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So, I did two alternate models using the same T8 lamps but with slightly more efficient ballasts. These options used .65 w/sq ft and .54 w/sq ft respectively. Both produced a more reasonable 45 FC.

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Here are three excellent resources to help you meet the new energy codes:

- Advanced Energy Design Guides — www.ashrae.org/technology/page/938

Or course, the LDL is here to assist you as well. So whether you are involved in new construction or a retrofit, there are many cost-effective methods to capture deep energy savings while meeting current lighting codes.

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Are lower Lighting Power Allowance (LPA) numbers reasonable? by Eric Strandberg, LC

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3 CLASSROOM LIGHTING OPTIONS (32’ x 32’ room w/ 10’ high ceiling)

<table>
<thead>
<tr>
<th>Option</th>
<th>Fixture/Ballast Description</th>
<th>Watts/sq ft</th>
<th>Avg FC</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>3-lamp 28W T8 / elec. NBF</td>
<td>.996</td>
<td>70</td>
</tr>
<tr>
<td>#2</td>
<td>2-lamp 28W T8 / elec. NEMA NBF</td>
<td>.645</td>
<td>45</td>
</tr>
<tr>
<td>#3</td>
<td>New 2-lamp 28W T8 / elec. NEMA LBF</td>
<td>.540</td>
<td>47</td>
</tr>
</tbody>
</table>

#1 - 12 existing deep cell parabolic fixtures w/ standard electronic NBF ballast (NBF = normal ballast factor)
#2 - 12 existing fixtures delamped w/ efficient NEMA NBF ballast
#3 - 12 new high efficiency fixtures w/ NEMA low ballast factor ballast
Spring 2012 Education Series

To register, please visit www.lightingdesignlab.com. For assistance or special requests, please contact Anne Ducey at 206-325-9711, ext. 129 or anne@lightingdesignlab.com.

Morning Class, 10:00 am — 12:00 pm [See fees at bottom of page.]

**Basic Lamp Technologies**

Instructor: Jeff Robbins, LC, MIES

Knowledge of design principles begins with a fundamental understanding of light sources. This class will cover not only current lamp sources, [incandescent, halogen, fluorescent, HIDs], but the emerging technologies as well, such as induction, plasma, LED’s and OLED’s. Comparisons between initial and operating costs will be covered, as well as different performance characteristics between each type. This is a beginner class, intended for anyone needing an introduction to those products, their use, and the terminology specific to technologies; e.g., CCT, CRI, L/W, LLD, BF, PP, etc.

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Class Cities, Dates and Locations

Portland, OR ........ Wed., April 4th ........ Center for Architecture; 403 NE 11th Av; Portland OR 97209
Boise, ID ............ Thurs., April 12th ....... Idaho AGC; 1649 W. Shoreline Drive; Boise, ID 83702
Tacoma, WA .... Tues., April 17th ........ Courtyard by Marriott; 1515 Commerce St; Tacoma WA 98402
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Seattle, WA .... Wed., May 2nd .......... Lighting Design Lab; 2915 4th Av; Seattle, WA 98134

Class Fees

Standard registration .................................................$30 per class [lunch included]
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**New Color Terminology — R9 Value**

by Jeff Robbins, LC, MIES

The “Color Rendering Index”, (CRI), is proving to be inadequate when applied to LED’s.

Using the Universal Coordinate System, a lamp source’s place on the CRI scale involves plotting its color output against that of a black body radiator of the same Correlated Color Temperature (CCT) when tested against 14 represented pigment color samples. (See box, right.)

The first 8, R1-R8, are pastels which are used to establish the ‘general’ CRI number. The other 6 color samples consist of 4 saturated solids (R9-R12) and 2 which represent earth tones, R13 and R14.

The result for each sample is a number between 0 and 100. Traditionally, lamp manufacturers only test their product against the R1-R8 pastel samples. The trouble is, even though LED’s are achieving higher ‘general’ CRI ratings, they still do not perform well in the pastel range. Their color performance is best demonstrated using the R9-R12 saturated color samples. LED’s in the higher color temperatures, 4000K and above, test especially well in R11 (saturated green) and R12 (saturated blue). But if trying to achieve a quality interior lighting environment, the critical color is R9, saturated red, where LED performance is at its weakest. A positive R9 value becomes an important consideration, especially for interior applications where lamps of warmer color temperatures are preferred.

Utilities in the Pacific Northwest have established a minimum R9 value of zero (yes it is possible to achieve a negative value), as part of the criteria to be listed on the region’s Qualified LED Product List [www.lightingdesignlab.com/LEDlists.php]. Once on that list, projects using these products become eligible for rebates from the sponsoring utilities.

**Are utilities still rebating fluorescent retrofits?**

As many of us have been hearing, the T12 fluorescent lamp is going away. Between BSA regulations, and a technology shift to better, more efficient lamps (T8 and T5), there is no doubt that the T12 will be harder to find and hence, will be more costly. But a related question that comes up is: will the utilities still offer incentives for T12 retrofits? The logic is, why rebate something that is going away?

After conducting an informal poll of utilities throughout the region, the answer is basically “yes”. Specifically:

- Incentives for T12 to T8 retrofits will continue in 2012.
- Some utilities may reduce incentives on simple T12 retrofits in 2013.
- Baseline values may increase in some areas, which could reduce the savings percentage and lead to smaller rebates.

If you are considering a retrofit in the region, this year would be the best time to maximize the incentive potential. As always, call your local utility early to ensure a smooth and easy process. A great resource if you are not sure who to call is the Northwest Trade Ally Network at www.northwest-lighting.org. And of course, the staff at the Lighting Design Lab is always happy to help.

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L i g h t i n g  D e s i g n  L a b  n e w s       p a g e  2                       s p r i n g  2 0 1 2

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LDL Leadership
We hope to have a new permanent manager on board by late Spring. We’ll post news on Facebook and send email updates. Make sure we have your current email address. Send to: anne@lightingdesignlab.com

New Tech Guides!
Check out our website for our new series of Lighting Layout Guides.

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