

**REPORT NUMBER:** RAB04484

**PAGE:** 1 OF 10

**ISSUE DATE:** 07/16/18

**DATE SAMPLE TESTED:** 07/16/18

**PREPARED FOR:** RAB LIGHTING INC. RC LIGHTING

**CATALOG NUMBER:** BRISKM48L-740

**LUMINAIRE:** CAST BROWN PAINTED METAL HOUSING, FORMED SPECULAR PAINTED REFLECTOR, 1 WHITE CIRCUIT BOARD WITH 77 LEDS, MOLDED FROSTED PLASTIC LENS.

**LAMPS:** SEVENTY SEVEN WHITE LIGHT EMITTING DIODES (LEDS), TILTED 30-DEGREE FROM VERTICAL BASE-UP POSITION.

**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.

**ABSOLUTE:** NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

**WATT:** TOTAL INPUT WATTS = 34.657 W AT 120.0 VAC.

**LED DRIVER:** LED DRIVER: RDD-DBFE-030-A0901-02

**PROCEDURE:** TEST PROCEDURE: IESNA LM-79-08

**NOTE:** LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE  
AMBIENT: 25.3

**NVLAP LAB CODE:** ACCREDITED LABORATORY CODE 201058-0



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.

Checked X.CAO

Approved D.WANG-MUNSON

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## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

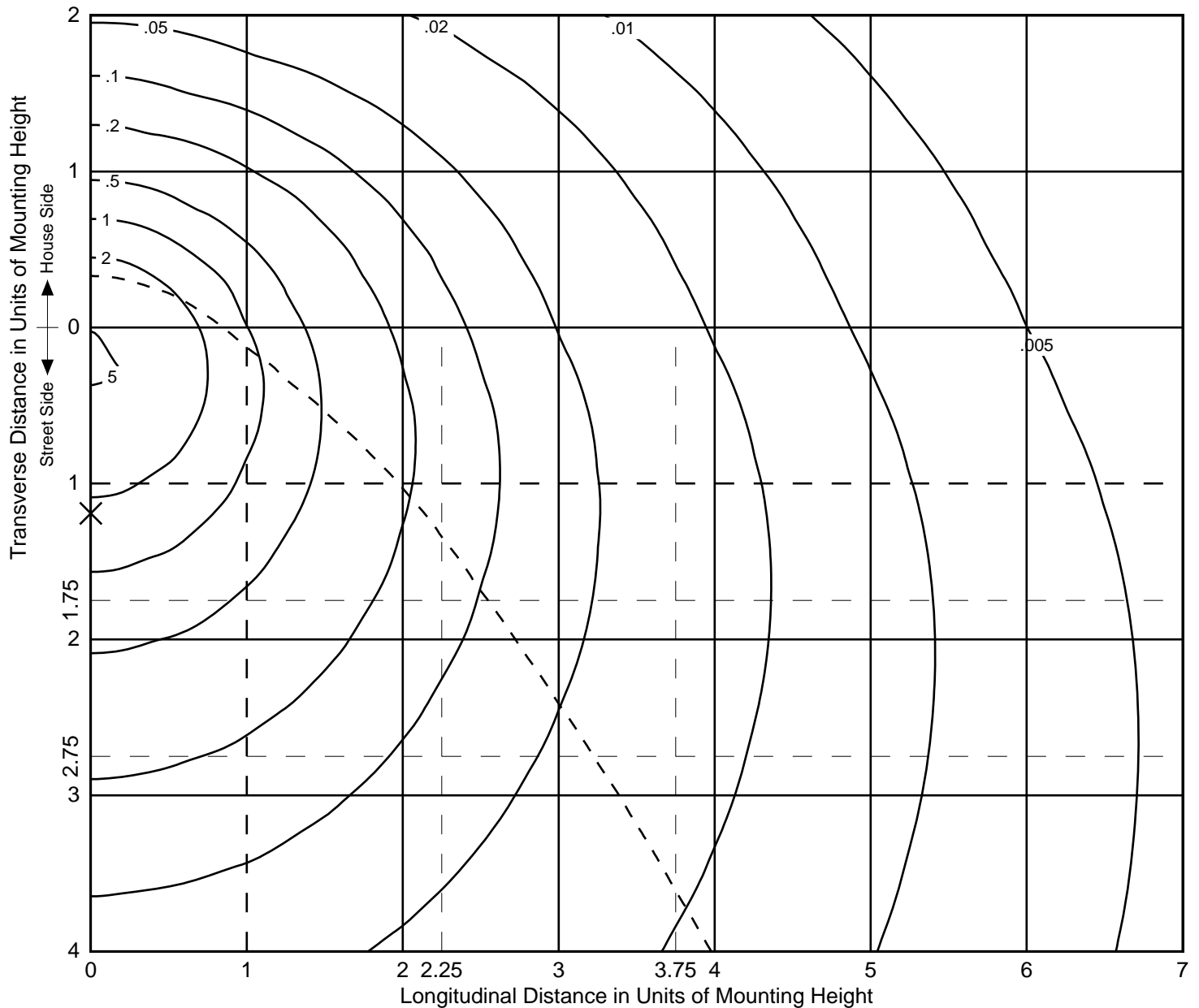
Values based on 15-foot mounting height

IES Classification: (does not classify)

