311	1362	1301
65.0	1107	1165	1081	1149	1096
70.0	949	831	827	828	962
75.0	605	748	858	763	617
80.0	451	616	692	616	445
85.0	148	140	139	137	152
90.0	17	20	20	22	22
95.0	87	93	91	93	87
100.0	153	161	158	160	152
105.0	156	173	176	173	156
110.0	137	152	158	153	137
115.0	117	120	117	119	118
120.0	96	93	88	93	96
125.0	72	73	70	73	72
130.0	53	55	54	55	53
135.0	39	39	38	39	38
140.0	24	23	24	23	24
145.0	12	12	13	12	13
150.0	9	9	9	9	9
155.0	11	10	10	10	10
160.0	11	10	11	10	11
165.0	9	9	9	9	9
170.0	7	7	7	7	7
175.0	4	4	5	4	4
180.0	3	3	3	3	3

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ZONAL LUMEN SUMMARY

0- 5	74.
5- 10	218.
10- 15	354.
15- 20	475.
20- 25	577.
25- 30	658.
30- 35	715.
35- 40	745.
40- 45	752.
45- 50	739.
50- 55	705.
55- 60	655.
60- 65	602.
65- 70	496.
70- 75	414.
75- 80	392.
80- 85	183.
85- 90	39.
90- 95	26.
95-100	71.
100-105	89.
105-110	85.
110-115	68.
115-120	51.
120-125	38.
125-130	27.
130-135	19.
135-140	12.
140-145	6.
145-150	3.
150-155	2.
155-160	2.
160-165	2.
165-170	1.
170-175	0.
175-180	0.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	74
5- 10	218
10- 15	354
15- 20	475
20- 25	577
25- 30	658
30- 35	715
35- 40	745
40- 45	752
45- 50	739
50- 55	705
55- 60	655
60- 65	602
65- 70	496
70- 75	414
75- 80	392
80- 85	183
85- 90	39
90- 95	26
95-100	71
100-105	89
105-110	85
110-115	68
115-120	51
120-125	38
125-130	27
130-135	19
135-140	12
140-145	6
145-150	3
150-155	2
155-160	2
160-165	2
165-170	1
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	292
0- 20	1121
0- 30	2355
0- 40	3815
0- 50	5306
0- 60	6667
0- 70	7764
0- 80	8570
0- 90	8792
0-100	8889
0-110	9062
0-120	9181
0-130	9247
0-140	9277
0-150	9286
0-160	9291
0-170	9293
0-180	9294

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	118	118	118	118	114	114	114	114	108	108	108	102	102	102	97	97	97	95
1	107	102	97	93	104	99	95	91	94	90	87	89	86	84	85	82	80	78
2	97	88	81	75	94	86	79	74	82	76	71	77	73	69	74	70	67	64
3	88	77	69	62	85	75	68	61	72	65	60	68	63	58	65	60	56	54
4	81	68	59	53	78	67	58	52	63	56	51	60	54	49	58	52	48	46
5	74	61	52	45	72	60	51	45	57	49	44	54	48	43	52	46	42	39
6	68	55	46	39	66	54	45	39	51	44	38	49	43	37	47	41	37	35
7	63	50	41	35	61	49	40	34	47	39	34	45	38	33	43	37	33	31
8	59	45	37	31	57	44	36	31	43	35	30	41	35	30	39	34	29	27
9	55	42	33	28	53	41	33	28	39	32	27	38	31	27	36	31	26	25
10	52	38	31	25	50	38	30	25	36	29	25	35	29	24	34	28	24	22

