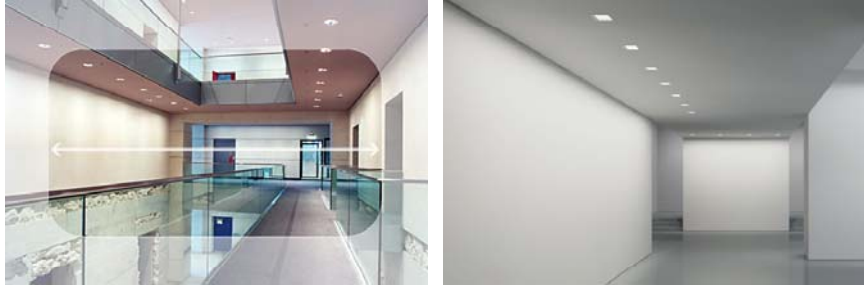


## Lighting a Vertical Surface

### Lighting a Vertical Surface

- Lighting vertical surfaces, such as walls, emphasizes the spatial perception of a room



[http://www.erco.com/products/download/others/downloaddaten-3992/en/dl/tut-1.php?aktion= startseite&sprache=en&dir=29\\_tutorials/04\\_vertical\\_illumina](http://www.erco.com/products/download/others/downloaddaten-3992/en/dl/tut-1.php?aktion= startseite&sprache=en&dir=29_tutorials/04_vertical_illumina)

- Types of Lighting Solutions:
  - Wall Wash Lighting
  - Wall Grazing Lighting
  - Art Accent Lighting

1

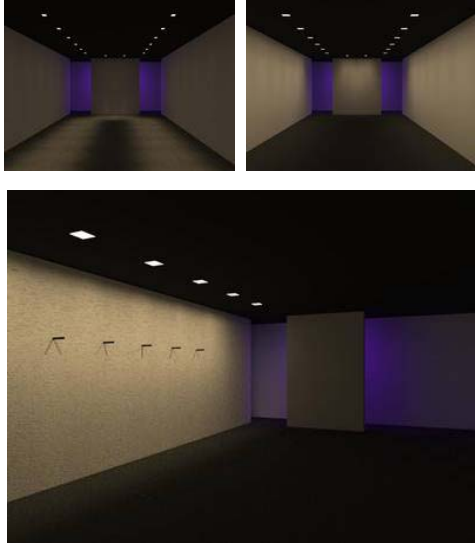
### Lighting a Vertical Surface: Wall Washing



2

# Lighting a Vertical Surface

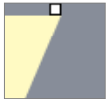
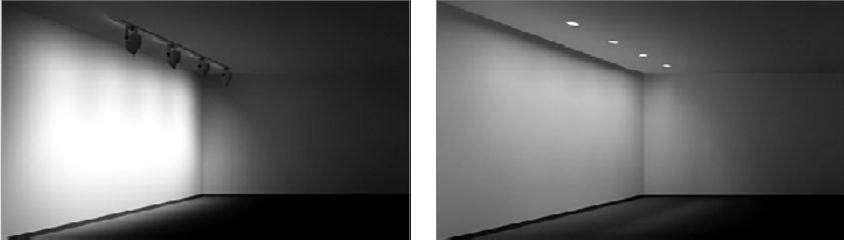
## Lighting a Vertical Surface: Wall Washing



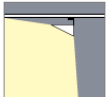
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## Lighting a Vertical Surface: Wall Washing

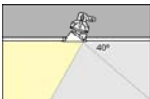
**Mounting Choices:**



- Surface to the ceiling



- Surface to Track



- Recessed

4

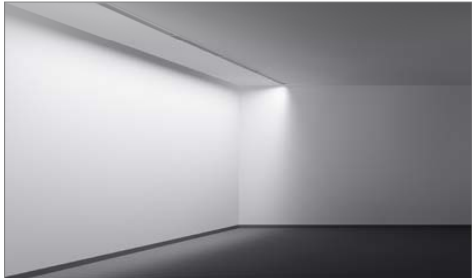
# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Washing

Layout Choices:

