

REPORT NUMBER: RAB02163

ISSUE DATE: 06/29/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: PIP15N/D10

LUMINAIRE: ONE-PIECE CAST METAL HOUSING WITH PAINTED BRONZE FINISH, LED AND DRIVER COMPARTMENT SEPARATED BY FINNED HEAT SINK, ONE WHITE CIRCUIT BOARD WITH 30 LEDS, TRANSLUCENT PLASTIC LENS ON TOP OF THE LED BOARD.

LAMPS: THRITY WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS =15.69 AT 277.0 VAC.

LED DRIVER: RDD-20W-042SE-A0450

TEST PROCEDURE: IESNA LM-79-08

\*(SEE PAGE 2 FOR MORE INFORMATION)\*

PAGE: 1 OF 7

DATE SAMPLE TESTED: 06/29/16

### FLOODLIGHT CHARACTERISTICS

#### IES TYPE

#### MAXIMUM CANDLEPOWER

HORIZONTAL BEAM ANGLE (50%)

VERTICAL BEAM ANGLE (50%)

HORIZONTAL FIELD ANGLE (10%)

VERTICAL FIELD ANGLE (10%)

BEAM LUMENS (% FIXTURE)

FIELD LUMENS (% FIXTURE)

TOTAL LUMENS (% FIXTURE)

