

KOHLER®

By: Lori Wolper
ITMD 116-350
Assignment 3
9/13/2024

LIGHTING



Maxstow Lighted Medicine
Cabinets

What is the lighting like in your bathroom and around your styling space?
How does lighting affect your bathroom's aesthetic?
What role does it play in the way you use your bathroom for grooming?



Maxstow® Lighted Medicine Cabinets

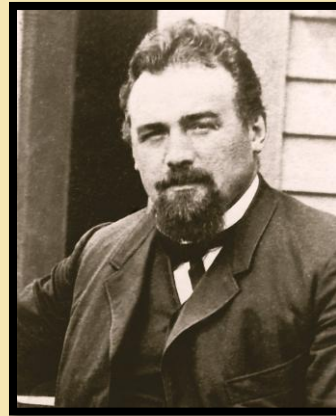
With bright, neutral-color LED lights, an internal electrical outlet, and staggered shelving, Maxstow lighted medicine cabinets add a new dimension of convenience to your daily routine.



These are all questions that Kohler is asking their customers.

This is why they want you to consider a lighted medicine cabinet to fit these needs in your space.

KOHLER



John Michael Kohler



Kohler Co. is one of America's oldest and largest privately held companies comprised of more than 40,000 associates. With more than 50 manufacturing locations worldwide, Kohler is a global leader in the design, innovation and manufacture of kitchen and bath products; luxury cabinetry, tile and lighting; engines, generators, and clean energy solutions; and owner/operator of two, five-star hospitality and golf resort destinations in Kohler, Wisconsin, and St. Andrews, Scotland. Kohler's Whistling Straits golf course hosted the 43rd Ryder Cup in 2021. The company also develops solutions to address pressing issues, such as clean water and sanitation, for underserved communities around the world to enhance the quality of life for current and future generations. For more details, please visit [kohlercompany.com](https://www.kohlercompany.com).

Timeline of KOHLER®

Kohler, primarily known for its plumbing products, expanded into the **lighting market** in **2018**. They introduced a range of lighting products designed to complement their bathroom and kitchen fixtures, focusing on both functionality and aesthetics.

2023

For more than 100 years, Kohler has provided energy resilience solutions for people, businesses, and communities around the world. Under the new name of Kohler Energy, in 2023 the Kohler Power Group transformed itself to better reflect its industry-leading capabilities and the modern, forward-looking, design-oriented characteristics that Kohler is known for. The Energy Group also unveiled the Customer Experience Center—part of a major expansion to the North American generator manufacturing facility in Mosel, Wisconsin—which showcases the proud history of energy resiliency and offers existing and future customers an immersive and gracious experience.

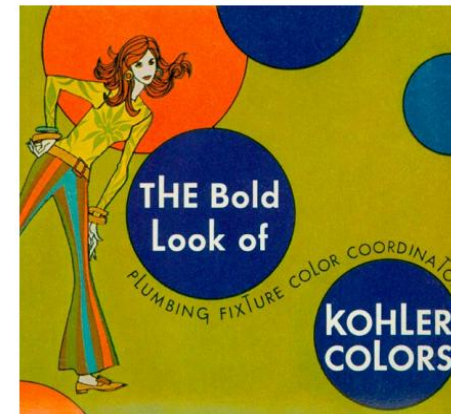


Are They a Green Company?

Yes, **KOHLER** was one of the first companies to establish net-zero operational goals in 2008. They have hired a New Chief Sustainability and DEI Officer to further the work of their sustainability mission. They have produced a 110-page “Global Impact Report” detailing how they are green. The link to the report is below:

<https://resources.kohler.com/corporate/kohler/pdf/Kohler-Full-Report-2023-v9-web.pdf>

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The “Bold Look” tagline, introduced in 1967 to market accent colors, has come to define 150 years of innovative thinking.



KOHLER

Introduction

2023 GHG Emissions Reduction Highlights

- **Kohler, Wisconsin:** Kohler Hospitality has begun an LED lighting upgrade at Sports Core and the Blackwolf Run landscape building as part of a three-year project. The first phase yielded significant energy savings, with Sports Core reducing its energy consumption by 35,924 kWh annually. The Blackwolf Run landscape building reduced its energy consumption by 41,505 kWh annually.

