

Federal Communications Commission Washington, D.C. 20554  <p style="text-align: center;"><b>FCC 302-FM</b></p>	Approved by OMB 3060-0506 (June 2002)  FOR FCC USE ONLY
<p><b>APPLICATION FOR FM BROADCAST STATION LICENSE</b></p> <p>Read INSTRUCTIONS Before Filling Out Form</p>	FOR COMMISSION USE ONLY FILE NO. <b>BXLED - 20170830AAN</b>

**Section I - General Information**

1.	Legal Name of the Applicant MINNESOTA PUBLIC RADIO  Mailing Address 480 CEDAR STREET  City ST. PAUL	State or Country (if foreign address) MN	ZIP Code 55101 -
	Telephone Number (include area code) 6512901500	E-Mail Address (if available) FCCFILING@MPR.ORG	
	FCC Registration Number: 0002642510	Call Sign KNOW-FM	Facility Identifier 42949
2.	Contact Representative (if other than Applicant) MELODIE VIRTUE  Telephone Number (include area code) 2022982527	Firm or Company Name GARVEY SCHUBERT BARER  E-Mail Address (if available) MVIRTUE@GSBLAW.COM	
3.	If this application has been submitted without a fee, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114): <input type="radio"/> Governmental Entity <input checked="" type="radio"/> Noncommercial Educational Licensee/Permittee <input type="radio"/> Other <input type="radio"/> N/A (Fee Required)		
4.	Facility Information: a. <input type="radio"/> Commercial <input checked="" type="radio"/> Noncommercial b. <input type="radio"/> Directional <input checked="" type="radio"/> Nondirectional c. Community of License: City: MINNEAPOLIS-ST. PAUL      State: MN		
5.	<b>Program Test Authority:</b> <input checked="" type="radio"/> Requesting program test authority. <input type="radio"/> Station operating pursuant to automatic program test authority (47 C.F.R. Section 73.1620(a)(1)).		
6.	<b>Purpose of Application:</b> <input checked="" type="radio"/> Cover construction permit (list most recent construction permit file number -- starts with the prefix BPH, BNPH, BMPH, BPED, BMPED, or BMPED):      BXPED-20160921AAC <input type="radio"/> Modify an authorized license (list license file number -- starts with the prefix BLH, BMLH, BLED, or BMLED):      - <input type="radio"/> Amend a pending application If an amendment, <b>submit as an Exhibit</b> a listing by Section and Question Number the portions of the pending application that are being revised.      [Exhibit 1]		

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

**Section II - Legal and Financial**

1.	<b>Certification.</b> Applicant certifies that it has answered each question in this application based on its review of the application instructions and worksheets. Applicant further certifies that where it has made an affirmative certification below, this certification constitutes its representation that the application satisfies each of the pertinent standards and criteria set forth in the application instructions and worksheets.	<input checked="" type="radio"/> Yes <input type="radio"/> No
2.	Licensee/Permittee certifies that all terms, conditions, and obligations set forth in the underlying construction permit have been fully met.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 2]

3.	Licensee/Permittee certifies that, apart from changes already reported, no cause or circumstance has arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 3]
4.	<b>Character Issues.</b> Applicant certifies that neither licensee/permittee nor any party to the application has or has had any interest in, or connection with: a. any broadcast application in any proceeding where character issues were left unresolved or were resolved adversely against the applicant or party to the application; or b. any pending broadcast application in which character issues have been raised.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 4]
5.	<b>Adverse Findings.</b> Applicant certifies that, with respect to the applicant and any party to the application, no adverse finding has been made, nor has an adverse final action been taken related to the following: any felony; mass media-related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 5]
6.	<b>Anti-Drug Abuse Act Certification.</b> Applicant certifies that neither licensee/permittee nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862.	<input checked="" type="radio"/> Yes <input type="radio"/> No

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing SYLVIA STROBEL	Typed or Printed Title of Person Signing SENIOR VICE PRESIDENT
Signature	Date 8/30/2017

### SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JON BLOMSTRAND	Relationship to Applicant (e.g., Consulting Engineer) ENGINEER	
Signature	Date 8/30/2017	
Mailing Address 480 CEDAR STREET		
City SAINT PAUL	State or Country (if foreign address) MN	Zip Code 55101 -
Telephone Number (include area code) 6512901500	E-Mail Address (if available) JBLOMSTRAND@MPR.ORG	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

<b>Section III - Engineering</b>
<b>TECHNICAL SPECIFICATIONS</b> Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.
<b>TECH BOX</b>
1. Channel: 216

2.	a. Effective Radiated Power: <span style="float: right;">100 kW(H) 100 kW(V)</span> b. Maximum Effective Radiated Power: <span style="float: right;">kW(H) kW(V)</span> (Beam-Tilt Antenna ONLY) <input type="checkbox"/> Not Applicable								
3.	Transmitter Power Output: 25.4 kW								
4.	Antenna Data								
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%;">Manufacturer</td> <td style="width:20%;">Model</td> <td style="width:20%;">Number of Sections</td> <td style="width:40%;">Spacing Between Sections (wavelength)</td> </tr> <tr> <td>ERI</td> <td>SHPX-8AC</td> <td>8</td> <td>1</td> </tr> </table>	Manufacturer	Model	Number of Sections	Spacing Between Sections (wavelength)	ERI	SHPX-8AC	8	1
Manufacturer	Model	Number of Sections	Spacing Between Sections (wavelength)						
ERI	SHPX-8AC	8	1						

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

**CERTIFICATION**

**All applicants must complete this section.**

5.	<b>Main Studio Location.</b> The main studio location complies with 47 C.F.R. Section 73.1125.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 6]
6.	<b>Transmitter Power Output.</b> The operating transmitter power output produces the authorized effective radiated power.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 7]

**APPLICATIONS FILED TO COVER A CONSTRUCTION PERMIT.**

Only applicants filing this application to cover a construction permit must complete the following section.

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

7.	<b>Constructed Facility .</b> The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 8]
8.	<b>Special Operating Conditions.</b> The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 9]
	<b>An exhibit may be required.</b> Review the underlying construction permit.	[Exhibit 10]

**APPLICATIONS FILED PURSUANT TO 47 C.F.R. SECTIONS 73.1675(c) or 73.1690(c).**

Only applicants filing this application pursuant to 47 C.F.R. Sections 73.1675(c) or 73.1690(c) must complete the following section.

9.	<b>Changing transmitter power output.</b> Is this application being filed to authorize a change in transmitter power output caused by the replacement of omnidirectional antenna with another omnidirectional antenna or an alteration of the transmission line system? See 47 C.F.R. Sections 73.1690(c)(1) and (c)(10).	<input type="radio"/> Yes <input type="radio"/> No
10.	<b>Increasing effective radiated power.</b> Is this application being filed to authorize an increase in ERP for a station operating in the nonreserved band (Channels 221-300)? See 47 C.F.R. Sections 73.1690(c)(4), (c)(5) and (c)(7).  If "Yes" to the above, the applicant certifies the following:	<input type="radio"/> Yes <input type="radio"/> No
	a. <b>Spacing Requirements.</b> The increase in ERP was authorized pursuant to MM Docket 88-375 (Class A stations) OR the facility complies with the spacing requirements of 47 C.F.R. Section 73.207.	<input type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 11]
	b. <b>International Coordination.</b> The transmitter site is greater than 320 km from the Canadian or Mexican borders OR coordination for the station's international class is complete.	<input type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 12]