TOTAL INPUT WATTS = 15.7

EFFICACY = 136.5 Lm/W

7H X 6V

1089. AT 0.0 H, -1.0 V

#### AXIAL CANDLEPOWER

DEG	HORIZ.	DEG	VERT.
90.0	0.	90.0	0.
85.0	12.	85.0	0.
75.0	73.	75.0	32.
65.0	193.	65.0	60.
55.0	387.	55.0	123.
47.5	590.	47.5	259.
42.5	741.	42.5	378.
37.5	869.	37.5	488.
33.0	936.	33.0	589.
29.0	974.	29.0	677.
25.5	999.	25.5	753.
22.5	1018.	22.5	811.
19.5	1033.	19.5	856.
17.0	1042.	17.0	885.
15.0	1046.	15.0	907.
13.0	1048.	13.0	931.
11.0	1052.	11.0	957.
9.0	1058.	9.0	984.
7.0	1066.	7.0	1013.
5.0	1074.	5.0	1046.
3.0	1084.	3.0	1074.
1.0	1088.	1.0	1086.
0.0	1089.	0.0	1089.
-1.0	1088.	-1.0	1089.
-3.0	1084.	-3.0	1079.
-5.0	1074.	-5.0	1062.
-7.0	1066.	-7.0	1043.
-9.0	1058.	-9.0	1022.
-11.0	1052.	-11.0	998.
-13.0	1048.	-13.0	974.
-15.0	1046.	-15.0	949.
-17.0	1042.	-17.0	924.
-19.5	1033.	-19.5	889.
-22.5	1018.	-22.5	833.
-25.5	999.	-25.5	776.
-29.0	974.	-29.0	706.
-33.0	936.	-33.0	618.
-37.5	869.	-37.5	506.
-42.5	741.	-42.5	374.
-47.5	590.	-47.5	248.
-55.0	387.	-55.0	127.
-65.0	193.	-65.0	64.
-75.0	73.	-75.0	34.
-85.0	12.	-85.0	10.
-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 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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.0	0.	1.	2.	2.	3.	3.	3.	3.	3.	3.	3.	4.	3.	3.	3.	3.	3.	3.	4.	4.	4.	3.	0.
75.0	32.	32.	31.	31.	31.	30.	30.	30.	29.	29.	29.	29.	29.	30.	31.	31.	30.	29.	23.	16.	8.	4.	0.
65.0	60.	60.	60.	60.	60.	60.	60.	61.	62.	63.	66.	70.	75.	80.	86.	91.	90.	83.	64.	38.	18.	6.	0.
55.0	123.	122.	124.	125.	128.	132.	138.	143.	153.	163.	175.	186.	194.	203.	208.	208.	196.	170.	119.	67.	29.	7.	0.
47.5	259.	257.	260.	262.	266.	272.	280.	290.	298.	310.	320.	330.	335.	337.	338.	329.	298.	251.	168.	92.	37.	8.	0.
42.5	378.	376.	380.	385.	393.	406.	422.	442.	460.	448.	464.	458.	503.	447.	436.	428.	407.	308.	205.	107.	44.	9.	0.
37.5	488.	487.	489.	489.	489.	492.	495.	499.	505.	511.	515.	518.	519.	515.	508.	490.	452.	370.	240.	122.	50.	9.	0.
33.0	589.	587.	587.	589.	587.	592.	589.	596.	600.	605.	605.	604.	600.	595.	586.	565.	521.	433.	270.	137.	55.	10.	0.
29.0	677.	674.	674.	674.	670.	675.	676.	679.	683.	688.	685.	679.	672.	663.	649.	619.	548.	470.	296.	149.	59.	10.	0.
25.5	753.	750.	748.	745.	742.	744.	745.	747.	751.	752.	749.	741.	732.	718.	699.	662.	584.	495.	314.	159.	62.	11.	0.
22.5	811.	808.	806.	802.	798.	798.	798.	799.	802.	802.	797.	788.	775.	758.	734.	691.	606.	495.	328.	166.	64.	11.	0.
19.5	856.	858.	854.	849.	845.	844.	843.	844.	845.	844.	838.	826.	810.	789.	762.	714.	625.	509.	340.	172.	66.	11.	0.
17.0	885.	885.	881.	875.	872.	870.	870.	870.	871.	870.	863.	850.	833.	811.	781.	732.	640.	521.	349.	177.	68.	12.	0.
15.0	907.	908.	903.	897.	893.	891.	890.	890.	890.	888.	882.	869.	852.	830.	799.	747.	653.	531.	355.	180.	69.	12.	0.
13.0	931.	932.	927.	919.	915.	912.	911.	911.	911.	910.	902.	890.	873.	851.	818.	764.	665.	540.	361.	183.	70.	12.	0.
11.0	957.	959.	953.	945.	940.	937.	935.	934.	934.	932.	924.	910.	894.	872.	837.	781.	678.	549.	367.	186.	71.	12.	0.
9.0	984.	985.	979.	970.	964.	960.	957.	956.	956.	954.	945.	932.	915.	893.	857.	798.	690.	558.	372.	187.	71.	12.	0.