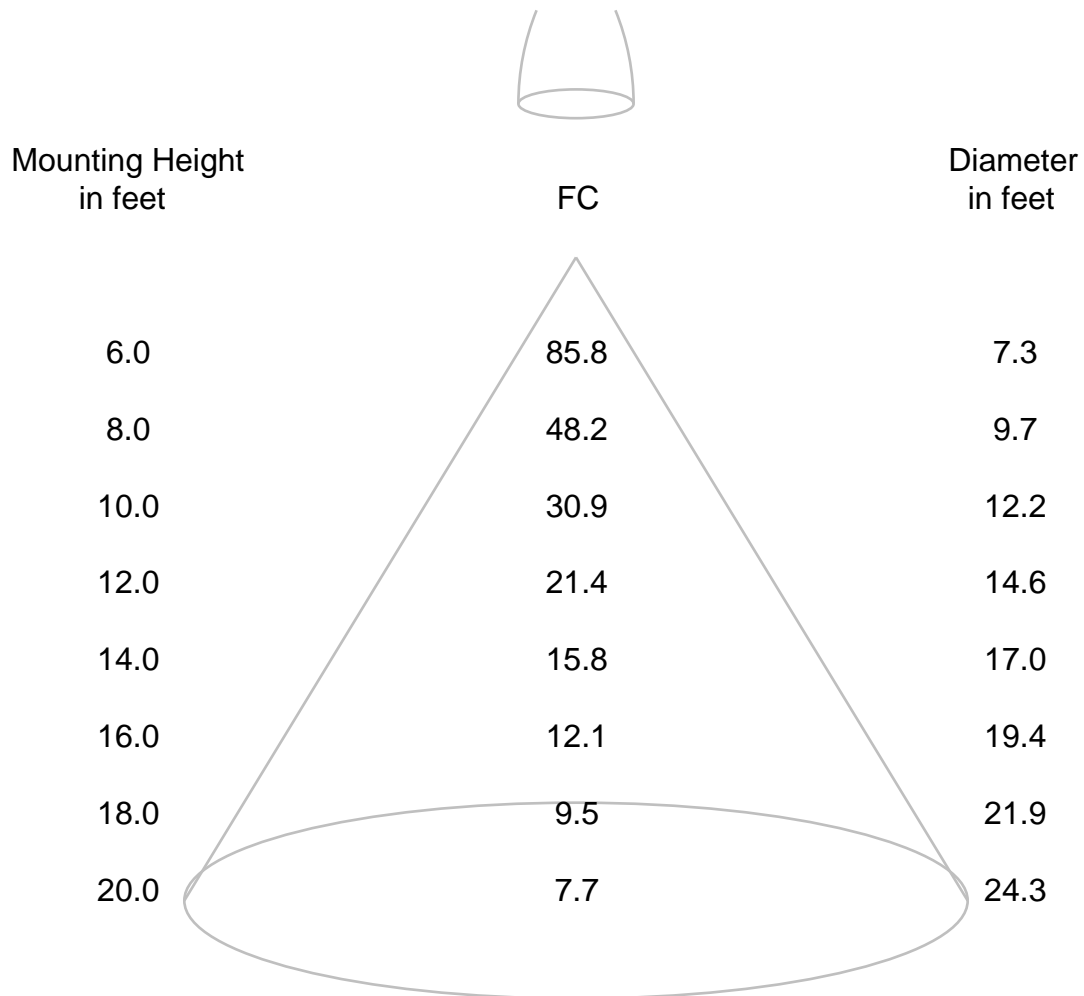
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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CONE OF LIGHT DIAGRAM

(diameter shown is where fc value is half the fc at nadir)



Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.

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 CATALOG NUMBER: BAYLED104NW+GDBAYLED78FP (Clear Flat Glass Lens with Frosted Polyshield - standoffs installed)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST 2-PIECE WHITE PAINTED FINNDED METAL HOUSING, 4 FLAT METAL HEAT SINKS WITH 4 EXTRUDED METAL HEAT SINKS, 4 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, MOLDED PLASTIC TRIM WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST WHITE PAINTED METAL LENS FRAME, WITH FROSTED POLYSHIELD IN FRONT HOLDED BY 4 METAL SHAFTS.

LAMP: FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), TILTED 30-DEGREES FROM VERTICAL BASE-UP POSITION.

DRIVER: FOUR RD26S

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (120.0 AND 277.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	CHROMA PROGRAMMABLE AC POWER SOURCE MODEL 61602	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/9/16
	OCEAN OPTICS QE65PRO Spectroradiometer	6/2/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	6/2/16

OBJECT OF TEST: Measure the Absolute Flux in lumens*, 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. Measure electrical data including Total Harmonic Distortion (THD) at maximum nominal rated input voltage. Report Off-State Power.

PROCEDURE: The test sample was mounted inside the integrating sphere, energized, 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 60 HZ input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. Electrical data was also recorded at maximum nominal rated input voltage (277.0 VAC). 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:

PHOTOMETRIC	
Total Integrated Flux (lumens)	9294 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3825
Chromaticity Ordinate y	0.3861
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2227
Chromaticity Ordinate v'	0.5059
Correlated Color Temp CCT (K)	4013
ANSI C78.377-2008 Duv	0.004
Total Radiant Flux (milliWatts)	27786 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.981
Input Power (Watts)	116.6
Input Power Factor (%)	99.0
Input Current THD (%)	13.9
Input Voltage THD (%)	0.3
EFFICACY (Lumens/Watt)	
	79.7
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.491
Input Power (Watts)	117.4
Input Power Factor (%)	86.3
Input Current THD (%)	21.8
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	83
R1 Light greyish red	81
R2 Dark greyish yellow	87
R3 Strong yellowish green	92
R4 Moderate yellowish green	84
R5 Light bluish green	81
R6 Light blue	83
R7 Light violet	88
R8 Light reddish purple	66
R9 Strong red	9
R10 Strong yellow	69
R11 Strong green	84
R12 Strong blue	60
R13 Light yellowish pink (skin)	82
R14 Moderate olive green (leaf)	95

*NOTE:

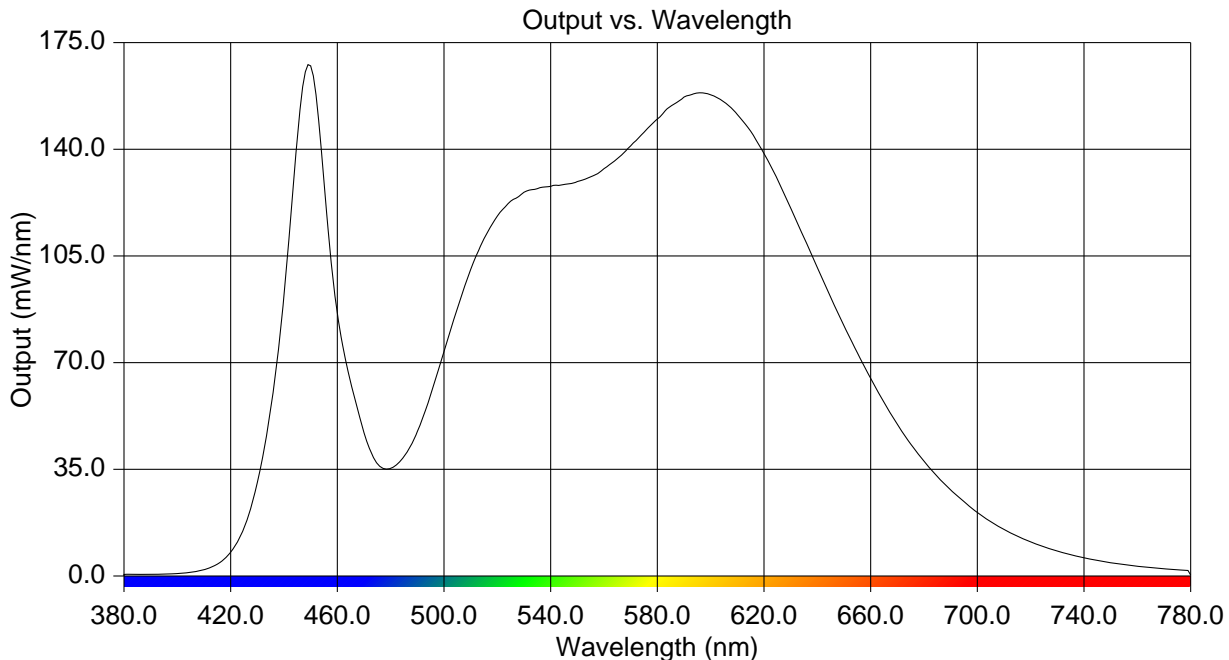
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.509	515	110.689	650	82.146
385	0.530	520	118.094	655	73.265
390	0.541	525	122.991	660	64.876
395	0.628	530	125.921	665	57.008
400	0.788	535	127.091	670	49.844
405	1.204	540	127.848	675	43.311
410	2.059	545	128.427	680	37.625
415	3.882	550	129.430	685	32.628
420	7.832	555	131.006	690	28.215
425	15.752	560	133.654	695	24.421
430	30.680	565	136.978	700	20.827
435	54.514	570	141.134	705	17.811
440	92.050	575	145.588	710	15.243
445	143.903	580	149.907	715	13.072
450	167.393	585	154.184	720	11.235
455	129.392	590	157.151	725	9.588
460	86.162	595	158.556	730	8.170
465	63.455	600	157.997	735	6.941
470	47.007	605	155.544	740	5.953
475	36.930	610	151.416	745	5.090
480	35.363	615	145.961	750	4.396
485	39.146	620	138.630	755	3.743
490	47.404	625	130.421	760	3.226
495	59.382	630	120.711	765	2.763
500	73.797	635	111.014	770	2.379
505	87.889	640	101.252	775	2.038
510	100.568	645	91.381	780	0.306



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CIE Chromaticity Diagram

