

REPORT NUMBER: ITL79692

PAGE: 1 OF 7

ISSUE DATE: 11/07/13

PREPARED FOR: RAB LIGHTING, INC.

CATALOG NUMBER: BAYLED78Y (FLAT GLASS LENS - CEILING AND/OR PENDENT MOUNT - STANDARD DISTRIBUTION)

LUMINAIRE: CAST 2-PIECE WHITE PAINTED FINNED METAL HOUSING, 3 FLAT METAL HEAT SINKS WITH 3 EXTRUDED METAL HEAT SINKS, 3 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST WHITE PAINTED METAL LENS FRAME.

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

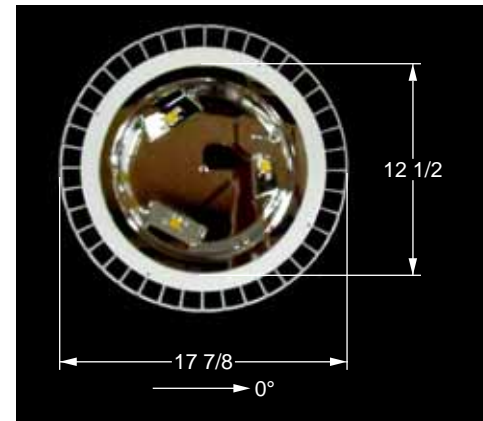
TOTAL INPUT WATTS = 88.2 AT 120.0 VOLTS

LED DRIVERS: THREE RAB RDF25U7-02

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVERS.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET



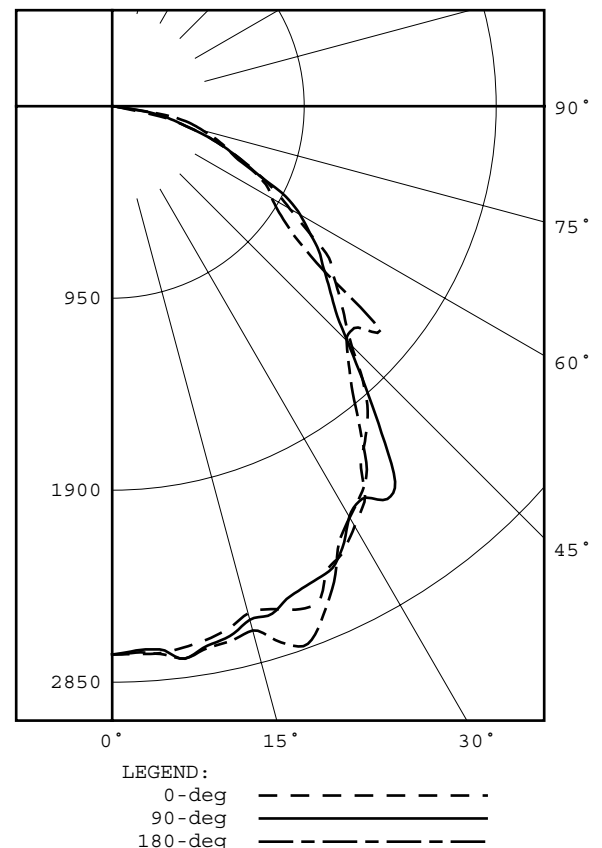
CANDELA DISTRIBUTION						FLUX
	0.0	45.0	90.0	135.0	180.0	
0	2713	2713	2713	2713	2713	
5	2717	2725	2698	2730	2721	260
15	2598	2732	2631	2634	2686	760
25	2525	2420	2539	2535	2597	1163
35	2145	2293	2373	2158	2196	1391
45	1675	1802	1647	1681	1640	1322
55	1310	1146	1248	1259	1083	1093
65	801	786	790	791	780	786
75	376	412	375	370	464	419
85	3	3	4	3	7	34
90	0	0	0	0	0	
95	0	0	0	0	0	0
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL ZONE	LUMEN LUMENS	SUMMARY	%FIXT
0- 30	2184		30.2
0- 40	3575		49.5
0- 60	5991		82.9
0- 90	7230		100.0
90-120	0		0.0
90-130	0		0.0
90-150	0		0.0
90-180	0		0.0
0-180	7230		100.0

EFFICACY = 82.0 lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 1.30 1.31 1.28
BEAM ANGLE (50%) : 103.2 X 99.4 DEGREES
FIELD ANGLE (10%) : 157.5 X 155.9 DEGREES



Checked M KLOPF
Approved R BEATTIE
Lighting Engineer



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LUMINOUS DIAMETER: 12.500

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 90-DEG	AVERAGE 180-DEG
45	29919.	29419.	29294.
55	28847.	27482.	23848.
65	23939.	23610.	23311.
75	18349.	18300.	22644.
85	435.	580.	1014.