7.0	1013.	1015.	1007.	999.	993.	989.	984.	982.	981.	979.	969.	956.	937.	916.	878.	818.	704.	567.	377.	190.	72.	12.	0.
5.0	1046.	1047.	1040.	1031.	1025.	1018.	1012.	1010.	1008.	1006.	995.	981.	961.	938.	899.	837.	717.	575.	380.	191.	72.	12.	0.
3.0	1074.	1074.	1068.	1059.	1051.	1044.	1038.	1034.	1032.	1029.	1018.	1004.	984.	960.	921.	856.	731.	583.	384.	192.	73.	12.	0.
1.0	1086.	1086.	1080.	1072.	1063.	1057.	1050.	1046.	1043.	1040.	1031.	1016.	997.	972.	933.	866.	739.	588.	386.	193.	73.	12.	0.
0.0	1089.	1088.	1084.	1074.	1066.	1058.	1052.	1048.	1046.	1042.	1033.	1018.	999.	974.	936.	869.	741.	590.	387.	193.	73.	12.	0.
-1.0	1089.	1087.	1083.	1074.	1065.	1058.	1052.	1048.	1045.	1042.	1033.	1018.	1000.	975.	937.	870.	743.	591.	387.	193.	73.	12.	0.
-3.0	1079.	1078.	1073.	1065.	1056.	1049.	1042.	1040.	1037.	1034.	1025.	1010.	993.	968.	931.	866.	741.	589.	386.	192.	73.	12.	0.
-5.0	1062.	1061.	1057.	1048.	1040.	1033.	1027.	1024.	1022.	1019.	1010.	996.	979.	954.	918.	857.	736.	586.	385.	192.	73.	12.	0.
-7.0	1043.	1041.	1038.	1030.	1023.	1016.	1010.	1007.	1006.	1003.	994.	980.	964.	939.	905.	845.	728.	581.	383.	191.	73.	12.	0.
-9.0	1022.	1020.	1018.	1010.	1003.	996.	991.	989.	988.	985.	977.	963.	946.	921.	889.	831.	719.	575.	380.	189.	72.	12.	0.
-11.0	998.	996.	994.	987.	980.	973.	969.	967.	966.	964.	957.	943.	926.	902.	870.	816.	709.	569.	376.	188.	72.	12.	0.
-13.0	974.	972.	971.	964.	958.	952.	948.	946.	946.	944.	937.	922.	906.	882.	851.	800.	698.	562.	372.	185.	71.	12.	0.
-15.0	949.	948.	947.	941.	935.	929.	926.	925.	925.	923.	916.	902.	886.	863.	834.	785.	688.	555.	367.	183.	70.	12.	0.
-17.0	924.	922.	921.	915.	909.	904.	901.	901.	901.	899.	894.	882.	866.	843.	815.	769.	677.	547.	361.	180.	69.	12.	0.
-19.5	889.	886.	884.	879.	874.	869.	866.	866.	867.	867.	862.	850.	836.	815.	790.	748.	662.	535.	353.	176.	68.	12.	0.
-22.5	833.	831.	829.	825.	819.	815.	813.	814.	816.	816.	813.	804.	791.	774.	754.	718.	640.	519.	341.	170.	66.	11.	0.
-25.5	776.	775.	773.	768.	763.	758.	757.	759.	762.	764.	761.	755.	744.	731.	715.	686.	616.	496.	327.	163.	64.	11.	0.
-29.0	706.	706.	704.	699.	694.	689.	688.	690.	694.	698.	697.	696.	686.	677.	666.	645.	584.	474.	308.	154.	61.	11.	0.
-33.0	618.	617.	615.	610.	605.	601.	600.	604.	610.	617.	623.	623.	617.	611.	604.	593.	542.	443.	283.	143.	57.	11.	0.
-37.5	506.	506.	505.	502.	498.	496.	499.	505.	513.	524.	534.	538.	537.	536.	533.	521.	481.	398.	254.	128.	52.	10.	0.
-42.5	374.	376.	375.	378.	384.	395.	413.	435.	462.	492.	471.	481.	503.	460.	446.	439.	468.	339.	221.	113.	46.	10.	0.
-47.5	248.	244.	244.	243.	244.	248.	256.	268.	281.	296.	314.	330.	342.	350.	356.	355.	332.	279.	182.	98.	40.	9.	0.
-55.0	127.	126.	125.	123.	122.	124.	127.	130.	139.	150.	163.	180.	194.	207.	218.	223.	217.	190.	132.	73.	31.	8.	0.
-65.0	64.	64.	64.	63.	63.	63.	63.	63.	65.	66.	68.	73.	78.	86.	95.	102.	104.	97.	74.	45.	20.	7.	0.
-75.0	34.	35.	35.	35.	34.	34.	34.	34.	34.	34.	34.	35.	35.	36.	39.	41.	44.	42.	33.	22.	11.	5.	0.
-85.0	10.	10.	11.	12.	12.	12.	12.	12.	12.	12.	11.	11.	11.	11.	11.	11.	11.	11.	10.	8.	5.	3.	0.
-90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

