OPEN OFFICE

T8 FLUORESCENT HIGH PERFORMANCE RETROFIT KIT

ROOM CHARACTERISTICS

Length: 60'
Width: 25'
Height: 9'
Reflectivity:
  Ceiling = 80%
  Walls = 50%
  Floor = 20%

PRODUCT SPECIFICATIONS

Dimensions: 24" x 48"
Optics: Refractor Lens
Lamps: (2) F32T8 HP
CCT: 3500K
CRI: 84
Lumens per Lamp: 3100
Ballast Factor: 0.88*
Lamp Lumen Depreciation: 0.95
Efficiency: 91%
Watts: 54.5

* If the light levels are higher than required, consider a lower ballast factor (BF) for greater savings.

THE OPPORTUNITY

In a typical space with a 9' high, lay-in type ceiling, it is possible to retrofit existing luminaires with a kit providing high quality lighting that illuminates both horizontal and vertical surfaces, while greatly reducing energy consumption. Unlike the luminaires they replace, this solution directs light in a manner that evenly illuminates the ceiling, walls and tasks—producing a brighter environment for occupants. Traditional, flat-lensed troffers or parabolic louvered fixtures cannot achieve this type of evenly distributed lighting.

THE SOLUTION

Install 2’ x 4’ high performance retrofit kits that replace existing lamps and ballasts (typically 3 or 4 lamps) with a high efficiency electronic ballast and (2) T8 32w high performance lamps. This combination should meet the illuminance target of 35 average maintained footcandles. This solution will not eliminate all glare on traditional computer screens, but works especially well with flat screen monitors.

DESIGN CONSIDERATIONS

In these examples, the highest light levels are possible only if the luminaires are placed over desks and work areas. Partitions can have a detrimental impact on light levels. Their vertical surfaces absorb and block light creating shadows if installed off-center of the luminaires. However, these high performance lenses minimize this effect. Task lights may still be needed to provide additional illumination, and eliminate shadows in high task areas.
**LAYOUT OPTIONS**

Open Office (2) T8 Fluorescent High Performance Retrofit Kit | 8’ x 10’ Spacing

![Diagram of layout options]

**INSTALLATION SPECS**
- Number of Luminaires: 18
- Luminaire Spacing: 8’ x 10’
- Mounting Condition: Recessed
- Average Illumination: \(~36~\text{fc}~(30”~\text{AFF})\)
- Watts/sq. ft.: ~0.65

Open Office (2) T8 Fluorescent High Performance Retrofit Kit | 8’ x 12’ Spacing

![Diagram of layout options]

**INSTALLATION SPECS**
- Number of Luminaires: 15
- Luminaire Spacing: 8’ x 12’
- Mounting Condition: Recessed
- Average Illumination: \(~30~\text{fc}~(30”~\text{AFF})\)
- Watts/sq. ft.: ~0.54

**CONTROLS STRATEGY**

Though not required in an open office, occupancy controls can save energy, particularly in non-daylight zones. It’s usually best to not turn fixtures all the way off during business hours. Luminaire level lighting controls can be a great way to cope with complex occupancy and daylighting patterns in an open office.

**ENERGY SAVING STRATEGIES**

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>BENEFIT</th>
<th>TECH NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight dimming ballasts in primary daylight zone</td>
<td>Can balance light levels within the space, while using only enough watt- age to maintain target light levels</td>
<td>Light levels maintained from daylight</td>
</tr>
<tr>
<td>Lower ballast factor</td>
<td>Can reduce wattage considerably</td>
<td>Be sure target light levels are not compromised</td>
</tr>
</tbody>
</table>

**ENERGY CODE INFORMATION**

<table>
<thead>
<tr>
<th>JURISDICTION</th>
<th>CODE</th>
<th>LIGHTING POWER ALLOWANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seattle</td>
<td>2012 Seattle Energy Code</td>
<td>0.90 w/sq. ft. (0.98 space x space)</td>
</tr>
<tr>
<td>Washington</td>
<td>2012 WSEC</td>
<td>0.90 w/sq. ft. (0.98 space x space)</td>
</tr>
<tr>
<td>Oregon</td>
<td>2014 OEESC</td>
<td>0.91 w/sq. ft. (0.93 space x space)</td>
</tr>
<tr>
<td>Idaho</td>
<td>2012 IECC</td>
<td>0.90 w/sq. ft. (1.0 space x space)</td>
</tr>
<tr>
<td>Montana</td>
<td>2012 IECC</td>
<td>0.90 w/sq. ft. (1.0 space x space)</td>
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LIGHTING LAYOUT GUIDE SERIES

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