EQUIPMENT SPECIFICATIONS



Maxstow®
22" x 40" lighted medicine cabinet
K-81148-SLE

Features

- Side-integrated LED lighting provides optimally bright bathroom vanity lighting for grooming tasks
- Brightness at 1900 lumens ensures consistent lighting with no hot spots or dark spots. Produces 88 lumens per watt
- Approx. 3000 Kelvin light appearance delivers a neutral light ideal for overall bathroom aesthetics as well as tasks
- Minimum 90 CRI (color rendering index) lets you see yourself in the truest light for makeup application, grooming, and skin care
- Integrated LED bulbs have an estimated life expectancy of 50,000 hours
- Compatible with wall-mount LED dimmers (not included), which allow you to control lighting from multiple locations in the space
- Innovative staggered shelf layout fits tall and short items
- Five fixed shelves—three full width, two partial
- Internal shelf features electrical outlet for powering small devices such as toothbrushes or razors
- Holds optional Moxie® speaker charging dock (K-81106); speaker and charging dock sold separately
- Low-profile design hugs the wall for a clean look
- Front mirror, inside door mirror, and back panel mirror provide superior visibility
- Two-way adjustable hinges with 108° opening capability for easy cabinet access

Material

- Rustproof aluminum

Installation

- Easy surface-mount installation—no wall cutting
- Reversible: install as left- or right-hinge swing
- Includes mounting hardware



Codes/Standards

UL 962
CSA C22.2 No. 0
CA Title 24 JA8
cUL Listed
UL Listed

KOHLER® One-Year Limited Warranty

See website for detailed warranty information.

Available Colors/Finishes

Color tiles intended for reference only.

Color	Code	Description
	DA1	Dark Anodized Aluminum



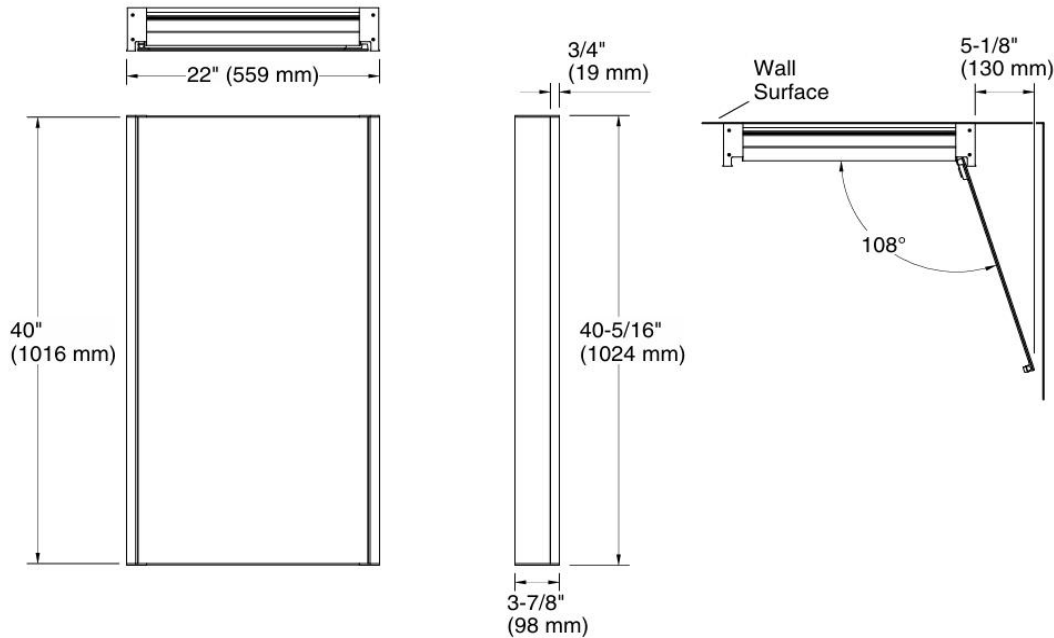
1-800-4KOHLER (1-800-456-4537)
Kohler Co. reserves the right to make revisions without notice to product specifications.
For the most current Specification Sheet, go to www.kohler.com USA or www.kohler.ca Canada
8-27-2024 19:59 - US/CA

EQUIPMENT SPECIFICATIONS

KOHLER®

Maxstow®

22" x 40" lighted medicine cabinet
K-81148-SLE



Required Electrical Service

One circuit required, protected with Class A Ground-Fault Circuit-Interrupter (GFCI). Outside North America, this device may be known as a Residual Current Device (RCD).