BEAM EDGE = 545. CP = 50% OF MAX  
 FIELD EDGE = 109. CP = 10% OF MAX

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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																							
55.0	123.	122.	124.	125.	128.	132.	138.	143.	153.	163.	175.	186.	194.	203.	208.	208.	196.	170.	119.				
47.5	259.	257.	260.	262.	266.	272.	280.	290.	298.	310.	320.	330.	335.	337.	338.	329.	298.	251.	168.				
42.5	378.	376.	380.	385.	393.	406.	422.	442.	460.	448.	464.	458.	503.	447.	436.	428.	407.	308.	205.				
37.5	488.	487.	489.	489.	489.	492.	495.	499.	505.	511.	515.	518.	519.	515.	508.	490.	452.	370.	240.	122.			
33.0	589.	587.	587.	589.	587.	592.	589.	596.	600.	605.	605.	604.	600.	595.	586.	565.	521.	433.	270.	137.			
29.0	677.	674.	674.	674.	670.	675.	676.	679.	683.	688.	685.	679.	672.	663.	649.	619.	548.	470.	296.	149.			
25.5	753.	750.	748.	745.	742.	744.	745.	747.	751.	752.	749.	741.	732.	718.	699.	662.	584.	495.	314.	159.			
22.5	811.	808.	806.	802.	798.	798.	798.	799.	802.	802.	797.	788.	775.	758.	734.	691.	606.	495.	328.	166.			
19.5	856.	858.	854.	849.	845.	844.	843.	844.	845.	844.	838.	826.	810.	789.	762.	714.	625.	509.	340.	172.			
17.0	885.	885.	881.	875.	872.	870.	870.	871.	870.	863.	850.	833.	811.	781.	732.	640.	521.	349.	177.				
15.0	907.	908.	903.	897.	893.	891.	890.	890.	888.	882.	869.	852.	830.	799.	747.	653.	531.	355.	180.				
13.0	931.	932.	927.	919.	915.	912.	911.	911.	910.	902.	890.	873.	851.	818.	764.	665.	540.	361.	183.				
11.0	957.	959.	953.	945.	940.	937.	935.	934.	934.	932.	924.	910.	894.	872.	837.	781.	678.	549.	367.	186.			
9.0	984.	985.	979.	970.	964.	960.	957.	956.	956.	954.	945.	932.	915.	893.	857.	798.	690.	558.	372.	187.			
7.0	1013.	1015.	1007.	999.	993.	989.	984.	982.	981.	979.	969.	956.	937.	916.	878.	818.	704.	567.	377.	190.			
5.0	1046.	1047.	1040.	1031.	1025.	1018.	1012.	1010.	1008.	1006.	995.	981.	961.	938.	899.	837.	717.	575.	380.	191.			
3.0	1074.	1074.	1068.	1059.	1051.	1044.	1038.	1034.	1032.	1029.	1018.	1004.	984.	960.	921.	856.	731.	583.	384.	192.			
1.0	1086.	1086.	1080.	1072.	1063.	1057.	1050.	1046.	1043.	1040.	1031.	1016.	997.	972.	933.	866.	739.	588.	386.	193.			
0.0	1089.	1088.	1084.	1074.	1066.	1058.	1052.	1048.	1046.	1042.	1033.	1018.	999.	974.	936.	869.	741.	590.	387.	193.			
-1.0	1089.	1087.	1083.	1074.	1065.	1058.	1052.	1048.	1045.	1042.	1033.	1018.	1000.	975.	937.	870.	743.	591.	387.	193.			
-3.0	1079.	1078.	1073.	1065.	1056.	1049.	1042.	1040.	1037.	1034.	1025.	1010.	993.	968.	931.	866.	741.	589.	386.	192.			
-5.0	1062.	1061.	1057.	1048.	1040.	1033.	1027.	1024.	1022.	1019.	1010.	996.	979.	954.	918.	857.	736.	586.	385.	192.			
-7.0	1043.	1041.	1038.	1030.	1023.	1016.	1010.	1007.	1006.	1003.	994.	980.	964.	939.	905.	845.	728.	581.	383.	191.			
-9.0	1022.	1020.	1018.	1010.	1003.	996.	991.	989.	988.	985.	977.	963.	946.	921.	889.	831.	719.	575.	380.	189.			
-11.0	998.	996.	994.	987.	980.	973.	969.	967.	966.	964.	957.	943.	926.	902.	870.	816.	709.	569.	376.	188.			
-13.0	974.	972.	971.	964.	958.	952.	948.	946.	946.	944.	937.	922.	906.	882.	851.	800.	698.	562.	372.	185.			
-15.0	949.	948.	947.	941.	935.	929.	926.	925.	925.	923.	916.	902.	886.	863.	834.	785.	688.	555.	367.	183.			
-17.0	924.	922.	921.	915.	909.	904.	901.	901.	901.	899.	894.	882.	866.	843.	815.	769.	677.	547.	361.	180.			
-19.5	889.	886.	884.	879.	874.	869.	866.	866.	867.	867.	862.	850.	836.	815.	790.	748.	662.	535.	353.	176.			
-22.5	833.	831.	829.	825.	819.	815.	813.	814.	816.	816.	813.	804.	791.	774.	754.	718.	640.	519.	341.	170.			
-25.5	776.	775.	773.	768.	763.	758.	757.	759.	762.	764.	761.	755.	744.	731.	715.	686.	616.	496.	327.	163.			
-29.0	706.	706.	704.	699.	694.	689.	688.	690.	694.	698.	697.	696.	686.	677.	666.	645.	584.	474.	308.	154.			
-33.0	618.	617.	615.	610.	605.	601.	600.	604.	610.	617.	623.	623.	617.	611.	604.	593.	542.	443.	283.	143.			
-37.5	506.	506.	505.	502.	498.	496.	499.	505.	513.	524.	534.	538.	537.	536.	533.	521.	481.	398.	254.	128.			
-42.5	374.	376.	375.	378.	384.	395.	413.	435.	462.	492.	471.	481.	503.	460.	446.	439.	468.	339.	221.	113.			
-47.5	248.	244.	244.	243.	244.	248.	256.	268.	281.	296.	314.	330.	342.	350.	356.	355.	332.	279.	182.				
-55.0	127.	126.	125.	123.	122.	124.	127.	130.	139.	150.	163.	180.	194.	207.	218.	223.	217.	190.	132.				
-65.0																							
-75.0																							
-85.0																							
-90.0																							