Cutoff Classification (deprecated): Noncutoff

— — — — — 1/2 Maximum Candela trace

× Maximum Candela point



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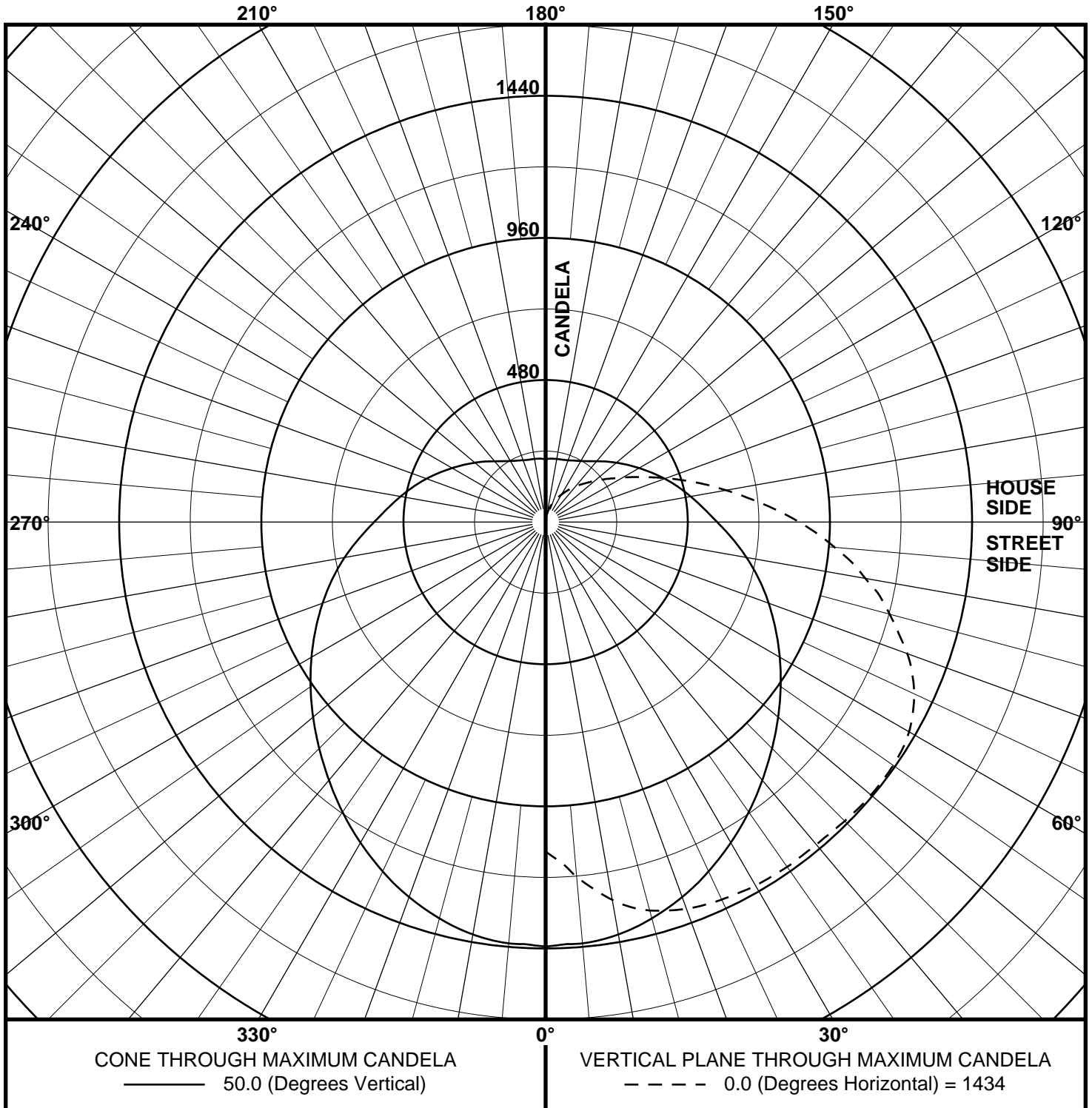
ISSUE DATE: 07/16/18

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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

