Conducted Emissions Test Report

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE C63.4 - 2009</td>
<td>American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REVIEW</th>
<th>SIGNATURE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed By:</td>
<td>Mike Gruber – W1MG</td>
<td>1/13/14</td>
</tr>
<tr>
<td>Results Reviewed By:</td>
<td>Jerry Ramie – KI6LGY</td>
<td>1/15/14</td>
</tr>
</tbody>
</table>

Summary of Test Results: **Fail**

**EUT CONFIGURATION**

- Manufacturer: Lumatek
- Model Number: LK1000
- Serial Number: N/A
- Importer: Hydrofarm Horticultural Products, Petaluma, CA [www.hydrofarm.com](http://www.hydrofarm.com)

See Appendix A for additional details. Other Sources include but not limited to:

**Sunlight Supply, Inc.**
Vancouver, WA (Corporate Headquarters)
5408 NE 88th Street, Bldg A
Vancouver, WA 98665
Tel: 360-883-8846
Fax: 360-883-5395

**SLS California**
Livermore, CA
Tel: 925-337-8070
Fax: 925-454-1535

**Hydrofarm WEST**
2249 S. McDowell Ext.
Petaluma CA 94954
Tel: 800-634-9990
GENERAL INFORMATION

OBJECT
This document outlines the conducted emissions requirements applicable to lighting equipment covered under 47CFR18. This procedure will be used for the testing of lighting products in the ARRL EMC laboratory.

EUT PASS CRITERIA (Consumer)  

<table>
<thead>
<tr>
<th>Test Location</th>
<th>Test</th>
<th>Frequency Range</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>Conducted Emissions</td>
<td>0.45 MHz - 2.51 MHz</td>
<td>250 μV / 48 dB(μV) quasi peak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.51 MHz - 3 MHz</td>
<td>3,000 μV / 70 dB(μV) quasi peak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 MHz - 30 MHz</td>
<td>250 μV / 48 dB(μV) quasi peak</td>
</tr>
</tbody>
</table>

SETUP CHECKLIST

<table>
<thead>
<tr>
<th>Initials</th>
<th>Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG</td>
<td>The EUT should be in new condition, built to production specifications, using production parts and using production processes. (commercially available)</td>
</tr>
<tr>
<td>MG</td>
<td>Schedule EMC facility time with the ARRL Laboratory. (This test is performed by formally trained users of the EMC facility)</td>
</tr>
<tr>
<td>MG</td>
<td>Complete Equipment List Table.</td>
</tr>
<tr>
<td>MG</td>
<td>Connect output of LISN to input of EMC Receiver.</td>
</tr>
<tr>
<td>MG</td>
<td>Apply rated voltage to input of LISN.</td>
</tr>
<tr>
<td>MG</td>
<td>Connect the EUT to the LISN using a standard power cord supplied with the product. (approx. 1.2m in length)</td>
</tr>
<tr>
<td>MG</td>
<td>The Reference Ground Plane on the floor should be at least 2m x 2m in size and shall extend 0.5m beyond the footprint of the EUT.</td>
</tr>
<tr>
<td>MG</td>
<td>For measuring table-top devices, mount onto a table 0.8m high and use a vertical conducting plane at least 2m x 2m in size located 40cm to the rear of the EUT and bonded to the reference ground plane with 3cm-wide straps at intervals less than 1m.</td>
</tr>
<tr>
<td>MG</td>
<td>Test each EUT model number at its nominal (rated) voltage.</td>
</tr>
<tr>
<td>MG</td>
<td>Photograph the test setup and include in this test report.</td>
</tr>
</tbody>
</table>
EQUIPMENT LIST