BEAM EDGE = 545. CP = 50% OF MAX  
 FIELD EDGE = 109. CP = 10% OF MAX

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 DATE SAMPLE TESTED: 06/29/16

### 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.	1.
80	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.
70	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	12.
60	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.	0.	0.	0.	26.
50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	22.
45	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.	0.	0.	0.	31.
40	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.	0.	0.	0.	36.
35	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.	0.	0.	0.	33.
31	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	3.	2.	2.	2.	1.	0.	0.	0.	37.
27	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	0.	0.	0.	30.
24	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.	0.	0.	0.	32.
21	2.	2.	2.	2.	2.	2.	2.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.	0.	0.	0.	34.
18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	23.
16	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	24.
14	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	24.
12	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	25.
10	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	25.
8	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	26.
6	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
4	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
2	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
0	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	28.
-2	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
-4	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
-6	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
-8	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	27.
-10	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	26.
-12	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	26.
-14	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	25.
-16	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	25.
-18	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	24.
-21	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.	0.	0.	0.	35.
-24	2.	2.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.	0.	0.	0.	33.
-27	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	0.	0.	0.	31.
-31	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.	0.	0.	0.	38.
-35	2.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.	0.	0.	0.	35.
-40	2.	2.	2.	2.	1.	1.	1.	2.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.	0.	0.	0.	37.
-45	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	3.	2.	2.	1.	0.	0.	0.	32.
-50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	2.	1.	0.	0.	0.	23.
-60	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	3.	2.	2.	2.	1.	0.	0.	0.	27.
-70	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	13.
-80	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	6.
-90	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
	47.	47.	46.	46.	46.	46.	46.	46.	46.	45.	67.	66.	64.	81.	76.	86.	72.	54.	61.	23.	6.	0.	1072.