CATALOG NUMBER: BRISKM48L-740

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



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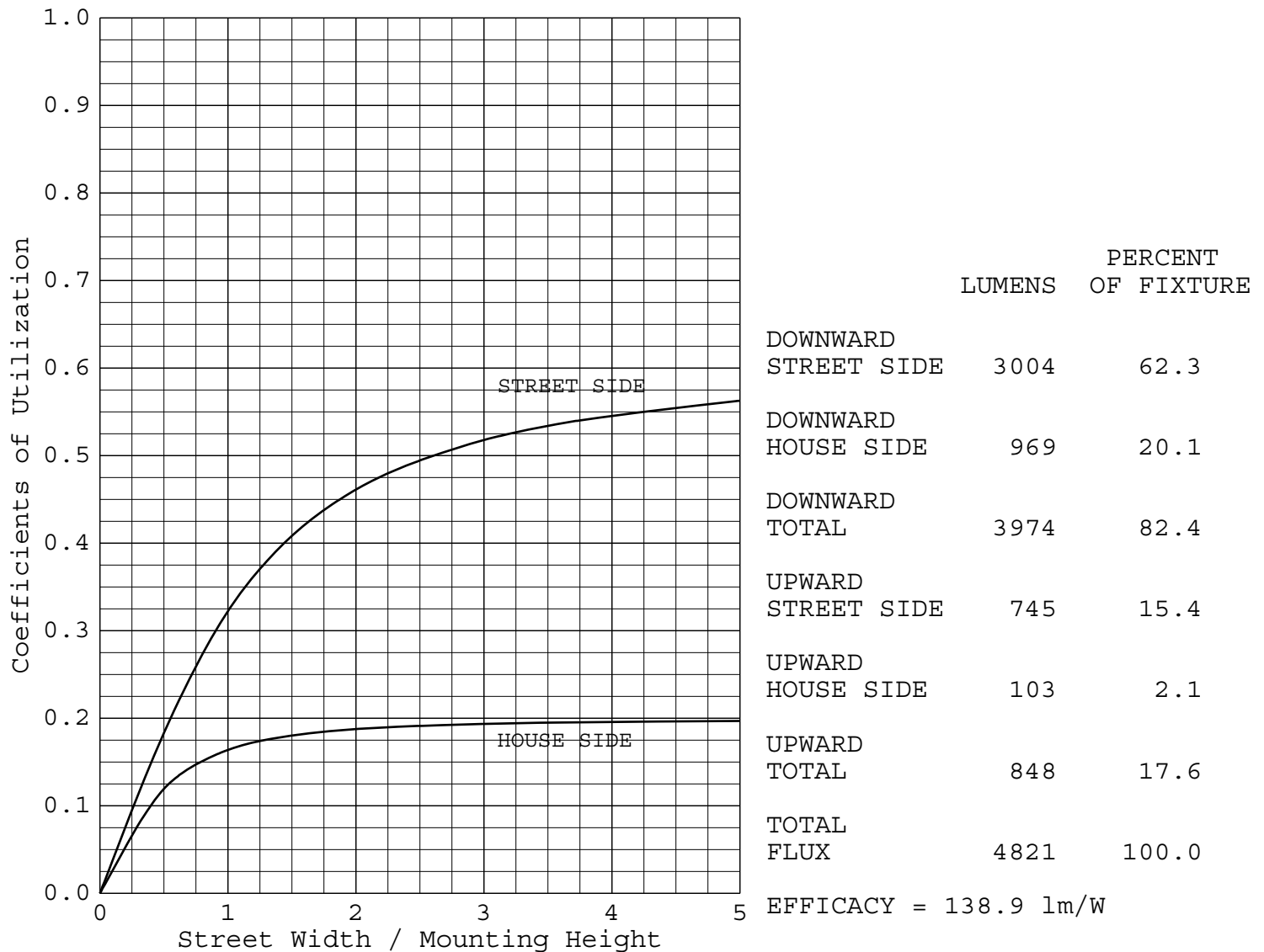
ISSUE DATE: 07/16/18

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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

CATALOG NUMBER: BRISKM48L-740

## COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



ALL CANDELA AND LUMENS 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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**PREPARED FOR:** RAB LIGHTING INC. RC LIGHTING

**CATALOG NUMBER:** BRISKM48L-740

BUG Rating			<div>B1</div> <div>U4</div> <div>G3</div>		
Zonal Summary			Zone Ratings		
			B	U	G
Forward					
FL	(0° – 30°)	3004			
FM	(30° – 60°)	520.8			
FH	(60° – 80°)	1256.4			
FVH	(80° – 90°)	886.7			G1
		340.5			G3
Backward					
BL	(0° – 30°)	969			
BM	(30° – 60°)	330.0			
BH	(60° – 80°)	436.0			
BVH	(80° – 90°)	163.4			G1
		39.8			G1
Upward					
UL	(90° – 100°)	848			
UH	(100° – 180°)	281.4			U3
		566.3			U4
Trapped Light					
Total Flux					
		0			
		4821			
		100.0			

