

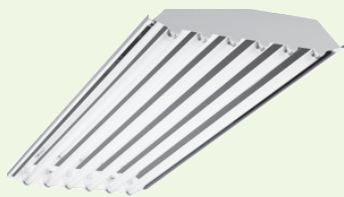
LIGHTING LAYOUT GUIDE SERIES

WAREHOUSE GUIDE 4

ROOM CHARACTERISTICS

Length: 150'
Width: 72'
Height: 32' Open Ceiling
Reflectivity:
Ceiling = 80%
Walls = 30%
Floor = 20%

PRODUCT SPECIFICATIONS



Dimensions: 17" x 48"
Optics: Specular Aluminum Reflector
Lamps: (6) F32T8 HP
CCT: 3100K
CRI: 84
Lumens per Lamp: 3500
Ballast Factor: 1.15*
Lamp Lumen Depreciation: 0.95
Luminaire Efficiency: 87%
Watts: 217

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

NOTE: Lower wattage T8 lamps may be an option in climate controlled spaces, however T8 lamps can experience performance degradation in temperatures below 60°F.

OPEN WAREHOUSE

T8 FLUORESCENT HIGH PERFORMANCE



THE OPPORTUNITY

In a typical high, open ceiling warehouse application, it is possible to provide high quality lighting that illuminates the warehouse floor area to recognized standards, and meets or beats the local energy codes. This layout provides broad, even lighting throughout the space, allowing for better product recognition and improved productivity.

THE SOLUTION

Install industrial high bay fluorescent luminaires on 20' x 24' centers, equipped with T8 electronic ballasts and (6) 32w T8 high performance lamps. For this application, uniformity of illumination is desirable, and vertical illumination is far less important. This layout distributes light evenly throughout the space, at contrast ratios of about 3:1, and maintains an average illumination level of about 20+ footcandles.

DESIGN CONSIDERATIONS

In this application, the emphasis is not only on appropriate horizontal illumination, but on uniformity as well. The layout achieves a desirable contrast ratio.



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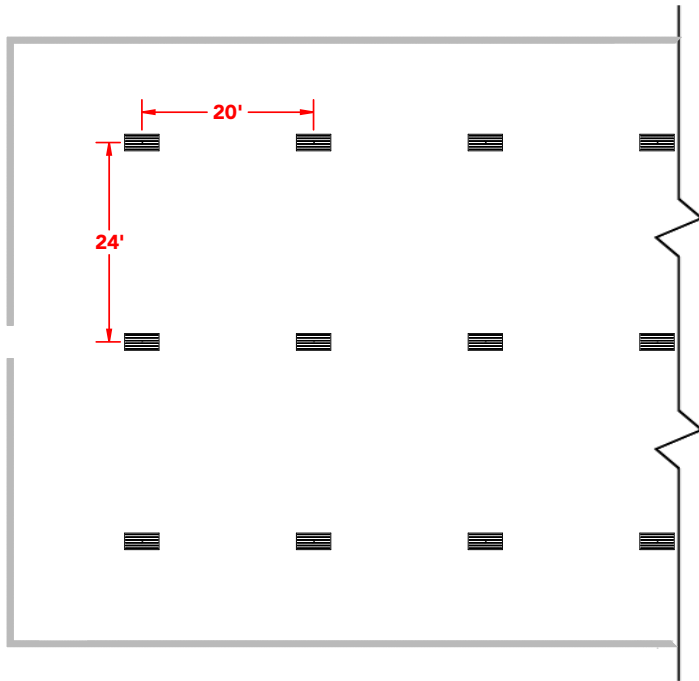
www.lightingdesignlab.com

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LIGHTING NETWORK

www.nwlightingnetwork.com

LAYOUT OPTIONS

Open Warehouse (6) T8 Fluorescent | 20' x 24' Spacing



INSTALLATION SPECS

Number of Luminaires: 21 (12 shown here)
Luminaire Spacing: 20' x 24'
Mounting Condition: Pendant
Mounting Height: 28'
Average Illumination: ~22 fc
Watts/sq. ft.: ~0.42

IES Recommended Footcandles (fc):
 10 - 30 fc

CONTROLS STRATEGY

Significant energy savings can be gained by using occupancy sensors to turn light off automatically after hours and when the space is empty during business hours.

ENERGY CODE INFORMATION

JURISDICTION	CODE	LIGHTING POWER ALLOWANCE
Seattle	2012 Seattle Energy Code	0.50 w/sq. ft. (0.58 space x space)
Washington	2012 WSEC	0.50 w/sq. ft. (0.58 space x space)
Oregon	2014 OEESC	0.66 w/sq. ft. (0.58 space x space)
Idaho	2012 IECC	0.60 w/sq. ft. (0.60 space x space)
Montana	2012 IECC	0.60 w/sq. ft. (0.60 space x space)

ENERGY SAVING STRATEGIES

STRATEGY	BENEFIT	TECH NOTE
Daylight dimming sensors near skylights	Can balance light levels within the space, while using only enough wattage to maintain target light levels	Light levels maintained from daylight
Integrated occupancy sensors	Simple to commission and minimizes installation costs	Light levels remain equal to base design
Lower ballast factor	Can reduce wattage considerably	Be sure target light levels are not compromised