LUMEN TOTAL THIS PAGE = 1072.

REPORT NUMBER: RAB02163  
 ISSUE DATE: 06/29/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 6 OF 7  
 DATE SAMPLE TESTED: 06/29/16

### LUMEN TABULATION - FIELD ONLY AVERAGE OF RIGHT AND LEFT SIDES

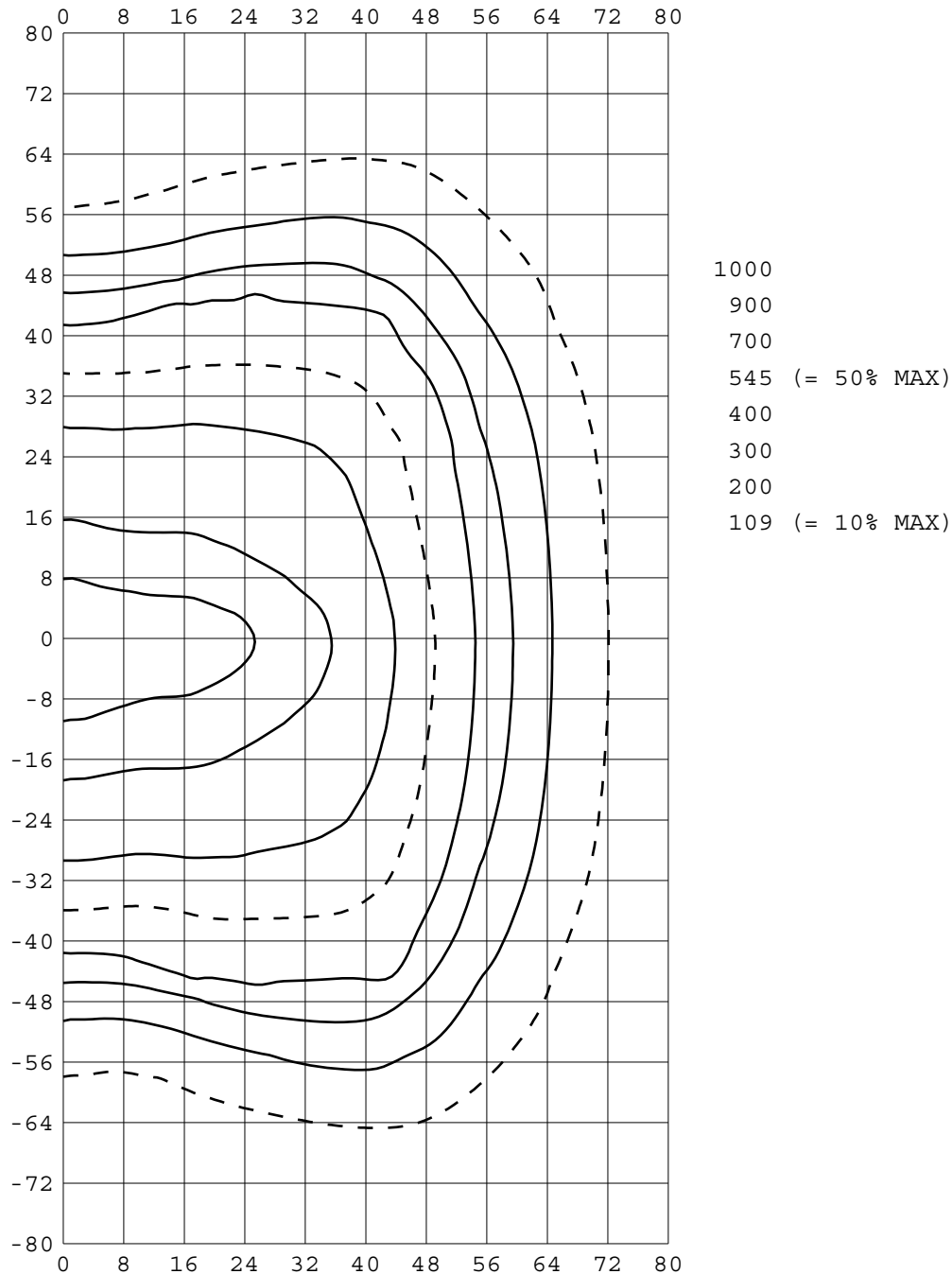
	0	2	4	6	8	10	12	14	16	18	21	24	27	31	35	40	45	50	60	70	80	90	TOTAL
90																							0.
80																							0.
70																							0.
60																							25.
50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.				22.
45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.				30.
40	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.			36.
35	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.			33.
31	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	3.	2.	2.	2.	1.			37.
27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.			30.
24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.			32.
21	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.			34.
18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	0.			23.
16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	2.	2.	1.	1.	1.	0.			24.
14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	1.	1.	1.	0.			24.
12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.			25.
10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			25.
8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			26.
6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			26.
4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
-2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
-4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
-6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
-8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			27.
-10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			26.
-12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.			26.
-14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.			25.
-16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	0.			25.
-18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	2.	2.	2.	2.	1.	1.	0.			24.
-21	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.			35.
-24	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	2.	2.	2.	1.			33.
-27	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.			31.
-31	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.			38.
-35	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	2.	3.	2.	2.	2.	1.			34.
-40	2.	2.	2.	2.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	1.			37.
-45	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	3.	3.	2.	2.	1.			32.
-50	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	2.				22.
-60	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	3.	2.	2.	2.				25.
-70																							0.
-80																							0.
-90																							0.
	46.	45.	45.	45.	45.	44.	44.	44.	44.	44.	65.	64.	62.	79.	74.	83.	69.	52.	58.	18.	0.	0.	1025.