Use the following equipment (or equivalent) in executing this procedure. If an equivalent piece of test equipment is used, then a note with the make, model, serial number, and calibration due date of the equipment must be made in the table.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Description</th>
<th>Model Number</th>
<th>Serial Number</th>
<th>Cal Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>Conducted Emissions test area</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>R&amp;S</td>
<td>EMC Spectrum Analyzer/EMI Receiver</td>
<td>FSH3</td>
<td>102393</td>
<td>06-21-14</td>
</tr>
<tr>
<td>N/A</td>
<td>Measurement Cable</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>R&amp;S</td>
<td>Line Impedance Stabilization Network (LISN)</td>
<td>ENV216</td>
<td>100057</td>
<td>Self</td>
</tr>
</tbody>
</table>
CONDUCTED EMISSIONS TEST

1. Bond the LISN to the ground plane of the test area using a grounding cable that is as short as possible.
2. Connect the EUT power cable to the Line Impedance Stabilization Network (LISN).
3. Measure the conducted emissions from the EUT using the LISN and a quasi-peak detector.
4. Record the six highest emissions from the EUT and compare the voltage to the limits specified in Table 1.
5. Attach emissions plots to this procedure.

<table>
<thead>
<tr>
<th>Six Highest Emissions</th>
<th>Nominal Line Voltage</th>
<th>Interference Voltage (Quasi Peak)</th>
<th>Limit (Quasi Peak)</th>
<th>PASS / FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4MHz</td>
<td>120VAC</td>
<td>106dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
<tr>
<td>8.1MHz</td>
<td>120VAC</td>
<td>101dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
<tr>
<td>10.9MHz</td>
<td>120VAC</td>
<td>64dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
<tr>
<td>14.2MHz</td>
<td>120VAC</td>
<td>65dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
<tr>
<td>17.6MHz</td>
<td>120VAC</td>
<td>87dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
<tr>
<td>21.2MHz</td>
<td>120VAC</td>
<td>64dBµV</td>
<td>48 dB(µV)</td>
<td>FAIL</td>
</tr>
</tbody>
</table>

(See Appendix B for additional rules violations.)

PLOT OF CONDUCTED EMISSIONS (PHASE TO GROUND)

NOTE: The Neutral conductor to ground spectra was very similar.

Lumatek LK-1000 at 600 Watt Setting
All Power Settings Are Similar. See Appendix C for supplemental data.
Appendix A

Lumatek LK1000 Purchasing Info

On October 25, 2013, the ARRL Purchasing Department placed an order for the subject Lumatek LK1000 grow light. This order was placed through the Sears Web site at www.sears.com. The order was shipped on October 29 and received on November 5, 2013.

Supplemental and supporting documents are included as follows:

1) Purchase order
2) Email order process notification
3) Email shipping notification

The purchase of this light was made by Sears through ePowerBuys. Sears Holdings Corporation and ePowerBuys address and contact information are as follows:

- Sears Holdings Corporation Contact Information and CEO
  Edward S. Lampert, Chairman & CEO
  Sears Holdings Corporation
  3333 Beverly Road
  Hoffman Estates, IL 60179
  Tel: (847) 286-2500 (Main Number)

- ePowerBuys Contact Info
  ePowerBuys
  24885 Danafir
  Dana Point, CA 92629
  Tel: (949) 716-5312
  Email: customerservice@epowerbuys.com

Supplemental and supporting documents are included as follows:

1) Purchase order
2) Email order process notification
3) Email shipping notification
Thanks for your order #581131591

Paid with Master Card ending in 8326
A confirmation email will be sent to krochette@arrl.org

Items We're Shipping

<table>
<thead>
<tr>
<th>Merchandise Subtotal</th>
<th>$351.42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping/Handling</td>
<td>$33.50</td>
</tr>
<tr>
<td>Pre tax Subtotal</td>
<td>$384.92</td>
</tr>
<tr>
<td>Tax</td>
<td>$24.45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$409.37</strong></td>
</tr>
</tbody>
</table>

Arriving Nov 18

**Lumatek Lumatek LK1000 Dual Voltage HPS-MH Dial A Watt Dimmable, 1000W-750W-600W**

Sold by ePowerBuys Item # SPM6517838405 Mfr. Model #LK1222N Qty 1

https://www.sears.com/shc/s/OrderConfirmationDisplayView?lpToolsTotal=0.00&ShopL... 10/25/2013
From: Sears [mailto:sears@value.sears.com]
Sent: Friday, October 25, 2013 3:35 PM
To: Rochette, Kim
Subject: Your sears.com order is being processed

Order #581131591

Thank you for shopping with Sears!