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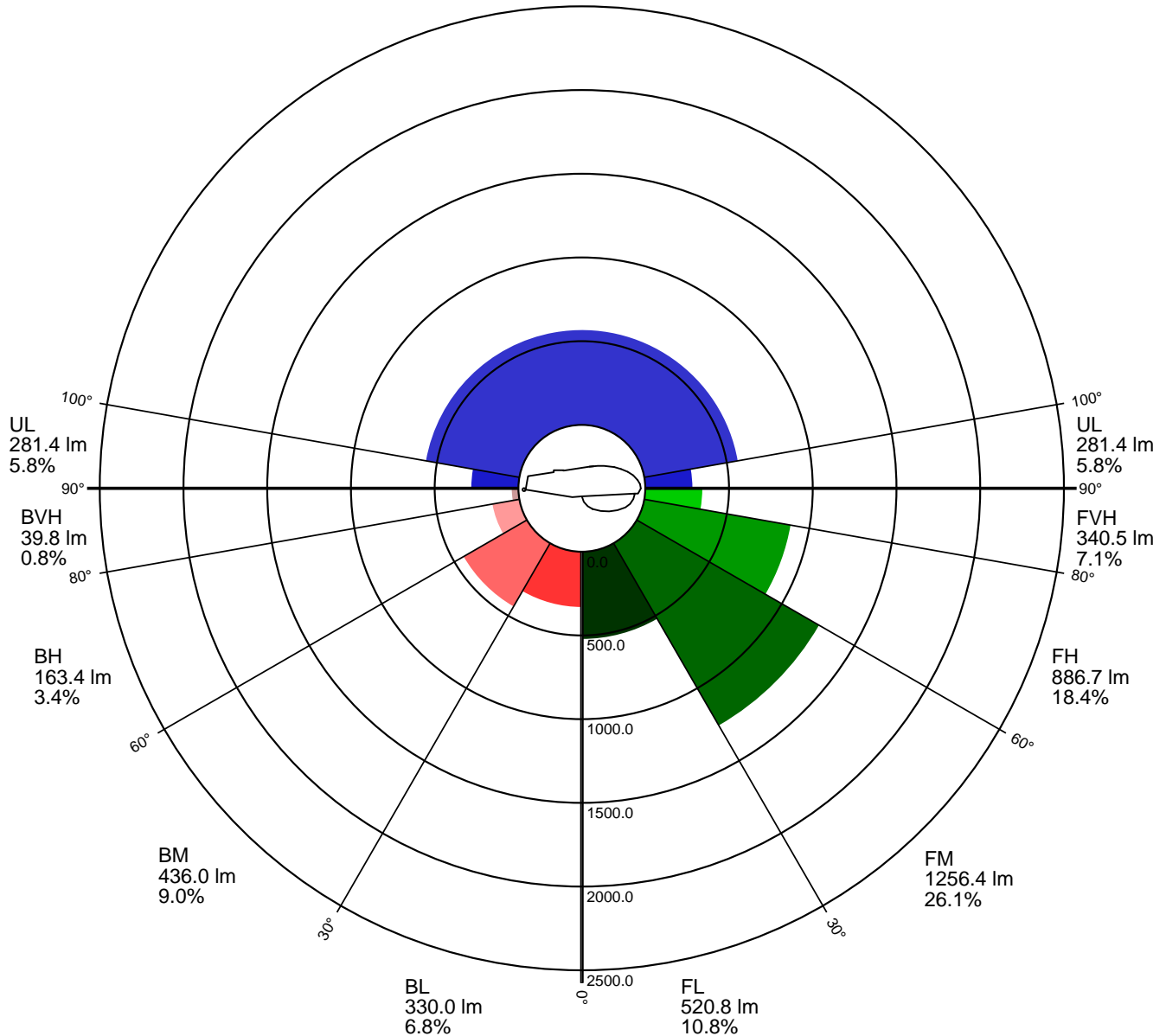
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## Zonal Lumen Summary

(Linear scale)

UH  
566.3 lm  
11.7%



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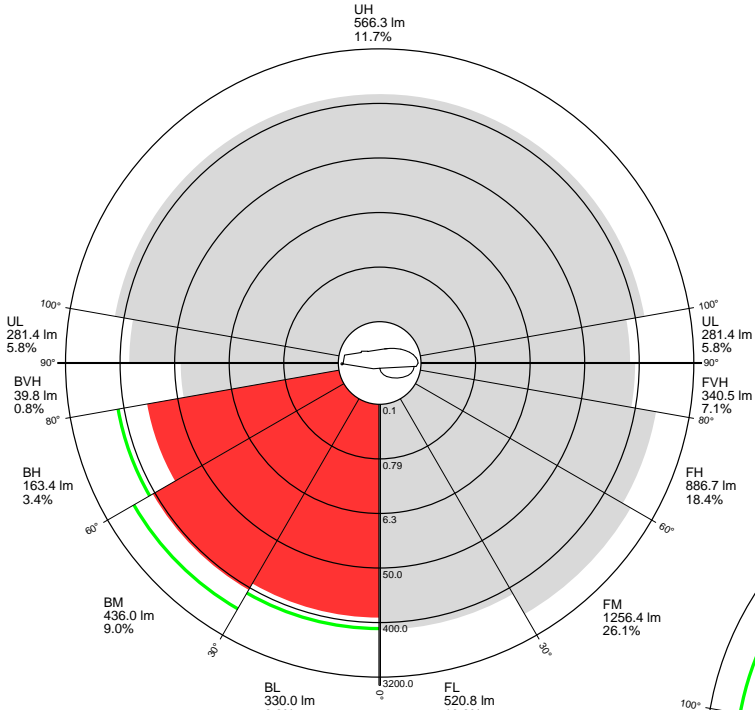
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**DATE SAMPLE TESTED:** 07/16/18