LUMEN TOTAL THIS PAGE = 1025.

REPORT NUMBER: RAB02163  
ISSUE DATE: 06/29/16  
PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 7  
DATE SAMPLE TESTED: 06/29/16

ISOCANDELA CURVES  
AVERAGE OF RIGHT AND LEFT SIDES



REPORT NUMBER: RAB02164  
 DATE: 6/28/2016  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: PIP15N/D10

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: ONE-PIECE CAST METAL HOUSING WITH PAINTED BRONZE FINISH, LED AND DRIVER COMPARTMENT SEPARATED BY FINNED HEAT SINK, ONE WHITE CIRCUIT BOARD WITH 30 LEDS, TRANSLUCENT PLASTIC LENS ON TOP OF THE LED BOARD.

LAMP: THRITY WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

DRIVER: RDD-20W-042SE-A0450

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (277.0 AND 120.0 VAC, 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	5/31/17

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 (120.0 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



REPORT NUMBER: RAB02164  
 DATE: 6/28/2016  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: PIP15N/D10

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### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	2143 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3805
Chromaticity Ordinate y	0.3788
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2243
Chromaticity Ordinate v'	0.5025
Correlated Color Temp CCT (K)	4014
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	6206 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.061
Input Power (Watts)	15.7
Input Power Factor (%)	93.1
Input Current THD (%)	14.6
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	136.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.127
Input Power (Watts)	15.0
Input Power Factor (%)	98.6
Input Current THD (%)	14.4
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	70
R2 Dark greyish yellow	78
R3 Strong yellowish green	84
R4 Moderate yellowish green	72
R5 Light bluish green	69
R6 Light blue	69
R7 Light violet	82
R8 Light reddish purple	55
R9 Strong red	-24
R10 Strong yellow	47
R11 Strong green	66
R12 Strong blue	38
R13 Light yellowish pink (skin)	71
R14 Moderate olive green (leaf)	90