Lights: 120 V, 5 A, 60 Hz

Technical Information

All product dimensions are nominal.

Lighting included: Yes

Electrical component rating: LED: 120 V, 5 A, 60 Hz 1200 Lumens, 3000K

Notes

Install this product according to the installation instructions.



1-800-4KOHLER (1-800-456-4537)

Kohler Co. reserves the right to make revisions without notice to product specifications.

**For the most current Specification Sheet, go to www.kohler.com USA or www.kohler.ca Canada
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Installation Instructions

Installation Instructions

Lighted Cabinet

Record your model number:
Noter le numéro de modèle:
Anoto su número de modelo:

Français, page 12
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Thank You for Choosing KOHLER

Need help? Contact our Customer Care Center.

- USA/Canada: 1-800-4KOHLER (1-800-456-4537)
- Mexico: 001-800-456-4537
- For service parts information, visit kohler.com/serviceparts
- For care and cleaning information, visit kohler.com/clean
- Patents: kohlerscompany.com/patents

Warranty

This product is covered under the KOHLER, One-Year Limited Warranty, found at kohler.com/warranty. For a hardcopy of warranty terms, contact the Customer Care Center.

IMPORTANT SAFETY INSTRUCTIONS

Read all instructions before installing or using this product.

- ⚠ **WARNING:** When using electrical products, basic precautions should always be followed, including the following:
- ⚠ **WARNING: Risk of electric shock.** Grounding is required for the outlets within the junction box. Connect only to a circuit protected by a Class A Ground-Fault Circuit-Interrupter (GFCI)*, which protects against line-to-ground shock hazard. Use a 120 VAC, 15 A service.
- ⚠ **WARNING: Risk of electric shock.** A qualified electrician must route all electrical wiring for the product. Improper installation will create an electrical hazard and may not comply with local building and electrical codes.
- ⚠ **WARNING: Risk of electric shock.** Disconnect the power before servicing.
- ⚠ **CAUTION: Risk of electric shock.** Electrical wiring may need to be relocated.

Follow all local plumbing, building, and electrical codes.

*Outside North America, this may be known as a Residual Current Device (RCD).

SAVE THESE INSTRUCTIONS

1.

Tools and Materials



Stud Finder Dimmer/Switch

Plus:

- Wire Cutter/Stripper
- Assorted Drill Bits

Before You Begin

⚠ **CAUTION: Risk of personal injury.** This product is heavy. Get assistance lifting and moving the product.

⚠ **CAUTION: Risk of product or property damage.** The location of the cabinet is critical. Make sure that the door will clear all obstacles (such as a faucet or light fixture). Ensure that any obstacles behind the finished wall will not be damaged during the cutting and/or drilling process.

IMPORTANT! Reroute any electrical wires or water supply piping. If you encounter drain or vent piping or if your wall is load-bearing, consult a professional before proceeding.

IMPORTANT! This cabinet is for surface-mount installation only.

NOTICE: The cabinet is designed for either right or left door swing.

This product requires one switched and one unswitched service supplied to the cabinet.

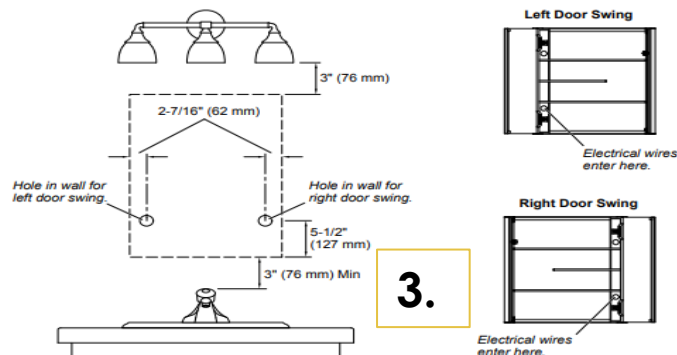
A wall-mounted dimmer or light switch is required. This product is compatible with most residential dimmer switches intended for incandescent and dimmable LED bulbs.