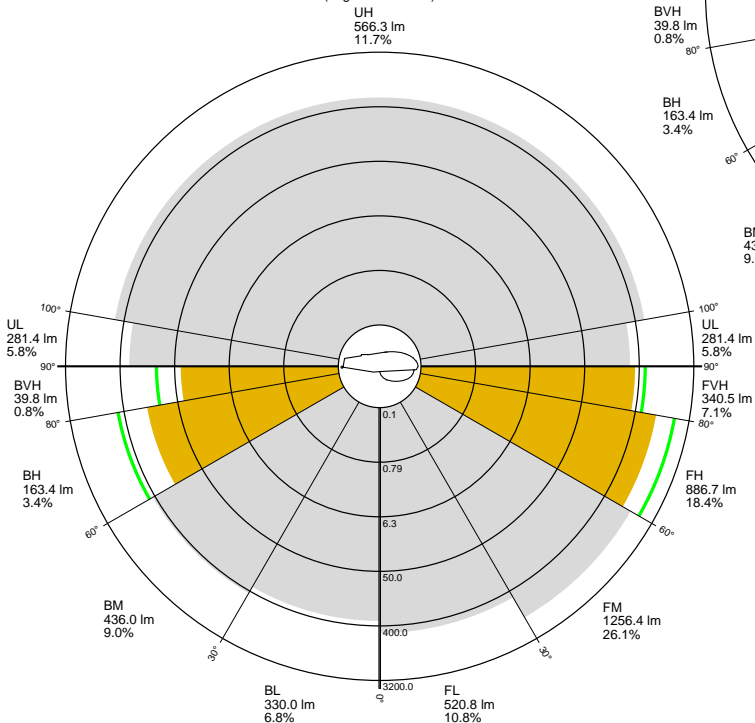
### Backlight Rating Details

(Logarithmic scale)



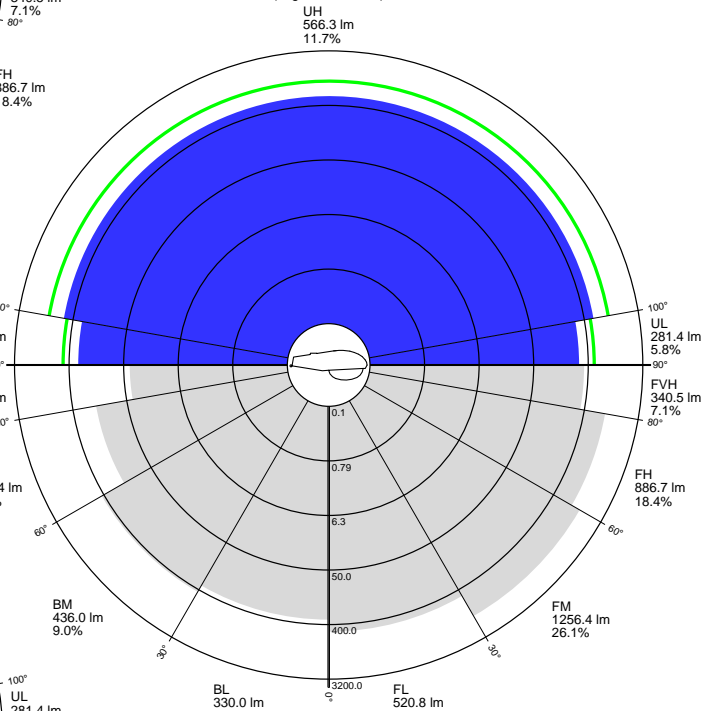
### Glare Rating Details

(Logarithmic scale)



### Uplight Rating Details

(Logarithmic scale)



