

LIGHTING LAYOUT GUIDE SERIES

CLASSROOM GUIDE 2

ROOM CHARACTERISTICS

Length: 32'

Width: 30'

Height: 9'

Reflectivity:

Ceiling = 80%

Walls = 60%

Floor = 20%

PRODUCT SPECIFICATIONS



Dimensions: 24" x 48"

Optics: Lens: Diffuse Acrylic Lens

Lamps: (2) F32T8 HP

CCT: 3500K

CRI: 84

Lumens per Lamp: 3100

Ballast Factor: 1.0*

Lamp Lumen Depreciation: 0.95

Luminaire Efficiency: 78%

Watts: 64

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

CLASSROOM

T8 FLUORESCENT HIGH PERFORMANCE LENSED RECESSED



THE OPPORTUNITY

In this typical classroom space with a 9' high ceiling, it is possible to provide high quality, even lighting that both illuminates vertical surfaces and the classroom desk tops to recognized standards, and meets or beats the local energy codes. High performance lensed luminaires are better at redirecting light to evenly illuminate walls and task areas than traditional recessed luminaires with parabolic louvers.

THE SOLUTION

Install 2' x 4' high performance lensed luminaires, equipped with high efficiency electronic ballasts and (2) T8 32w high performance lamps. This combination meets the target of 35+ average maintained footcandles (fc). Though these solutions do not eliminate glare on older computer screens, they work well with flat screen monitors.

DESIGN CONSIDERATIONS

With this recessed example, uniformity is achieved through a proper spacing-to-mounting height layout. Typically, a contrast ratio of 7 to 1 or less on a work surface is desirable. This 8' x 10' spacing reduces that ratio to about 3.5 to 1. The result is a space that is almost perfectly uniform, which may need some accent lighting in order to create visual interest.



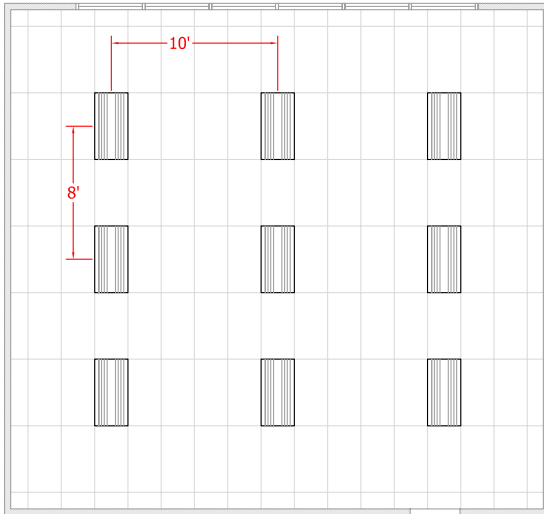
www.lightingdesignlab.com

NORTHWEST
LIGHTING NETWORK

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LAYOUT OPTIONS

Classroom (2) T8 HP Fluorescent High Performance Lensed – Recessed | 8' x 10' Spacing



INSTALLATION SPECS

Number of Luminaires: 9
Luminaire Spacing: 8' x 10' on center
Mounting Condition: Recessed
Mounting Height: 9'
Average Illumination: ~43 fc (30" AFF)
Watts/sq. ft.: ~0.64

IES Recommended Footcandles (fc):
 30 - 50 fc (30" AFF)

CONTROLS STRATEGY

All codes in the Northwest Region require manual ON for classrooms or if the lights are automatically switched ON, they must come ON to 50% power.

Controlling lights separately in the instruction area of the classroom can allow for more energy savings.

ENERGY SAVING STRATEGIES

STRATEGY	BENEFIT	TECH NOTE
Daylight dimming ballasts in primary daylight zone	Can balance light levels within the space while only using enough wattage to maintain target light levels	Light levels maintained from daylight

ENERGY CODE INFORMATION

JURISDICTION	CODE	LIGHTING POWER ALLOWANCE
Seattle	2012 Seattle Energy Code	0.99 w/sq. ft. (1.24 space x space)
Washington	2012 WSEC	0.99 w/sq. ft. (1.24 space x space)
Oregon	2014 OEESC	1.01 w/sq. ft. (1.24 space x space)
Idaho	2012 IECC	1.20 w/sq. ft. (1.30 space x space)
Montana	2012 IECC	1.20 w/sq. ft. (1.30 space x space)