Your product may appear different from the one illustrated. The installation procedure is the same.

Two people should perform this installation.

2.

Roughing-In



NOTICE: The cabinet is designed for either right or left door swing. To change the orientation, rotate the entire cabinet 180 degrees.

Determine whether the door will swing open to the right or left.

When determining the height of the product, verify that the doors will clear all obstacles (such as a faucet or light fixture). A minimum distance of 3\"/>

Plan for the location of the wall-mounted dimmer or light switch and GFCI* protected circuit.

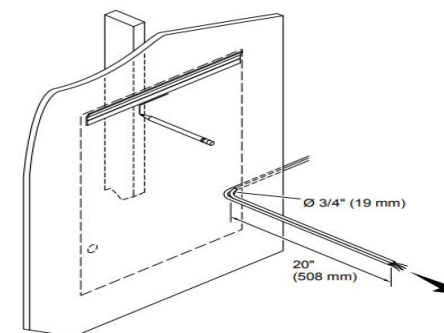
The electrical wires should enter the cabinet 5-1/2\"/>

If the door swings to the right, the electrical wires will route through the finished wall and enter the cabinet on the right side. If the door swings to the left, the electrical wires will route through the finished wall and enter the cabinet on the left side.

*Outside North America, this may be known as a Residual Current Device (RCD).

3.

1. Prepare the Site



⚠ **WARNING: Risk of electric shock.** Disconnect the power before performing the following procedures.

⚠ **WARNING: Risk of electric shock.** A qualified electrician should route all electrical wiring.

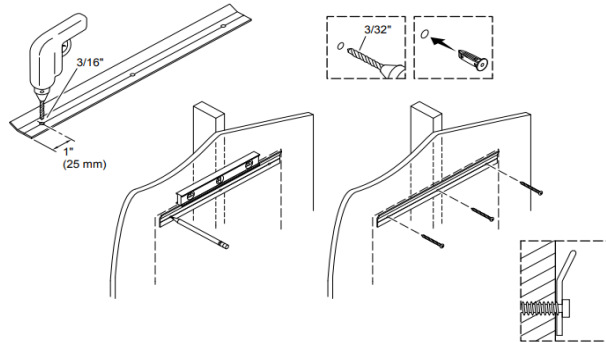
IMPORTANT! This cabinet is for surface-mount installation only.

NOTE: Cabinet orientation with door swing to the right is shown.

- Mark the hanger position and stud locations on the wall.
- Mark the stud locations on the hanger.
- Determine the electrical wire hole location according to the dimensions shown in the "Roughing-In" section.
- Drill a 3/4\"/>
- Route the electrical supply wires through the hole in the finished wall.
- Each wire should extend at least 20\"/>

4.

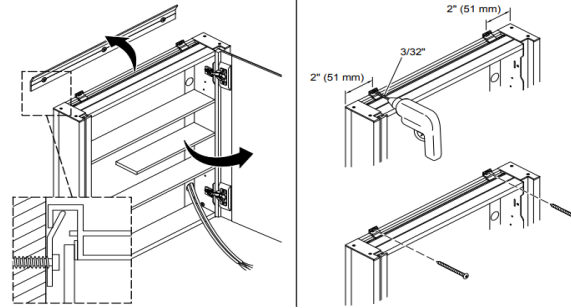
2. Install the Hanger



- ☐ Using a 3/16" drill bit, drill three holes on the groove of the hanger, with at least one of the holes where the stud location is marked.
- ☐ Position the hanger on the wall, with at least one hole at a stud location.
- ☐ Verify that the hanger is level and then mark the hole locations on the wall.
- ☐ Drill 3/32" pilot holes at the marked locations where there is a wall stud.
- ☐ Drill holes at the other marked locations for anchors and then insert anchors (not provided).
- ☐ Secure the hanger with three screws (provided).

