

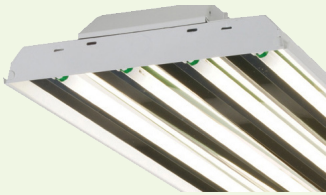
LIGHTING LAYOUT GUIDE SERIES

WAREHOUSE GUIDE 3

ROOM CHARACTERISTICS

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

PRODUCT SPECIFICATIONS



Dimensions: 12" x 48"
Optics: Specular Aluminum Reflector
Lamps: (4) F54T5 HO
CCT: 3500K
CRI: 85
Lumens per Lamp: 4400
Ballast Factor: 1.15
Lamp Lumen Depreciation: 0.95
Luminaire Efficiency: 87%
Watts: 226

OPEN WAREHOUSE

T5HO FLUORESCENT



THE OPPORTUNITY

In a typical high, open ceiling warehouse application, it is possible to provide high quality lighting that illuminates the warehouse floor and task areas to recognized standards, and meets or beats the local energy codes. When equipped with appropriate optical control, this layout distributes light primarily on horizontal surfaces—allowing for improved task lighting.

THE SOLUTION

Install industrial high bay fluorescent luminaires on 20' x 24' centers, equipped with (4) 54w T5HO lamps. For this application, uniformity of illumination is desirable, and vertical illumination is far less important. This layout distributes light evenly throughout the space and maintains an average illumination level of about 20+ footcandles (fc).

DESIGN CONSIDERATIONS

In this application, the emphasis is not only on appropriate horizontal illumination, but on uniformity as well. Uniform light levels are a critical factor in contributing to a safe work environment.



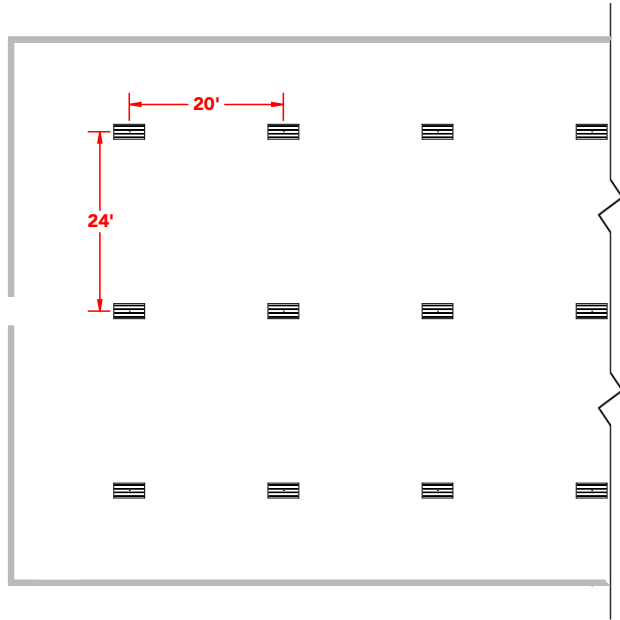
www.lightingdesignlab.com

NORTHWEST
LIGHTING NETWORK

www.nwlightingnetwork.com

LAYOUT OPTIONS

Open Warehouse (4) T5HO 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.: ~0.45

IES Recommended Footcandles (fc):

10 - 30 fc

CONTROLS STRATEGY

Many jurisdictions require automatic off occupancy sensors in these types of spaces, and even when not required, occupancy control is an excellent strategy.

Controlling each aisleway independently is also a good energy saving strategy. Using fixtures with integrated sensors can increase savings in spaces with long aisles.

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

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)