<p>c. <b>Interference.</b> The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied OR are not applicable.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 13]</p>
<p><b>Exhibit required.</b> If the proposed facility must be notified to the entities set forth in 47 C.F.R. Section 73.1030, the applicant must provide a copy of the written approval for the ERP increase from the affected entity.</p>	<p>[Exhibit 14]</p>
<p>d. <b>Multiple Ownership Showing.</b> The increase in ERP will not require the consideration of a multiple ownership showing pursuant to 47 C.F.R. Section 73.3555.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 15]</p>
<p>e. <b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an <b>Exhibit is required.</b></p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 16]</p>
<p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	
<p>11. <b>Increasing vertically polarized effective radiated power.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(4) to authorize an increase in the vertically polarized ERP for a station operating in the reserved band (Channels 200-220)?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>
<p>a. <b>TV Channel 6 Protection Requirements.</b> The facility complies with the spacing requirements of 47 C.F.R. Section 73.525(a)(1).</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 17]</p>
<p>b. <b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1 306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an <b>Exhibit is required.</b></p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 18]</p>
<p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	
<p>12. <b>Decreasing effective radiated power (non-reserved channel).</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the nonreserved band (Channels 221-300)?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>
<p>a. <b>Community Coverage .</b> The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.315 where the distance to the 3.16 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 19]</p>
<p>b. <b>Auxiliary Facilities.</b> The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a).</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 20]</p>
<p>c. <b>Multiple Ownership Showing.</b> The decrease in ERP is not requested or required to establish compliance with 47 C.F.R. Section 73.3555.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 21]</p>

<p>13. <b>Decreasing effective radiated power (reserved channel).</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the reserved band (Channels 200-220)?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>a. <b>Community Coverage .</b> The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.1690(c)(8)(i) where the distance to the 1 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313.</p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 22]
<p>b. <b>Auxiliary Facilities.</b> The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a).</p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 23]
<p>14. <b>Replacing a directional antenna.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(2) to replace a directional antenna with another directional antenna?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>a. <b>Measurement of Directional Antenna.</b> The composite measured pattern and measurement procedures comply with 47 C.F.R. Section 73.1690(c)(2). <b>Exhibit required.</b></p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 24] [Exhibit 25]
<p>b. <b>Installation of Directional Antenna.</b> The installation of the directional antenna complies with 47 C.F.R. Section 73.1690(c)(2). <b>Exhibit required.</b></p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 26] [Exhibit 27]
<p>15. <b>Deleting contour protection status.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(6) to delete contour protection status (47 C.F.R. Section 73.215) for a station operating in the nonreserved band (Channels 221-300)?</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>If "Yes" to the above, the applicant certifies that the facility complies with the spacing requirements of 47 C.F.R. Section 73.207.</p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 28]
<p>16. <b>Use a formerly licensed main facility as an auxiliary facility.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1675(c)(1) to request authorization to use a formerly licensed main facility as an auxiliary facility and/or change the ERP of the proposed auxiliary facility?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>a. <b>Auxiliary antenna service area.</b> The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a).</p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 29]
<p>b. <b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1 306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an <b>Exhibit is required.</b></p>	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 30]
<p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	
<p>17. <b>Change the license status.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(9) to change the license status from commercial to noncommercial or from noncommercial to commercial?</p>	<input type="radio"/> Yes <input type="radio"/> No

If "Yes" to the above, submit an exhibit providing full particulars. For applications changing license status from commercial to noncommercial, include Section II of FCC Form 340 as an exhibit to this application.	[Exhibit 31]
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**PREPARERS CERIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

## Exhibits

### Attachment 10

Description
<a href="#">KMNV Tower Base Impedance Measurement</a>
<a href="#">KNOW Aux 3 RFR Statement</a>

# ***KMNV Tower Base Impedance Measurement***

5/24/17

A measurement of the KMNV tower base impedance was made after structural modifications had been added to the tower and two FM antennas and lines were installed. The KMNV tower is a grounded base skirt fed AM tower so no isocouplers were required to isolate the FM lines.

The KMNV Tower base impedance was measured using a Delta model OIB-1 RF impedance bridge, serial #596. The base impedance measurement was taken with the transmitter operating at the license power of 1000 watts. A base current value was observed on the Delta TCT-5 of 3.81 Amps RF.

The OIB measured **68.9 ohms** +j220, which agrees with the base current meter value for a base impedance of this value.