5.

3. Install the Cabinet

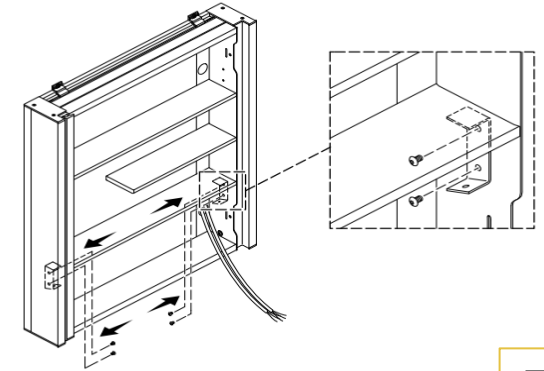


NOTE: Cabinet orientation with door swing to the right is shown.

- ☐ Verify the door swings in the direction that was determined in the "Roughing-In" section. If not, rotate the cabinet 180 degrees.
- ☐ Lift the cabinet onto the hanger. Make sure that the cabinet hooks and engages the hanger.
- ☐ Feed the wires through the hole in the back of the cabinet.
- ☐ Center the cabinet on the wall as desired.
- ☐ Position each retaining clip 2" (51 mm) from the sides of the cabinet on both the top and bottom of the cabinet.
- ☐ Using a 3/32" drill bit, drill pilot holes into the wall.
- ☐ If anchors are needed, remove the cabinet and install anchors into the wall at the pilot hole locations.
- ☐ Secure the retaining clips with the 1-1/2" screws (provided).

6.

4. Install the Junction Box Brackets

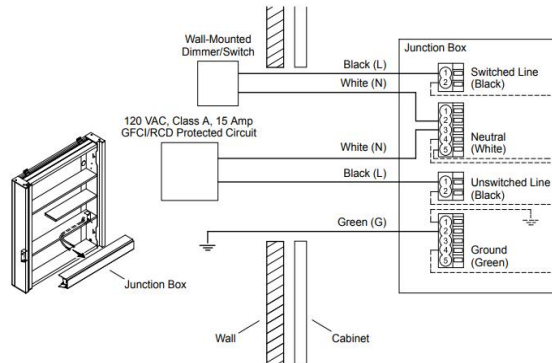


NOTE: Cabinet orientation with door swing to the right is shown.

- ☐ Align the brackets with the side panel holes as shown.
- ☐ Secure each bracket with two screws (provided). Avoid pinching the electrical wires while securing the brackets.

7.

5. Connect the Electrical Wires



WARNING: Risk of electric shock. A qualified electrician should make all electrical connections.

WARNING: Risk of electric shock. Disconnect the power before performing the following procedures.

NOTICE: A qualified electrician must install the wall-mounted dimmer or light switch and 120 VAC, 15 Amp, Class A GFCI* protected circuit.

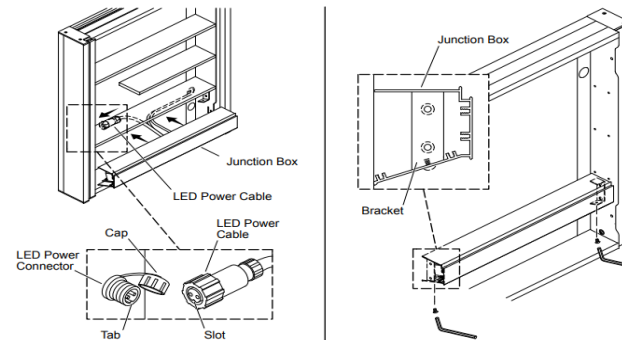
NOTE: Cabinet orientation with door swing to the right is shown.

- ☐ Connect the electrical wires to the junction box following the wiring diagram.

*Outside North America, this may be known as a Residual Current Device (RCD).

8.

6. Install the Junction Box



WARNING: Risk of electric shock. Disconnect the power before performing the following procedures.

