



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : PANEL2X2-34YN-D10 - PROPRATED FROM ITL80211.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST]SCALED FROM ITL80211  
 [TESTLAB]SCALED POTOMETRY  
 [ISSUEDATE]12/17/13  
 [MANUFAC]RAB LIGHTING, INC.  
 [LUMCAT]PANEL2X2-34YN/D10(0-10V DIMMING)  
 [LUMINAIRE]FABRICATED WHITE PAINTED METAL HOUSING, 2 WHITE CIRCUIT  
 [MORE]BOARDS EACH WITH 120 LEDS, FROSTED HOLOGRAPHIC PLASTIC  
 [MORE]DIFFUSER. DIFFUSER FROSTED SIDE UP.  
 [LAMP]TWO HUNDRED FORTY WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL  
 [MORE]BASE-UP POSITION.  
 [OTHER]TOTAL INPUT WATTS = 35.8 AT 120.0 VOLTS  
 [\_ MOUNTING]RECESSED  
 [\_ LEDDRIVER]RAB RD-042-A0700C  
 [\_ NOTE]DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT  
 [MORE]VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER.  
 [OTHER]TEST PROCEDURE: IESNA LM-79-08  
 [OTHER]TEST DISTANCE = 35.0 FEET  
 [\_ ABSOLUTE]LUMENS]3347

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3347
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
Total Luminaire Watts	35.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.84 ft
Luminous Width (90-270)	1.84 ft
Luminous Height	0.00 ft

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : PANEL2X2-34YN-D10 - PROPRATED FROM ITL80211.IES****LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3499	3513	3518
55	3258	3270	3275
65	2951	2958	2966
75	2492	2479	2492
85	1435	1435	1435

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## CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0.0	1267.929	1267.929	1267.929	1267.929	1267.929
2.5	1265.861	1266.895	1266.895	1266.895	1265.861
5.0	1260.690	1261.724	1262.758	1261.724	1260.690
7.5	1253.450	1254.485	1254.485	1254.485	1253.450
10.0	1241.040	1242.074	1243.108	1242.074	1241.040
12.5	1226.561	1227.595	1227.595	1227.595	1226.561
15.0	1208.980	1208.980	1208.980	1208.980	1208.980
17.5	1187.262	1187.262	1188.296	1187.262	1187.262
20.0	1161.407	1161.407	1162.441	1162.441	1161.407
22.5	1134.517	1134.517	1135.552	1134.517	1133.483
25.0	1103.491	1103.491	1104.526	1104.526	1103.491
27.5	1069.363	1070.397	1070.397	1070.397	1069.363
30.0	1034.200	1034.200	1034.200	1035.234	1033.166
32.5	994.900	994.900	995.935	994.900	994.900
35.0	955.601	954.567	955.601	955.601	955.601
37.5	912.164	913.199	914.233	912.164	913.199
40.0	868.728	868.728	870.796	869.762	871.831
42.5	824.257	824.257	826.326	825.292	827.360
45.0	777.718	778.753	780.821	779.787	781.855
47.5	730.145	731.179	733.248	732.214	734.282
50.0	683.606	684.640	685.675	685.675	687.743
52.5	636.033	637.067	637.067	638.101	639.136
55.0	587.426	588.460	589.494	588.460	590.528
57.5	538.818	538.818	539.852	539.852	541.921
60.0	489.177	490.211	490.211	490.211	492.279
62.5	440.569	441.603	441.603	442.638	443.672
65.0	391.962	392.996	392.996	391.962	394.030
67.5	343.354	344.389	344.389	345.423	346.457
70.0	294.747	295.781	296.815	296.815	297.850
72.5	249.242	248.208	248.208	248.208	249.242
75.0	202.703	201.669	201.669	202.703	202.703
77.5	157.198	156.164	157.198	158.233	157.198
80.0	113.762	112.728	113.762	114.796	113.762
82.5	73.428	73.428	73.428	74.462	73.428
85.0	39.300	39.300	39.300	40.334	39.300
87.5	14.479	14.479	14.479	15.513	14.479
90.0	0.000	0.000	0.000	0.000	0.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : PANEL2X2-34YN-D10 - PROPRATED FROM ITL80211.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	460.68	N.A.	13.80
0-30	968.89	N.A.	28.90
0-40	1566.13	N.A.	46.80
0-60	2693.58	N.A.	80.50
0-80	3296.97	N.A.	98.50
0-90	3347.24	N.A.	100.00
10-90	3227.4	N.A.	96.40
20-40	1105.46	N.A.	33.00
20-50	1706.61	N.A.	51.00
40-70	1516.53	N.A.	45.30
60-80	603.39	N.A.	18.00
70-80	214.30	N.A.	6.40
80-90	50.27	N.A.	1.50
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3347.24	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	119.84
10-20	340.84
20-30	508.22
30-40	597.24
40-50	601.16
50-60	526.28
60-70	389.09
70-80	214.30
80-90	50.27
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

