

LIGHTING LAYOUT GUIDE SERIES

WAREHOUSE GUIDE 3

ROOM CHARACTERISTICS

Length: 72'

Width: 150'

Height: 28' Open Ceiling

Reflectivity:

Ceiling = 80%

Walls = 30%

Floor = 20%

Product = 30%

PRODUCT SPECIFICATIONS



Dimensions: 15" x 48"

Optics: Narrow Distribution

Light Source: High Output LEDs

CCT: 4000K

CRI: 70

Lumens: 12,500 delivered

Depreciation: 0.95 @ 60,000 hrs.

Rated Life: 100,000 hrs.

Watts: 125

WAREHOUSE

LED HIGH BAY



THE OPPORTUNITY

In a typical high, open ceiling warehouse application, it is possible to provide high-quality lighting that adequately illuminates the warehouse shelves while meeting or beating the local energy code. The situation requires luminaires with optical control capable of effectively distributing light onto the vertical surfaces. This provides excellent product recognition and improved productivity.

THE SOLUTION

Install industrial LED high bay luminaires centered within each aisle. Luminaires with narrow teardrop shaped optical distributions will provide reasonable uniformity on the vertical face of the shelves while pushing light all the way down to the floor.

DESIGN CONSIDERATIONS

The luminaires must be installed where the bottom of the fixture is at the same level or higher than the top of shelved product. The stack layout must correspond to the lighting layout to minimize shadows. Tall stacks have a large impact on the illumination of the space. Vertical surfaces absorb and block light.



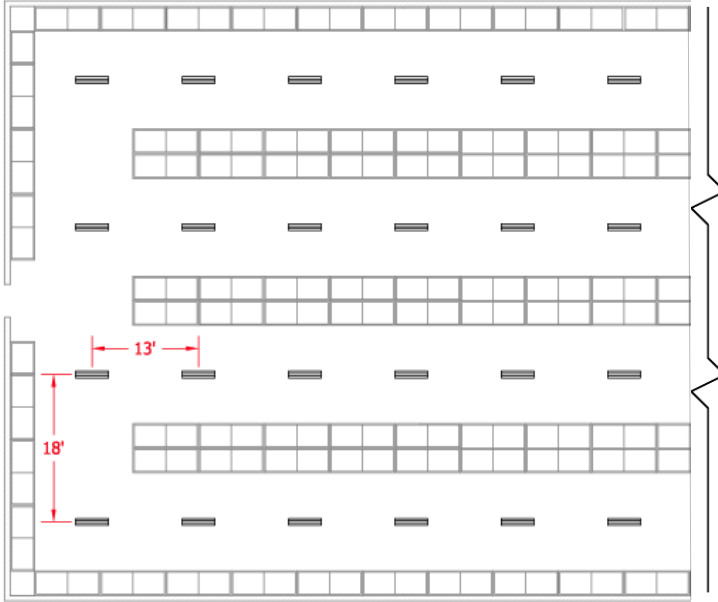
www.lightingdesignlab.com

NORTHWEST
LIGHTING NETWORK

www.nwlightingnetwork.com

LAYOUT OPTIONS

Warehouse LED High Bay | 18' x 13' Spacing



INSTALLATION SPECS

Number of Luminaires: 40
Luminaire Spacing: 18' x 13'
Mounting Condition: Pendant
Mounting Height: 24'
Average Illumination:
 ~23 fc horizontal
 ~9.5 fc vertical
Watts/sq. ft.: ~0.46

IES Recommended Footcandles (fc):
 10 - 30 fc horizontal
 5 - 15 fc vertical

CONTROLS STRATEGY

Many jurisdictions require automatic OFF occupancy sensors in warehouses, and even if it is not required, occupancy control is an excellent strategy.

Controlling each aisle independently is also a good energy saving strategy. Mounting sensors on each fixture can increase savings in spaces with long aisles. This is called luminaire level lighting controls and can simplify the commissioning and increase the granularity of the control.

ENERGY SAVING STRATEGIES

STRATEGY	BENEFITS	LIGHT LEVELS
Daylight dimming in primary daylight zone	Can balance light levels within a space while using only enough wattage to maintain target light levels	Light levels maintained from daylight
Luminaire Level Lighting (LLLC) Controls	Combines multiple controls into one device	Target light levels maintained during occupancy and non-daylit times
Integrated occupancy sensor	Simple to commission and minimizes installation cost	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)