This measurement verifies that the base impedance of the KMNV tower did not change from the license value after the structural work was performed on the tower.

## **Certification**

I hereby state that the station for which this information has been prepared has retained me to conduct the measurements and prepare this report.

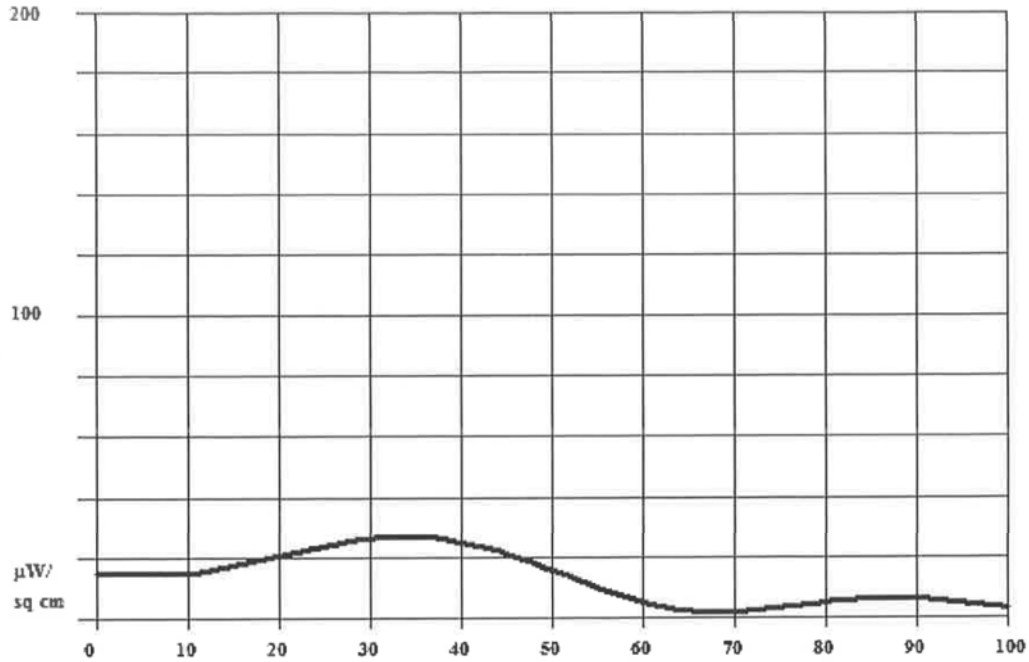
All information contained within this report is true and accurate to the limits of the test equipment used.



Douglas Thompson  
May 24, 2017



KNOW Aux 3 RFR Statement  
 Environment = Uncontrolled, Maximum = 200  $\mu\text{W}/\text{sq cm}$   
 ERI/JAMPRO JBCP "Roto" (EPA)-Type 3, 8 Bays, Spac= 1, H=100 kW, V=100 kW, 124 M.A



HORZ. DISTANCE FROM FM RADIATOR VS POWER DENSITY (Microwatt/Square cm)  
 Dist(Meters) PD (H) PD (V) Total ( $\mu\text{W}/\text{cm}^2$ ) Percent Max.

Dist(Meters)	PD (H)	PD (V)	Total ( $\mu\text{W}/\text{cm}^2$ )	Percent Max.
0	6.52	6.52	13.04	6.5
1	6.52	6.52	13.04	6.5
2	6.52	6.52	13.03	6.5
3	6.51	6.51	13.03	6.5
4	6.51	6.51	13.02	6.5
5	6.51	6.51	13.01	6.5
6	6.50	6.50	13.00	6.5
7	6.49	6.49	12.99	6.5
8	6.49	6.49	12.97	6.5
9	6.47	6.47	12.95	6.5
10	6.46	6.46	12.92	6.5
11	6.50	6.50	13.00	6.5
12	6.83	6.83	13.66	6.8
13	7.16	7.16	14.33	7.2
14	7.50	7.50	15.00	7.5
15	7.84	7.84	15.67	7.8
16	8.17	8.17	16.34	8.2
17	8.51	8.51	17.01	8.5
18	8.84	8.84	17.67	8.8
19	9.16	9.16	18.32	9.2
20	9.48	9.48	18.95	9.5
21	9.78	9.78	19.57	9.8
22	10.11	10.07	20.18	10.1
23	10.60	10.28	20.88	10.4
24	11.09	10.47	21.55	10.8
25	11.55	10.64	22.19	11.1