### \*NOTE:

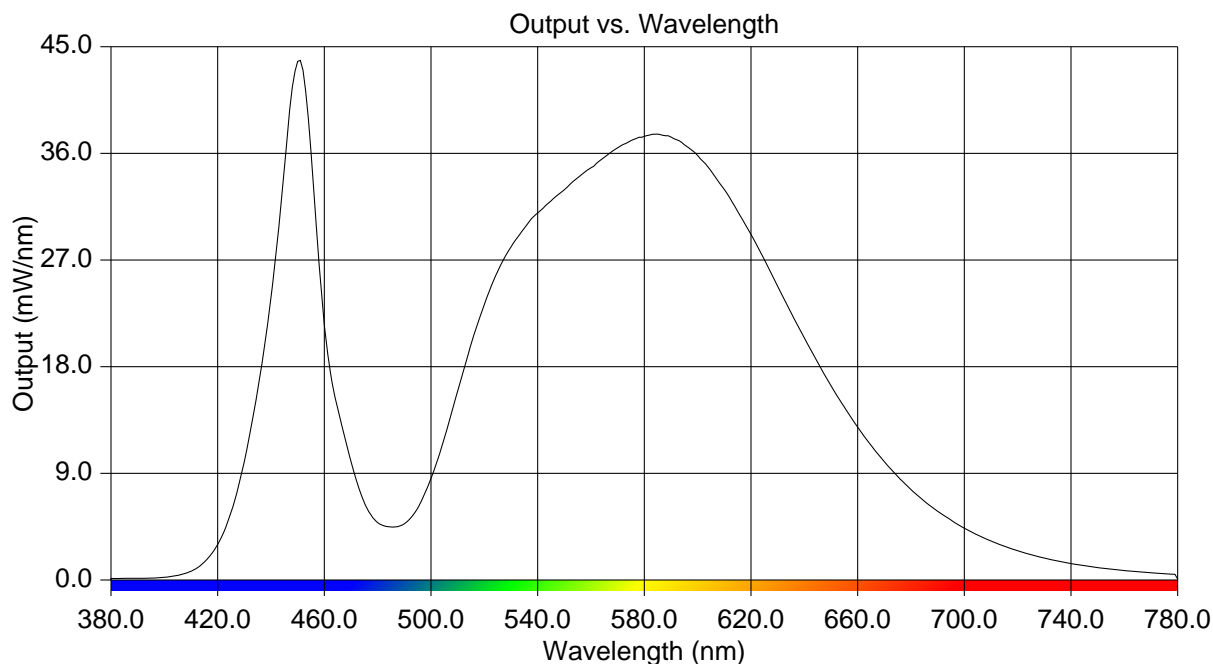
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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.

REPORT NUMBER: RAB02164  
 DATE: 6/28/2016  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: PIP15N/D10

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### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.123	515	19.858	650	16.389
385	0.125	520	23.241	655	14.590
390	0.134	525	26.039	660	12.889
395	0.161	530	28.101	665	11.356
400	0.229	535	29.685	670	9.974
405	0.384	540	30.974	675	8.742
410	0.741	545	31.982	680	7.636
415	1.517	550	32.932	685	6.644
420	2.998	555	33.937	690	5.790
425	5.710	560	34.770	695	5.059
430	9.992	565	35.644	700	4.371
435	16.071	570	36.471	705	3.787
440	23.824	575	37.074	710	3.297
445	34.810	580	37.430	715	2.847
450	43.756	585	37.623	720	2.469
455	36.134	590	37.376	725	2.130
460	21.534	595	36.725	730	1.838
465	14.493	600	35.815	735	1.609
470	9.983	605	34.530	740	1.387
475	6.524	610	32.947	745	1.203
480	4.836	615	31.098	750	1.051
485	4.472	620	29.178	755	0.915
490	4.740	625	27.067	760	0.796
495	6.050	630	24.760	765	0.693
500	8.561	635	22.564	770	0.607
505	11.967	640	20.433	775	0.532
510	15.939	645	18.334	780	0.081



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## CIE Chromaticity Diagram