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CANDELA DISTRIBUTION LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	2713	2713	2713	2713	2713	2713	2713	2713	2713
5.0	2717	2722	2725	2685	2698	2699	2730	2767	2721
10.0	2681	2722	2748	2745	2711	2708	2725	2768	2722
15.0	2598	2632	2732	2746	2631	2618	2634	2726	2686
20.0	2651	2596	2652	2745	2579	2674	2652	2675	2831
25.0	2525	2555	2420	2486	2539	2539	2535	2511	2597
30.0	2400	2329	2401	2435	2347	2380	2334	2351	2350
35.0	2145	2190	2293	2190	2373	2141	2158	2393	2196
40.0	1967	1994	1979	1984	2050	1964	1984	2200	1852
45.0	1675	1680	1802	1726	1647	1657	1681	1716	1640
50.0	1469	1404	1419	1584	1404	1468	1450	1409	1729
55.0	1310	1265	1146	1128	1248	1256	1259	1210	1083
60.0	1015	1077	988	958	1074	1015	1070	1025	912
65.0	801	787	786	794	790	798	791	768	780
70.0	589	575	564	608	588	585	576	565	602
75.0	376	380	412	468	375	379	370	389	464
80.0	41	202	264	300	218	61	132	230	304
85.0	3	3	3	6	4	3	3	3	7
90.0	0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0	0
100.0	0	0	0	0	0	0	0	0	0
105.0	0	0	0	0	0	0	0	0	0
110.0	0	0	0	0	0	0	0	0	0
115.0	0	0	0	0	0	0	0	0	0
120.0	0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0	0
130.0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0
140.0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0
150.0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0
160.0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0
170.0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	65
5- 10	196
10- 15	320
15- 20	441
20- 25	544
25- 30	619
30- 35	678
35- 40	713
40- 45	684
45- 50	638
50- 55	578
55- 60	516
60- 65	442
65- 70	344
70- 75	256
75- 80	163
80- 85	33
85- 90	1
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	260
0- 20	1021
0- 30	2184
0- 40	3575
0- 50	4897
0- 60	5991
0- 70	6777
0- 80	7195
0- 90	7230
0-100	7230
0-110	7230
0-120	7230
0-130	7230
0-140	7230
0-150	7230
0-160	7230
0-170	7230
0-180	7230



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61
4	84	73	64	58	82	71	63	57	69	62	57	67	61	56	64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	40
7	67	53	45	39	65	53	44	39	51	44	38	50	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	40	34	46	39	34	44	38	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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 TEST SAMPLE.