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### CANDELA TABULATION

	STREET	SIDE										LATERAL ANGLE									
		0.0	2.5	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0									
	180.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.									
	175.0	11.	3.	6.	7.	7.	6.	6.	5.	5.	4.	4.									
	165.0	48.	44.	46.	45.	44.	42.	40.	34.	27.	18.	11.									
	155.0	86.	82.	84.	83.	81.	78.	74.	66.	54.	38.	21.									
	145.0	131.	127.	129.	127.	123.	118.	110.	100.	86.	71.	50.									
	135.0	184.	179.	182.	178.	169.	161.	148.	134.	115.	95.	73.									
	125.0	254.	246.	250.	242.	227.	212.	192.	170.	145.	117.	89.									
	115.0	360.	348.	353.	339.	315.	286.	254.	219.	183.	146.	110.									
	105.0	521.	500.	509.	485.	444.	396.	341.	289.	238.	185.	137.									
	95.0	731.	707.	717.	687.	621.	544.	461.	385.	312.	242.	177.									
	90.0	856.	828.	837.	801.	726.	636.	536.	447.	363.	281.	204.									
	87.5	919.	889.	901.	863.	785.	687.	580.	485.	396.	309.	226.									
	85.0	980.	952.	963.	924.	838.	737.	625.	523.	428.	337.	249.									
	82.5	1043.	1015.	1024.	985.	894.	788.	669.	563.	463.	368.	274.									
V	80.0	1096.	1073.	1084.	1040.	951.	837.	714.	602.	500.	400.	301.									
E	77.5	1156.	1129.	1139.	1093.	1003.	884.	758.	641.	536.	432.	330.									
R	75.0	1203.	1182.	1188.	1146.	1048.	929.	797.	679.	569.	464.	357.									
T	72.5	1250.	1231.	1239.	1193.	1093.	972.	837.	716.	604.	497.	386.									
I	70.0	1300.	1278.	1285.	1237.	1139.	1013.	876.	752.	639.	527.	414.									
C	67.5	1340.	1323.	1329.	1279.	1179.	1053.	914.	789.	673.	559.	444.									
A	65.0	1373.	1358.	1364.	1315.	1213.	1086.	947.	821.	703.	588.	472.									
L	62.5	1398.	1384.	1388.	1339.	1240.	1113.	975.	849.	731.	615.	498.									
	60.0	1417.	1404.	1408.	1359.	1261.	1136.	1000.	875.	757.	641.	524.									
A	57.5	1428.	1417.	1420.	1372.	1276.	1154.	1022.	900.	782.	666.	550.									
N	55.0	1433.	1424.	1426.	1379.	1286.	1169.	1041.	922.	806.	691.	576.									
G	52.5	1434.	1427.	1428.	1383.	1295.	1182.	1060.	944.	831.	718.	603.									
L	50.0<<	1434.	1428.	1429.	1386.	1302.	1196.	1081.	969.	857.	746.	632.									
E	47.5	1432.	1427.	1427.	1386.	1309.	1210.	1101.	994.	885.	775.	663.									
	45.0	1428.	1424.	1424.	1387.	1315.	1224.	1122.	1019.	914.	806.	695.									
	42.5	1424.	1420.	1420.	1386.	1321.	1238.	1143.	1045.	943.	839.	730.									
	40.0	1422.	1418.	1418.	1387.	1329.	1253.	1164.	1072.	973.	872.	765.									
	37.5	1421.	1417.	1418.	1390.	1338.	1269.	1187.	1101.	1005.	907.	802.									
	35.0	1422.	1418.	1419.	1394.	1347.	1285.	1211.	1128.	1038.	943.	841.									
	32.5	1420.	1418.	1418.	1397.	1355.	1299.	1231.	1155.	1069.	977.	879.									
	30.0	1418.	1416.	1416.	1397.	1361.	1311.	1249.	1179.	1095.	1008.	915.									
	27.5	1412.	1411.	1412.	1395.	1363.	1319.	1263.	1196.	1121.	1035.	948.									
	25.0	1407.	1408.	1407.	1393.	1365.	1327.	1275.	1214.	1142.	1064.	981.									
	20.0	1390.	1396.	1393.	1382.	1362.	1331.	1290.	1238.	1177.	1110.	1039.									
	15.0	1358.	1367.	1362.	1355.	1340.	1316.	1283.	1242.	1195.	1141.	1086.									
	10.0	1296.	1310.	1306.	1297.	1290.	1270.	1248.	1221.	1189.	1152.	1114.									
	5.0	1203.	1219.	1213.	1209.	1207.	1196.	1187.	1171.	1157.	1139.	1121.									
	0.0	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.									

||  
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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CATALOG NUMBER: BRISKM48L-740