# IES INDOOR REPORT

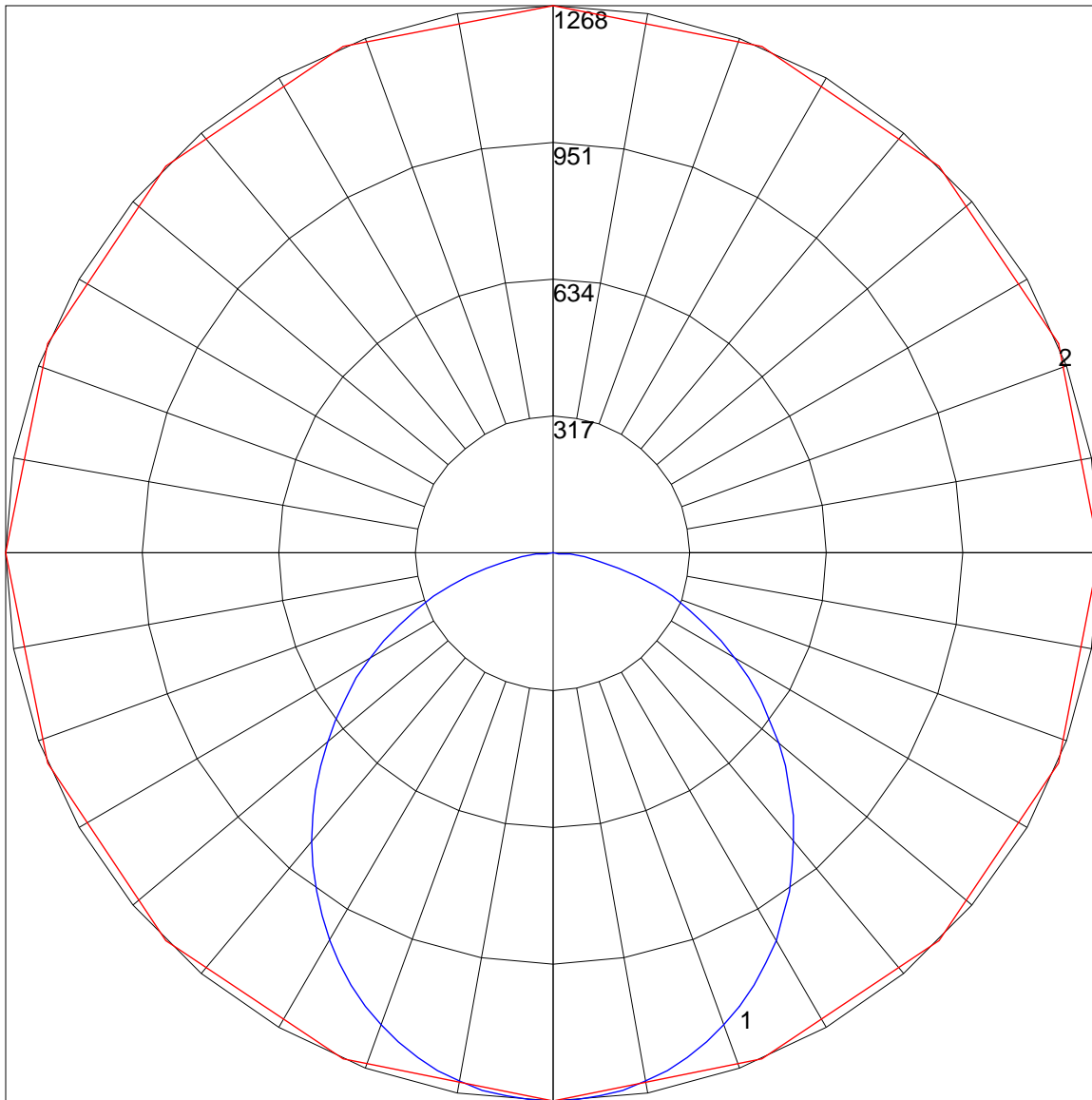
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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	37	64	51	43	37	50	42	37	48	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	35	30	40	34	30	28
10	54	41	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