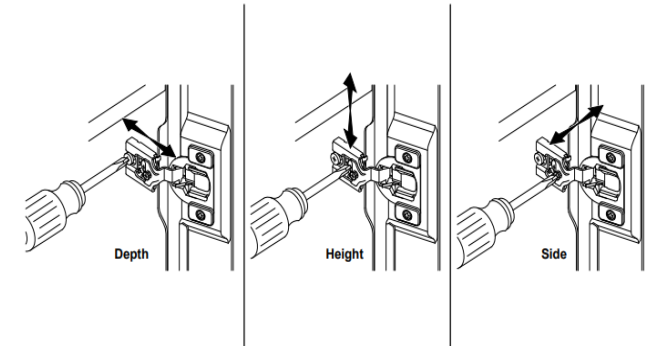
CAUTION: Risk of product damage. Do not force the plug on the end of the LED power cable into the LED power connector inside the cabinet. Align the slot on the LED power cable with the alignment tab on the LED power connector.

NOTE: Cabinet orientation with door swing to the right is shown.

- ☐ Unthread and remove the protective cap from the lower LED power connector located inside the cabinet where the junction box will be installed.
- ☐ Plug the LED power cable into the LED power connector.
- ☐ Position the junction box into the cabinet. Make sure that the top of the junction box clips over each bracket.
- ☐ Secure the junction box with the two screws (provided).

9.

7. Adjust the Door (If Needed)



- ☐ Adjust the hinges as needed for proper door functionality and alignment.
- ☐ Refer to the illustration and note the screwdriver location for the desired adjustment.

10.

PRICES



KOHLER®

Maxstow®

22" x 40" lighted medicine cabinet
K-81148-SLE-DA1

\$584.10
\$778.80 [List](#)

As low as **\$53/mo** with [affirm](#). [Check your purchasing power](#)

Color/Finish Dark Anodized Aluminum



Width ⓘ 22"

17"

22"

KOHLER®

Aesthetics



Summary:

This lighted medicine cabinet has a color rendering index of 90. What this means is the lighting delivers such a crisp neutral light that helps you see the truest light when seeing yourself while grooming, applying makeup or skin care. The side-integrated LED lighting has a brightness which at 1900 lumens which helps give a consistent lighting without hot spots or dark spots. This is about 3000 K which delivers overall bathroom aesthetics and lighting for tasks as well. The LED bulbs come with the unit and have a life of 50,000 hours. It can be used with dimmers as well, but they are not included. The material is made from rust-proof aluminum and easy to wipe when cleaning. It is an easy surface mount installation that hugs the wall and for a sleek look.

Kohler offers an installation service as well, but it cost extra for the labor. The installation instructions are straight forward in many languages for the subcontractor to use when installing. If there are any issues while installing the subcontractor can call Kohler's toll-free number to get help from their service department immediately and ask any questions that might arise. This is a very helpful feature when installing. The installation instructions are visual and in written form. They offer a one-year warranty in case you need a component repaired.

I feel like the integrated LED lights diffuse transmission and give off light in all directions of the space without glare or hot spots. The lit medicine cabinets are hung vertically in a unified line with each other. When hung vertically they make the space seem larger than it really is.

Part 1: Chapter 7 Questions and Answers

1. Identify the materials that cause (1) direct transmission, (2) diffused transmission, and (3) mixed transmission.

(1) Clear glass is a material that causes direct transmission because most of the light passes through it. (2) Some white plastics cause light to scatter in many directions and can cause glare. (3) Etched and sandblasted glass causes most of the light to pass through a semi-scattered manner.

2. List some of the green and HCD attributes that are important for luminaires.

Managing glare for visual comfort, tunable lighting for circadian system using LED luminaires that are designed for the sleep/wake cycle, connected and smart lighting, purifying the air by protecting against viruses, some have surfaces that are finished with self-cleaning coatings, some reduce noise focusing on acoustical comfort by using non-woven textiles with sound absorption characteristics.

3. Describe the light distribution in these luminaires: (1) indirect, (2) semi-indirect, and (3) diffused.

(1) Indirect luminaires distribute 90% of the light toward the ceiling. (2) Semi-indirect luminaires distribute most of the illumination upward and some downward. (3) Diffused luminaires distribute illumination in all directions.