### CANDELA TABULATION

HOUSE SIDE		LATERAL ANGLE									
		90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0 180.0
	180.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	175.0	4.	4.	4.	4.	3.	3.	2.	2.	2.	1.
	165.0	9.	8.	7.	7.	6.	6.	4.	3.	2.	2.
	155.0	17.	15.	16.	20.	15.	10.	7.	4.	3.	2.
	145.0	43.	36.	25.	30.	26.	16.	10.	5.	3.	3.
	135.0	64.	60.	51.	39.	33.	22.	12.	6.	4.	3.
	125.0	78.	72.	63.	51.	39.	26.	14.	6.	4.	3.
	115.0	95.	87.	75.	61.	46.	30.	16.	7.	5.	4.
	105.0	118.	107.	89.	71.	53.	35.	18.	8.	6.	5.
	95.0	149.	133.	108.	83.	60.	39.	20.	9.	7.	6.
	90.0	172.	150.	119.	90.	65.	42.	21.	10.	8.	7.
	87.5	190.	166.	130.	97.	69.	44.	22.	10.	8.	7.
	85.0	212.	186.	144.	110.	78.	52.	28.	15.	12.	11.
	82.5	234.	205.	160.	122.	89.	61.	36.	23.	19.	18.
V	80.0	259.	228.	178.	137.	101.	72.	47.	32.	28.	26.
E	77.5	284.	252.	198.	153.	116.	85.	58.	43.	38.	36.
R	75.0	310.	274.	218.	170.	130.	97.	70.	54.	49.	48.
T	72.5	338.	300.	240.	188.	146.	112.	83.	67.	62.	60.
I	70.0	364.	326.	263.	208.	162.	128.	99.	82.	75.	73.
C	67.5	393.	351.	285.	229.	182.	145.	114.	97.	90.	87.
A	65.0	419.	377.	310.	250.	201.	162.	131.	113.	106.	103.
L	62.5	444.	403.	333.	271.	220.	180.	147.	130.	122.	119.
	60.0	471.	427.	357.	293.	241.	200.	166.	147.	139.	136.
A	57.5	496.	452.	382.	318.	263.	221.	185.	165.	156.	153.
N	55.0	523.	478.	408.	341.	286.	242.	206.	185.	175.	171.
G	52.5	549.	506.	434.	367.	310.	265.	227.	206.	196.	192.
L	50.0<<	579.	535.	462.	395.	337.	289.	251.	229.	218.	213.
E	47.5	610.	566.	493.	424.	365.	317.	277.	254.	241.	236.
	45.0	644.	599.	525.	456.	395.	345.	304.	281.	268.	262.
	42.5	678.	633.	559.	489.	428.	375.	334.	310.	295.	289.
	40.0	714.	669.	594.	524.	462.	408.	366.	340.	325.	317.
	37.5	753.	707.	634.	562.	499.	445.	400.	375.	358.	350.
	35.0	792.	748.	674.	602.	536.	483.	439.	411.	395.	382.
	32.5	831.	787.	713.	643.	579.	523.	479.	450.	433.	423.
	30.0	867.	826.	753.	684.	619.	566.	520.	491.	474.	465.
	27.5	903.	863.	791.	725.	661.	610.	566.	538.	516.	509.
	25.0	939.	900.	831.	768.	705.	656.	614.	584.	567.	553.
	20.0	1003.	968.	908.	854.	799.	754.	713.	688.	671.	665.
	15.0	1057.	1031.	981.	936.	894.	856.	824.	806.	786.	780.
	10.0	1095.	1075.	1040.	1007.	978.	954.	933.	921.	905.	899.
	5.0	1111.	1102.	1084.	1068.	1053.	1040.	1028.	1022.	1014.	1010.
	0.0	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.	1113.

CONE OF MAXIMUM CANDELA

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**CATALOG NUMBER:** BRISKM48L-740

### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	27
5- 10	79
10- 15	129
15- 20	172
20- 25	208
25- 30	237
30- 35	258
35- 40	273
40- 45	283
45- 50	290
50- 55	293
55- 60	294
60- 65	288
65- 70	275
70- 75	255
75- 80	231
80- 85	204
85- 90	176
90- 95	151
95-100	130
100-105	110
105-110	93
110-115	77
115-120	64
120-125	53
125-130	44
130-135	36
135-140	28
140-145	22
145-150	16
150-155	11
155-160	7
160-165	4
165-170	2
170-175	1
175-180	0

### 10-DEGREE ZONAL LUMEN SUMMARY

0- 10	106
0- 20	406
0- 30	851
0- 40	1383
0- 50	1956
0- 60	2543
0- 70	3107
0- 80	3593
0- 90	3974
0-100	4255
0-110	4458
0-120	4600
0-130	4696
0-140	4760
0-150	4798
0-160	4815
0-170	4821
0-180	4821

REPORT NUMBER: RAB04485  
DATE: 7/13/2018  
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
CATALOG NUMBER: BRISKM48L-740

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST BROWN PAINTED METAL HOUSING, FORMED SPECULAR PAINTED REFLECTOR, 1 WHITE CIRCUIT BOARD WITH 77 LEDS, MOLDED FROSTED PLASTIC LENS.

LAMP: SEVENTY SEVEN WHITE LIGHT EMITTING DIODES (LEDS), TILTED 30-DEGREE FROM VERTICAL BASE-UP POSITION.