POLAR GRAPH



Maximum Candela = 1267.929 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)



INDEPENDENT TESTING LABORATORIES, INC.  
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

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REPORT NUMBER: ITL80214  
DATE: 12/27/13  
PREPARED FOR: RAB LIGHTING, INC.  
CATALOG NUMBER: PANEL2X2-34YN

ADDRESS: 170 LUDLOW AVE  
NORTHVALE, NJ 07647

LUMINAIRE: FABRICATED WHITE PAINTED METAL HOUSING, 2 WHITE CIRCUIT BOARDS EACH WITH 120 LEDS, FROSTED HOLOGRAPHIC PLASTIC DIFFUSER. DIFFUSER FROSTED SIDE UP.

LAMP: TWO HUNDRED FORTY WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP POSITION.

DRIVER: RAB RD-042-A0700N

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

	Calibration Due:
INSTRUMENTS:	
Associated Power Technologies APT5010 AC Power Source	N/A
Yokogawa WT210 Digital Power Meter #6	10/31/14
Ocean Optics QE65000 Spectroradiometer	10/17/14
ITL 1.5m Diameter Integrating Sphere S15-2, 4PI Geometry	10/17/14

OBJECT OF TEST: Measure the Total Radiant Flux\*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI<sub>a</sub>,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.

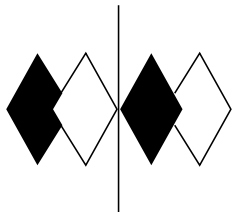
PROCEDURE: The test sample was provided by the customer and had an unknown number of operating hours. The test sample was mounted inside the integrating sphere and allowed to stabilize. After stabilization occurred, measurements were taken. In order to measure mean performance, multiple data sets were 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)

THIS ITL 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.