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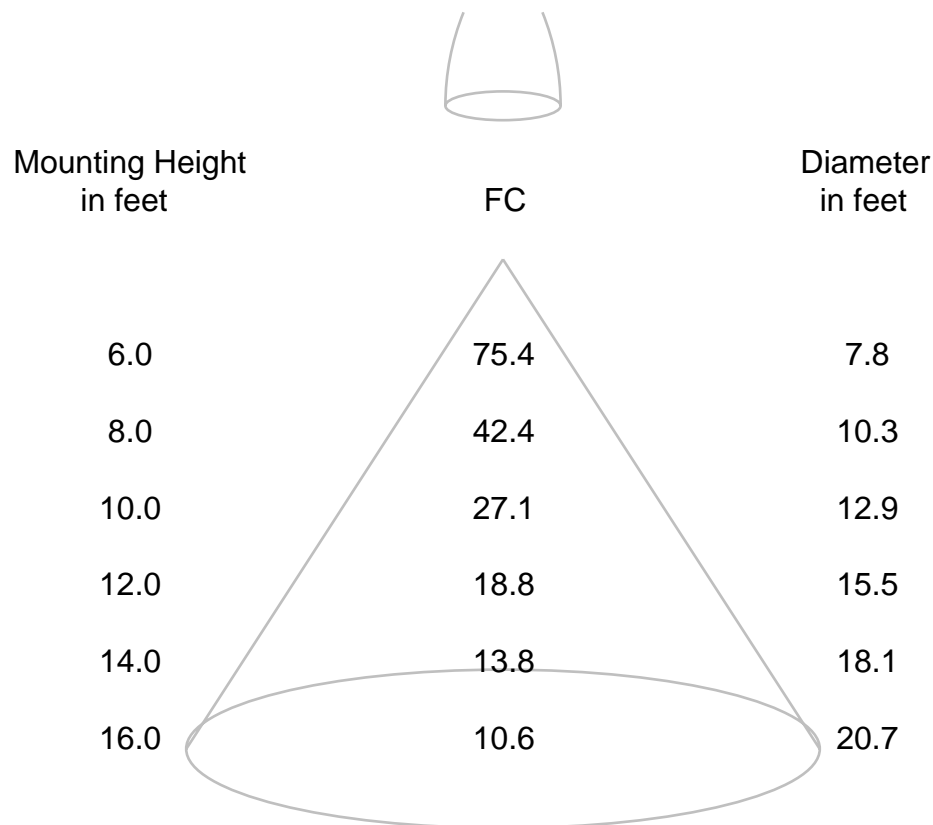
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CONE OF LIGHT DIAGRAM

(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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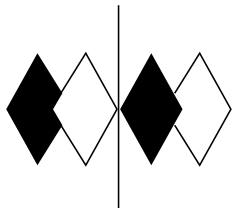
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PREPARED FOR: RAB LIGHTING, INC.
CATALOG NUMBER: BAYLED78Y (FLAT GLASS LENS - CEILING AND/OR PENDENT MOUNT - STANDARD DISTRIBUTION)

ADDRESS: 170 LUDLOW AVE
NORTHVALE, NJ 07647

LUMINAIRE: CAST 2-PIECE WHITE PAINTED FINNED METAL HOUSING, 3 FLAT METAL HEAT SINKS WITH 3 EXTRUDED METAL HEAT SINKS, 3 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST WHITE PAINTED METAL LENS FRAME.

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

DRIVERS: THREE RAB RDF25U7-02

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120.0 AND 277.0 VAC, 60Hz) TO THE LED DRIVERS.

INSTRUMENTS:	Associated Power Technologies APT5040 AC Power Source	Calibration Due: N/A
	Yokogawa WT210 Digital Power Meter #9	02/28/14
	Ocean Optics QE65000 Spectroradiometer	10/16/14
	ITL 2.0m Diameter Integrating Sphere S20-2, 4PI Geometry	10/16/14

OBJECT OF TEST: Measure the Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI_a,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. Measure electrical data including Total Harmonic Distortion (THD) at maximum rated voltage.

PROCEDURE: The test sample was provided by the customer and had an unknown number of operating 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 VAC input. Electrical data was also recorded at maximum nominal rated input voltage (277.0 VAC). All testing performed 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)

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Checked	<u>P O'CONNOR</u>
Approved	<u>L GRABA</u> Lighting Engineer