Dist (Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max.
26	12.00	10.79	22.78	11.4
27	12.42	10.91	23.33	11.7
28	12.81	11.02	23.83	11.9
29	13.17	11.09	24.27	12.1
30	13.50	11.14	24.64	12.3
31	13.78	11.16	24.95	12.5
32	14.03	11.15	25.17	12.6
33	14.22	11.10	25.32	12.7
34	14.17	11.17	25.34	12.7
35	14.02	11.23	25.26	12.6
36	13.83	11.25	25.09	12.5
37	13.59	11.23	24.82	12.4
38	13.31	11.16	24.47	12.2
39	12.99	11.04	24.02	12.0
40	12.62	10.87	23.48	11.7
41	12.20	10.65	22.85	11.4
42	11.75	10.39	22.14	11.1
43	11.26	10.08	21.34	10.7
44	10.74	9.72	20.46	10.2
45	10.19	9.33	19.51	9.8
46	9.64	8.90	18.53	9.3
47	9.06	8.44	17.50	8.7
48	8.47	7.94	16.41	8.2
49	7.86	7.43	15.29	7.6
50	7.24	6.89	14.13	7.1
51	6.61	6.34	12.95	6.5
52	5.98	5.78	11.76	5.9
53	5.37	5.21	10.58	5.3
54	4.76	4.65	9.41	4.7
55	4.17	4.10	8.28	4.1
56	3.61	3.57	7.18	3.6
57	3.07	3.06	6.13	3.1
58	2.58	2.57	5.15	2.6
59	2.13	2.11	4.25	2.1
60	1.72	1.69	3.42	1.7
61	1.35	1.32	2.67	1.3
62	1.02	0.99	2.00	1.0
63	0.73	0.70	1.43	0.7
64	0.49	0.47	0.96	0.5
65	0.30	0.28	0.58	0.3
66	0.15	0.14	0.30	0.1
67	0.06	0.05	0.11	0.1
68	0.01	0.01	0.02	0.0
69	0.00	0.00	0.01	0.0
70	0.04	0.04	0.08	0.0
71	0.12	0.11	0.22	0.1
72	0.22	0.20	0.43	0.2
73	0.36	0.33	0.69	0.3
74	0.52	0.48	1.00	0.5
75	0.71	0.64	1.34	0.7
76	0.90	0.81	1.71	0.9
77	1.10	0.99	2.09	1.0

Dist (Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max.
78	1.31	1.17	2.47	1.2
79	1.51	1.34	2.85	1.4
80	1.70	1.51	3.21	1.6
81	1.87	1.66	3.54	1.8
82	2.03	1.80	3.83	1.9
83	2.17	1.92	4.09	2.0
84	2.28	2.01	4.29	2.1
85	2.37	2.08	4.45	2.2
86	2.42	2.13	4.55	2.3
87	2.45	2.14	4.59	2.3
88	2.44	2.13	4.56	2.3
89	2.39	2.09	4.48	2.2
90	2.33	2.02	4.35	2.2
91	2.23	1.94	4.17	2.1
92	2.12	1.84	3.95	2.0
93	1.98	1.72	3.70	1.9
94	1.84	1.58	3.42	1.7
95	1.67	1.44	3.12	1.6
96	1.50	1.29	2.80	1.4
97	1.33	1.14	2.47	1.2
98	1.16	0.99	2.15	1.1
99	0.98	0.84	1.83	0.9
100	0.82	0.70	1.52	0.8