4. Identify the advantages and disadvantages of recessed and surface-mounted luminaires.

One advantage of recessed luminaires is that they can direct light to a variety of locations while maintaining a clean ceiling line. This can make the space appear larger than it really is. They can provide task lighting for an area that has a decorative luminaire and can be easily hidden to create surprise. One disadvantage of recessed luminaires includes the clearance space required for installations. The fixture needs enough space between the housing unit and the building's insulation. They need to be planned early in construction due to fire hazards. Some are major sources of air leaks and this wastes energy. They must be placed in the proper location, or the direct light will cause glare and unflattering shadows on people. One advantage of surface-mounted luminaires is that they are decorative and illuminate. You can address many lighting requirements in a space because they can directly diffuse light. They are easier to install than recessed luminaires. The designer does not have to consider clearances for insulation or any mechanical and plumbing restrictions. Some disadvantages are based on the location. Relamping at the ceiling level can be difficult and when removing it can cause damage to finishes and materials. Some can cast a light and shadow pattern on a wall or ceiling. You should reflect the theme of the design concept and its scale.

(Continued) Part 1:Chapter 7 Questions and Answers

5. What are some of the factors that should be considered when identifying the ideal location for a suspended luminaire?

Suspended luminaires that emit indirect light should be mounted at least 18 inches from the ceiling to avoid “hot spots” and glare. Fixtures in a circular area should be at least 80 inches from the floor. The distance from the dining room table to the bottom of the luminaire should be 30 inches. When they are mounted too high, they cause glare for people sitting at the table. Large fixtures should be mounted higher than small ones. The location is important always considering how the luminaire affects people while sitting and standing in a room. It should not interfere with the focal point in a room such as artwork or a window view. It is important to look at the size, color, material, and openness. Multiple suspended luminaires should always be suspended in straight lines and the fixtures are hung at the same distance from the ceiling to have a unified appearance in the space.

6. Describe the differences between cove, valance, and soffit lighting.

Cove lighting is mounted on a wall, with the light directed up toward the ceiling. Valance lighting is mounted above the window, with the light directed up and down. Soffit lighting is a built-in wall element close or next to the ceiling and extends 12 to 18 inches from the wall. Light is usually directed down toward a task.

7. What are some of the installation and maintenance considerations when selecting luminaires?

Some of the installation factors to consider are electrical, mechanical, plumbing, and structural components of the building. Spaces must be surveyed to determine access for installation. It includes reviewing local building and electrical codes. Installation measurements must include adequate space for various devices, such as ballasts, transformers, outlet boxes, and structural support in ceilings and walls. The horizontal and vertical impact on the space must be considered when installing a luminaire. Maintenance and the cost of labor are important considerations when choosing luminaires. If they are dusty and dirty it affects the quality of the light in a space. They should be mounted in a location that is easily accessed. For example, any luminaire that has 20ft. ceilings should have a shield that reduces dust and dirt. If luminaires have several components, then they require frequent cleanings that are time-consuming and costly. Some finishes and materials such as aluminum are challenging to maintain because it can show scratches and fingerprints. Designers must know the maintenance requirements and explain them to their clients in advance.

Sources:

www.kohler.com

www.kohlercompany.com

www.kohlerarchives.com

<https://resources.kohler.com/corporate/kohler/pdf/Kohler-Full-Report-2023-v9-web.pdf>

www.wi101.wisc.edu "The Early History of the Kohler Company"

Written by Thomas Broman, November 2020.

Thomas C. Reeves, Distinguished Service: The Life of Wisconsin Governor Walter J. Kohler, Jr. (2006)

Vollrath: 'Das Alte Geschlecht' (unpubl. manuscript in Sheboygan County Historical Society.) [The author thanks Robert E. Kohler Jr. for a copy of this source.]

THANK YOU & THE END

Lori Wolper

ITMD 116-350

Fundamentals of Lighting

Assignment 3: Manufacturers and Equipment Report Instruction Date: 9/13/2024