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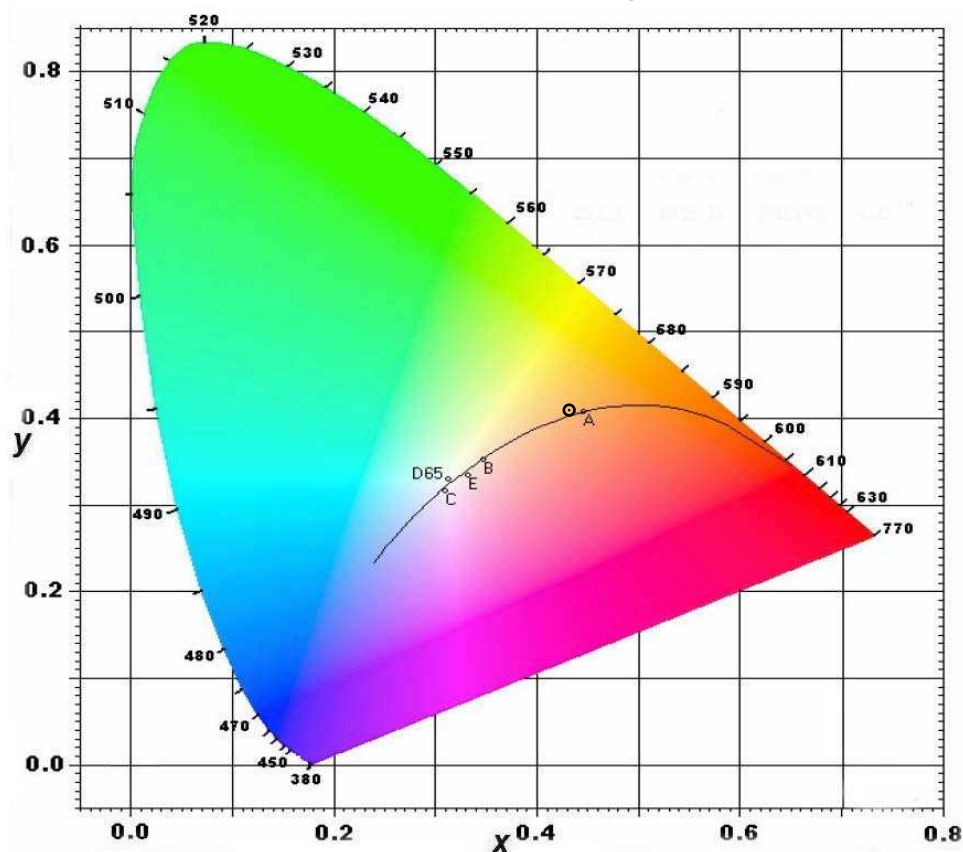
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CIE Chromaticity Diagram





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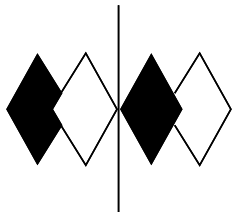
RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4316
Chromaticity Ordinate y	0.4090
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2451
Chromaticity Ordinate v'	0.5225
Correlated Color Temp CCT (K)	3131
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	21201 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.742
Input Power (Watts)	88.2
Input Power Factor (%)	99.1
Input Current THD (%)	13.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.372
Input Power (Watts)	88.7
Input Power Factor (%)	86.1
Input Current THD (%)	20.6
Input Voltage THD (%)	0.1

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	81
R1 Light greyish red	78
R2 Dark greyish yellow	87
R3 Strong yellowish green	96
R4 Moderate yellowish green	80
R5 Light bluish green	79
R6 Light blue	85
R7 Light violet	83
R8 Light reddish purple	57
R9 Strong red	-3
R10 Strong yellow	71
R11 Strong green	80
R12 Strong blue	63
R13 Light yellowish pink (skin)	80
R14 Moderate olive green (leaf)	98

*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	0.440	515	68.298	650	76.834
385	0.428	520	74.006	655	68.349
390	0.426	525	78.294	660	60.435
395	0.451	530	81.537	665	53.097
400	0.550	535	84.143	670	46.413
405	0.742	540	86.498	675	40.356
410	1.136	545	89.156	680	34.989
415	1.927	550	92.214	685	30.203
420	3.594	555	96.227	690	26.039
425	6.932	560	101.247	695	22.372
430	13.073	565	107.314	700	19.189
435	22.863	570	114.041	705	16.423
440	38.838	575	121.167	710	14.060
445	63.667	580	128.078	715	12.005
450	80.838	585	134.368	720	10.266
455	68.923	590	139.376	725	8.756
460	47.719	595	142.681	730	7.479
465	35.831	600	144.097	735	6.370
470	27.915	605	143.270	740	5.436
475	22.382	610	140.584	745	4.654
480	21.160	615	135.775	750	3.995
485	23.413	620	129.405	755	3.416
490	28.114	625	121.842	760	2.936
495	35.193	630	113.260	765	2.520
500	43.940	635	104.202	770	2.165
505	52.975	640	95.052	775	1.860
510	61.315	645	85.846	780	1.609

