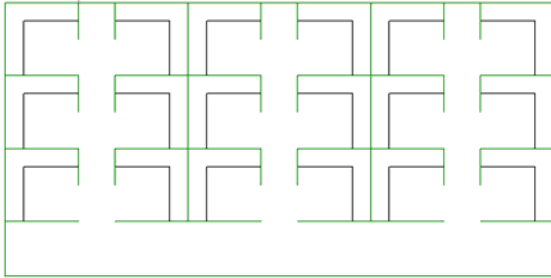


Design Guide: Open Office Areas/Heavy VDT Use Volumetric Lighting

The Problem

To provide high quality lighting in this open office that illuminates the desktops, cubicle floors and adjacent corridor to IESNA recommended light levels while minimizing our watts/sq.ft.



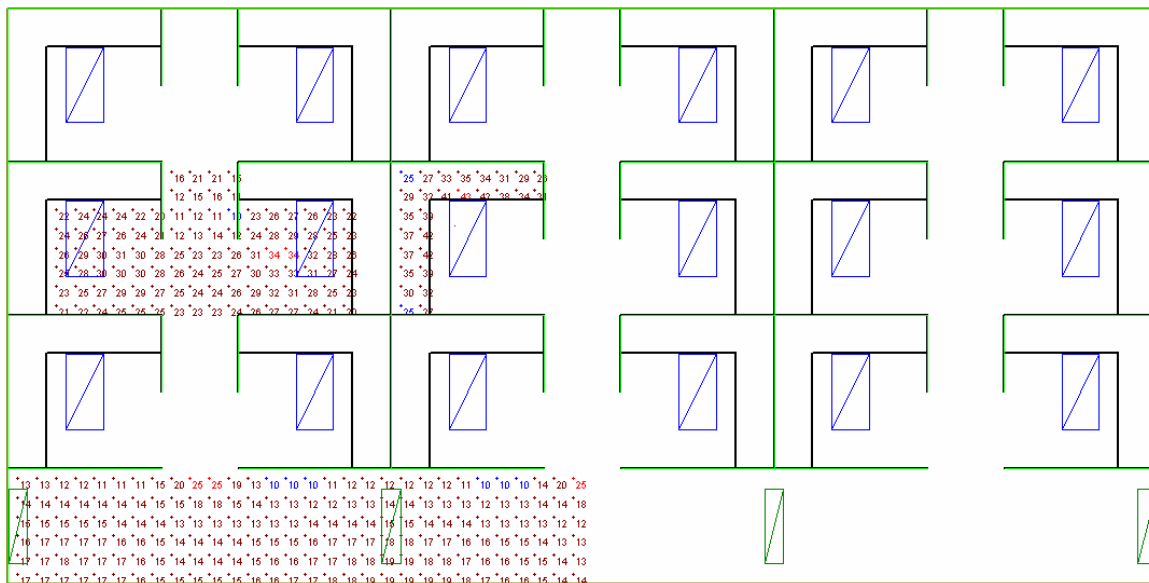
Area Parameters:

- Overall Dimensions - 60' X 30' X 9'
- 60" Partitions

Surface Reflectances:

- Ceiling (acoustical tile) - 70%
- Walls (paint/light) - 50%
- Floor (carpet) - 20%
- Partitions (light grey fabric) - 40%

A Solution



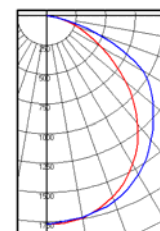
Products Used: (RECESSED VOLUMETRIC TROFFERS)

- (18) 2RT5 28T5 (2x4), 2 lamps (2730 lumens each), 59.6 input watts &
- (4) RT5 28T5 (1X4), 1 lamp (2730 lumens), 31.0 input watts
- Light Loss factor: 0.81 (LLD: 0.95, LDD: 0.90, BF: 0.95)

Installation Specification:

- 2X4 Luminaires placed 1/cubicle & 1X4's spaced 20' O.C. in corridor
- Fc at

	Desk	Floor	Corridor
• Average:	34	24	15
• Maximum:	43	34	25
• Minimum:	25	10	10
• Avg/Min:	1.4	2.4	1.5
- LPD Achieved: **0.66** watts/sq.ft



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Energy Consumption

IECC-2006 allows for 1.0 watts/sq.ft for office buildings while ASHRAE 90.1-2007 allows for 1.1 watts/sq.ft in open office spaces. As LEED-NC, EAc1 references ASHRAE 90.1-2004 which also allows 1.1 watts/sq.ft in open offices, if the remainder of the building systems were to outperform ASHRAE similarly, this design would contribute towards earning 9 LEED points.

Design Considerations

Partitions

- The vertical surfaces of a partition can block a significant amount of light, potentially having a large impact on the overall pattern of illuminance (however, the illuminance values presented here have taken the partitions into account). Some occupants may still want to add task lighting at their individual stations. If used, task lights should use compact fluorescent or a source of equivalent efficacy and should incorporate an occupancy sensor or some other means of automatic shutoff.

Flexibility Issues

- The RT5 is capable of bi-level switching. Should an individual occupant feel they have too much light in their cubicle, a simple switch in the fixture will bring the light contribution from that one fixture down to about 37%, saving additional energy.
- The original system can be installed using RELOC - flexible wiring. This will allow the locations of the lighting to be easily modified to address changes to the layout as they develop.

Controls

- SIMPLY5 - SIMPLY5™ lighting intelligence is designed to maximize RT5's energy savings potential up to 66%. The pairing is engineered to help specifiers and owners meet the stringent energy code requirements more efficiently and effectively. The system is much simpler than the traditional control technologies and costs less. For additional information, visit: <http://www.simply5.net/#>

What is Volumetric Lighting

Enhances Your Environment

- RT5™ volumetric recessed lighting from Lithonia Lighting is a new standard in fluorescent lighting. RT5 luminaires provide volumetric lighting, filling the entire volume of space with just the right amount of light throughout a room. This makes RT5 an ideal solution for offices, schools, hospitals, retail, and other workspaces. RT5 produces a softer, more comfortable light, truly enhancing the environment.

Creates Visual Harmony

- By providing an even distribution of soft light, RT5 volumetric lighting makes workspaces more attractive and facial features more lively and well-defined. They also eliminate the glare and dark spots associated with parabolics, so the environment is more comfortable.

Improves Overall Aesthetics

- Thanks to their unique design, RT5 fixtures improve the aesthetics of any room by creating an unprecedented combination of volumetric lighting and a quiet ceiling. The fixture itself, with its measured proportions and elegant lines, is also pleasing to the eye, without drawing undue attention.