Checked	<i>N THOMAS</i>
Approved	<i>L GRABA</i>
	Lighting Engineer



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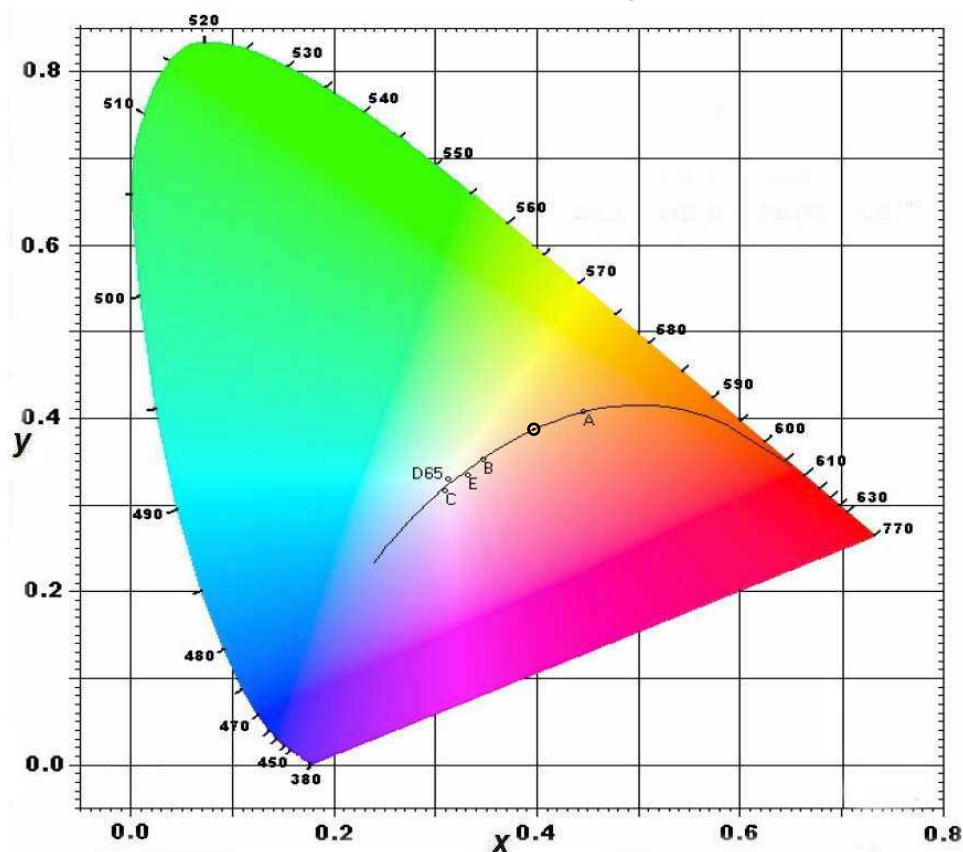
**NVLAP**  
NVLAP LAB CODE: 200925-0

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## CIE Chromaticity Diagram





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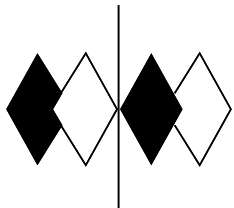
RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3968
Chromaticity Ordinate y	0.3870
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2317
Chromaticity Ordinate v'	0.5085
Correlated Color Temp CCT (K)	3663
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	10451 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.289
Input Power (Watts)	34.3
Input Power Factor (%)	98.9
Input Current THD (%)	8.0
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)	0.132
Input Power (Watts)	34.8
Input Power Factor (%)	95.2
Input Current THD (%)	7.8
Input Voltage THD (%)	0.2

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	84
R1 Light greyish red	83
R2 Dark greyish yellow	89
R3 Strong yellowish green	92
R4 Moderate yellowish green	84
R5 Light bluish green	83
R6 Light blue	84
R7 Light violet	89
R8 Light reddish purple	72
R9 Strong red	29
R10 Strong yellow	72
R11 Strong green	82
R12 Strong blue	63
R13 Light yellowish pink (skin)	84
R14 Moderate olive green (leaf)	95

\*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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NVLAP LAB CODE: 200925-0

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.360	515	33.137	650	38.077
385	0.383	520	35.576	655	35.337
390	0.428	525	37.544	660	32.571
395	0.501	530	39.306	665	29.841
400	0.606	535	40.892	670	27.181
405	0.895	540	42.444	675	24.654
410	1.309	545	44.010	680	22.253
415	1.989	550	45.610	685	20.018
420	3.416	555	47.157	690	17.965
425	5.880	560	48.698	695	16.076
430	9.957	565	50.058	700	14.327
435	16.128	570	51.356	705	12.712
440	26.841	575	52.500	710	11.234
445	43.334	580	53.451	715	9.931
450	51.622	585	54.228	720	8.739
455	41.707	590	54.750	725	7.680
460	29.971	595	54.991	730	6.745
465	23.536	600	54.955	735	5.918
470	18.330	605	54.668	740	5.180
475	14.860	610	54.009	745	4.545
480	13.941	615	52.977	750	3.988
485	14.589	620	51.620	755	3.499
490	16.506	625	49.933	760	3.070
495	19.651	630	48.055	765	2.698
500	23.292	635	45.836	770	2.365
505	26.958	640	43.389	775	2.074
510	30.250	645	40.770	780	1.821