Dear Purchasing,

Your order 581131591 is processing.

When your order ships, we'll send you an email confirmation that includes your order's tracking number.

We truly appreciate your business and hope everything you ordered meets or exceeds your expectations.

Best regards,
Imran Jooma
EVP & President, Marketing and Online
Imran@customerservice.sears.com

Please keep this email as a receipt for your purchase.

Order #581131591

ORDER HIGHLIGHTS

Pending Points Earned
Base Points: 3514
See Details

BILLING INFORMATION

Purchasing Department
225 Main St.
MG-213
Newington, CT 06111
860-594-0217
860-594-0200
krochette@arrl.org

WE LOVE FEEDBACK

Let us know how we did

SHIP INFORMATION

Shipping Address
Purchasing Department
225 Main St.
MG-213
Newington, CT 06111
860-594-0217
860-594-0200

Expected Arrival Date: 11/18/2013
Delivery Method: Ship

Order Date: 25-Oct-2013
Return Code: 3689-9517-1533-2969-0619

Salescheck #: 093012579529
## ITEM DETAILS

<table>
<thead>
<tr>
<th>ITEM DETAILS</th>
<th>PRICE</th>
<th>QTY</th>
<th>PROMOTIONS</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item# SPM6517838405</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mfr# LK1222N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description: Lumatek LK1000 Dual Voltage HPS-MH Dial A Watt Dimmable, 1000W-750W-600W</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sold by: ePowerBuys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reg.</strong> $351.42</td>
<td></td>
<td>1</td>
<td></td>
<td>$351.42</td>
</tr>
</tbody>
</table>

**Subtotal:** $351.42

**Item Total:** $351.42

## ORDER TOTAL

**Merchandise Subtotal:** $351.42

**Total Shipping/Handling Charges:** $33.50

**Pre Tax Subtotal:** $384.92

**Tax (Where Applicable):** $24.45

**Total Due:** $409.37

**Total Charged to Credit Card:** $409.37

**MasterCard Card ending in:** ************8326

## HERE ARE YOUR PENDING SHOP YOUR WAY℠ POINTS THAT COULD BE EARNED WITH THIS ORDER

<table>
<thead>
<tr>
<th>TOTAL POINTS</th>
<th>TOTAL POINTS VALUE</th>
<th>BASE POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3514</td>
<td>$3.51</td>
<td>3514</td>
</tr>
</tbody>
</table>

Points displayed are estimates only. Points earned vary based on purchase(s), offers, cancellations, or subsequent modifications to your order.
**Email Shipping Notification**  
(Appendix A Continued)

**From:** Sears [mailto:sears@value.sears.com]  
**Sent:** Tuesday, October 29, 2013 3:12 PM  
**To:** Rochette, Kim  
**Subject:** Your sears.com order has been shipped!

---

**Dear Purchasing,**

Great news – your order **581131591** has shipped!

**TRACK MY PACKAGE ▶**

Your package is being shipped by UPS and the tracking number is 1Z7W541X0392274520. It may take 24 hours for your tracking number to return any information.

Thank you again for shopping with us!

Best regards,

Imran Jooma  
EVP & President, Marketing and Online  
Imran@customerservice.sears.com

---

**Shipping Information**

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Shipped Items</th>
<th>QTY</th>
<th>Item Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPM6517838405</td>
<td>Lumatek LK1000 Dual Voltage HPS-MH Dial 1 Watt Dimmable, 1000W-750W-600W</td>
<td>1</td>
<td>$351.42</td>
</tr>
</tbody>
</table>

Order Date: 25-Oct-2013  
Salecheck Number: 093012579529  
Return code: 3689-9517-1533-2969-0619

---

**Billing Information**

<table>
<thead>
<tr>
<th>Payment Information</th>
<th>Billed Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>MasterCard: **********8326</td>
<td>$409.37</td>
</tr>
</tbody>
</table>

---

**Conducted Emissions**

ARRL CONFIDENTIAL
If your order contains an item that is not sold by Sears or Kmart, please be advised that this item cannot be returned or exchanged at your local Sears or Kmart store. Your merchant’s profile, which contains their specific return policy, is available via the product page. Please see your merchant’s profile for additional details.