DRIVER: RDD-DBFE-030-A0901-02

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:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/08/19
	OCEAN OPTICS QE65PRO Spectroradiometer	05/24/19
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	05/24/19

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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CATALOG NUMBER: BRISKM48L-740

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### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	4821 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3836
Chromaticity Ordinate y	0.3813
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2254
Chromaticity Ordinate v'	0.5040
Correlated Color Temp CCT (K)	3949
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	13721 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.290
Input Power (Watts)	34.7
Input Power Factor (%)	99.7
Input Current THD (%)	6.5
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	138.9
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.128
Input Power (Watts)	34.2
Input Power Factor (%)	96.1
Input Current THD (%)	10.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	68
R2 Dark greyish yellow	80
R3 Strong yellowish green	89
R4 Moderate yellowish green	70
R5 Light bluish green	69
R6 Light blue	72
R7 Light violet	80
R8 Light reddish purple	49
R9 Strong red	-36
R10 Strong yellow	53
R11 Strong green	66
R12 Strong blue	44
R13 Light yellowish pink (skin)	71
R14 Moderate olive green (leaf)	94

### \*NOTE:

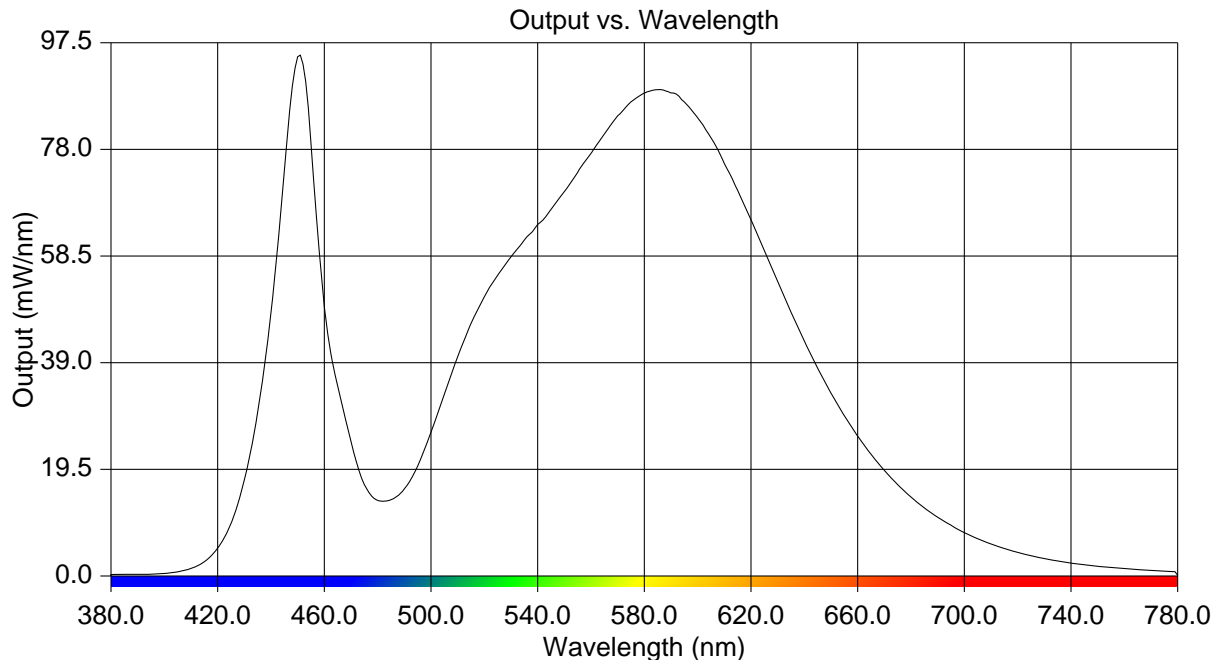
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
CATALOG NUMBER: BRISKM48L-740

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### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.247	515	46.165	650	33.471
385	0.294	520	51.043	655	29.355
390	0.286	525	54.962	660	25.605
395	0.358	530	58.348	665	22.253
400	0.459	535	61.421	670	19.280
405	0.755	540	64.255	675	16.657
410	1.367	545	67.013	680	14.413
415	2.600	550	70.224	685	12.398
420	5.082	555	73.783	690	10.686
425	9.610	560	77.214	695	9.290
430	17.504	565	80.790	700	7.904
435	29.890	570	84.124	705	6.816
440	48.307	575	86.680	710	5.852
445	74.006	580	88.266	715	5.028
450	94.935	585	88.908	720	4.311
455	79.033	590	88.311	725	3.682
460	49.356	595	86.660	730	3.177
465	34.735	600	83.736	735	2.744
470	24.526	605	80.107	740	2.370
475	16.709	610	75.401	745	2.053
480	13.832	615	70.487	750	1.782
485	13.937	620	65.065	755	1.539
490	15.929	625	59.503	760	1.339
495	20.087	630	53.771	765	1.164
500	26.330	635	48.229	770	1.020
505	33.224	640	42.969	775	0.890
510	40.079	645	38.059	780	0.132



REPORT NUMBER: RAB04485  
DATE: 7/13/2018  
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
CATALOG NUMBER: BRISKM48L-740

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## CIE Chromaticity Diagram