Sears International Orders
The Sears.com International customer support team can be reached at: International@customerservice.sears.com. You may also view answers with regards to order status, return policies, and other frequently asked questions: click here.

Shop Your Way Rewards
Thank you for shopping at Sears.com and using your Shop Your Way Rewards™ member number. As a valued customer please continue using your Shop Your Way Rewards member number to earn points on qualifying purchases every time you shop with Sears, Kmart, Lands’ End at Sears, The Great Indoors and mygofer™ stores and online.

For complete Shop Your Way Rewards program terms and conditions, please visit shopyourwayrewards.com.

Rebates
Do you have a rebate? Click here to submit online. Sears makes it easy!

International Customer Service
If you have any questions regarding your international order, please email us at International@customerservice.sears.com.

International Customer Service Page.

Customer Service Information
If you have any questions regarding your order, please email us at Order@customerservice.sears.com or call us at 1-877-234-0784. For more Customer Service information, click here.

Please add sears@value.sears.com to your address book to ensure our emails reach your inbox.

Offers valid only on items Sold by Sears. See details for important disclosures, limitations and exclusions.

Sears shall not be held liable for errors or omissions in pricing. In the event of an error, we will make every effort to accommodate our customers.

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Appendix B

Failure to Meet FCC Labeling Requirements

As the photos in this report show, a circular FCC sticker appears on the bottom of this device. However, there is no additional FCC information included anywhere on the device, box or documentation. There is no reference to either Part 18 or Part 15 of the FCC rules. This lack of proper labeling and documentation is an additional Part 18 rules violation.

Specifically, some of the more important rules that apply in this case are as follows. Please note that paragraph § 18.213 (d) specifically applies to RF Lighting Devices. In addition, some rules regarding equipment authorization under § 18.203 are included for reference purposes:

§ 18.203 Equipment authorization.

(a) Consumer ISM equipment, unless otherwise specified, must be authorized under either the Declaration of Conformity or certification procedure prior to use or marketing. An application for certification shall be filed with the Commission on an FCC Form 731, pursuant to the relevant sections in part 2, subpart J of this chapter and shall also be accompanied by:

(1) A description of measurement facilities pursuant to § 2.948, or reference to such information already on file with the Commission.

(2) A technical report pursuant to §§ 18.207 and 18.311.

§ 18.213 Information to the user.

Information on the following matters shall be provided to the user in the instruction manual or on the packaging if an instruction manual is not provided for any type of ISM equipment:

(a) The interference potential of the device or system

(b) Maintenance of the system

(c) Simple measures that can be taken by the user to correct interference.

(d) Manufacturers of RF lighting devices must provide an advisory statement, either on the product packaging or with other user documentation, similar to the following: This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45–30 MHz. Variations of this language are permitted provided all the points of the statement are addressed and may be presented in any legible font or text style.
APPENDIX C

Lumatek LK-1000 Conducted Emissions Testing
Supplemental Data

The Quasi Peak graphs in this Appendix show that the LK-1000 significantly exceeds all FCC Part 18 limits under all operating conditions.
Lumatek LK-1000
600 Watt Setting
0.10 to 30.1 MHz

Phase to Ground

FAIL

Neutral to Ground

FAIL
Lumatek LK-1000
750 Watt Setting
0.10 to 30.1 MHz

Phase to Ground

FAIL

Neutral to Ground
Lumatek LK-1000
1,000 Watt Setting
0.10 to 30.1 MHz

Phase to Ground

Neutral to Ground
Lumatek LK-1000
Maximum Power Setting
0.10 to 30.1 MHz

Phase to Ground

Neutral to Ground