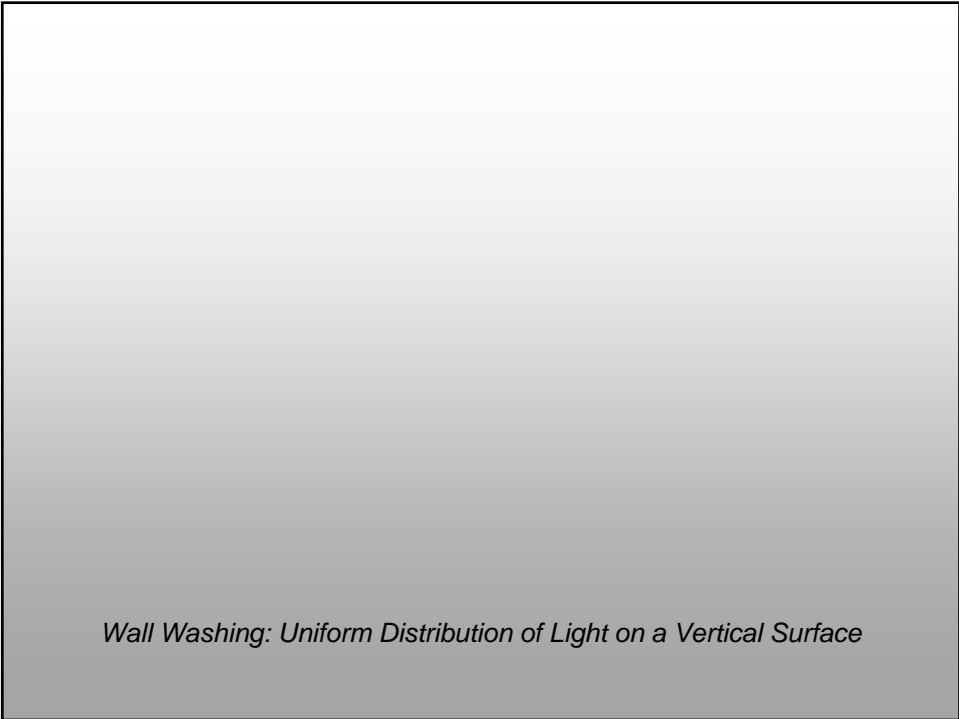


- Individuals



- Continuous

5



*Wall Washing: Uniform Distribution of Light on a Vertical Surface*

# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Washers

**- Recessed**

Labels: Vent Slot, Lampholder, Torsion Spring (2), Branch Circuit Junction Box, Access Cover (2), Rotation Ring, Kicker Reflector, Alzak Cone, Rotation Lock, Aperture Frame, Thermal Protector.

**- Surface or Track**

Labels: Branch Circuit Junction Box, Beam Splitter, Lamp Holder, Diffusing Cone, Hull Support (2), Thermal Protector, Beam Reflector, Glass Window, mtg. (by Owner), Aperture Frame.

7

## Lighting a Vertical Surface: Wall Washers

Section      Elevation

The effect should be uniform from Top to Bottom

1. **Rule of Thumb: Mounting Distance = Spacing Distance**
2. **Rule of Thumb: Mounting Distance = 1/3 the Ceiling height**
  1. Mount the wall wash fixtures 2 to 3 feet from the wall on ceilings up to 9 feet high.
  2. Mount the wall wash fixtures 3 to 4 feet from the wall on ceilings up to 9 feet and 11 feet high.
3. **Follow Manufactures Recommendations!**
4. Optional corner and double wall (corridor) housing available

8

# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Washers

**CANDLEPOWER DISTRIBUTION**

9

### DARKLITE WASHLITE MR/4

*recessed low voltage wallwasher*

Spec Sheet  
LOW VOLTAGE  
3-341

---

**FEATURES**

Darklite Washlite MR/4 is a 4" aperture lensed wallwasher designed for use with 120 volt MR16 flood lamps (75-watt maximum, see note below). The integral electronic transformer delivers 11.8 volts, to lengthen lamp life. Recess depth is only 6 1/2".

The optical assembly carries out a long hood, an internal reflector, a 45° x 70° glass spread lens and an external reflector. Precise optical design provides uniform illumination on vertical surfaces up to the ceiling line and minimizes aperture brightness. The optical assembly provides 300° horizontal operation and may be removed from the fixture housing as a unit for easy relamping.

The 4" aperture matches our 4" low voltage, compact fluorescent, A, PAR and MD lamped downlights, wallwashers and accent lights.

With a 25-watt lamp, Darklite Washlite MR/4 accepts use of a number of Optical Accessories including UV filter and recessed side files. With a 50-watt lamp, an additional five Optical Accessories are available.

Reflectors are available in three clear natural aluminum finishes — anodized clear (2), highly diffuse (6) or fully diffuse (10) — as well as chrome-plated gold or black Alumin®. Other reflector finishes are available on special order.

Darklite Washlite MR/4 includes a pair of mounting bars (N" x 27" x C channel). Specialty bars for wood joist and vapor insulation are also available.

**APPLICATIONS**

Fixture is recommended for wallwashing in offices, restaurants, bars, taverns, elevators, residences and hotels.

Fixture is **not** intended for wallwashing in museums, galleries, art galleries, auditoriums, residences and hotels.

For use in low voltage ceiling and applications for use in 80° branch circuit pull-through wiring, recessed at the reflector for access to the transformer and junction box.

• To minimize voltage drop problems we recommend the use of lamps by GE, Sylvania, Philips or Osram. In addition, in areas of high ambient temperature the lamp should be limited to 50 watts.

• Repeater installation, when it combined by a dimmer, use dimming equipment compatible with the design. Alternatives or repositioning of the fixture transformer.

### DARKLITE WASHLITE MR/4

EDISON PRICE

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**MODIFICATIONS AVAILABLE**

Contact factory with quantity for pricing, unless you require shop drawing approval.

**OP-** 30-watt fixture suitable for **Chicago Planes**, add CPH as prefix to Product Code.

**EXP-** 30-watt lampless style, **small form factor**, add EXP as prefix to Product Code.

**HR-** fixture prepared for **high hanging**, add HR to Product Code.

**HDOS-** fixture suitable for **high humidity** environments, add HDOS to Product Code.

**HMAR-** reflector suitable for **marine** environments, add HMAR to Product Code.

---

**PHOTOMETRIC REPORT**

**1111** Luminance Testing Laboratory Report No. 08113. Original test report furnished upon request.

Luminance **recessed** inconspicuous with internal wallwash reflector and 45° x 70° spread lens.

---

**WALLWASH INFORMATION**

50-watt MR16 halogen (14.0 ENEC, 880 Lumens [approximate])

Distance From Center of Beam	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.
Feet	Feet	Feet	Feet	Feet
0	13	10	8	6
2	13	10	8	6
4	11	11	8	6
6	9	10	7	7
8	7	7	6	6
10	6	6	5	5
12	6	6	4	4

All vertical footcandle and lumens values are in combination from ceiling and floor reflectance. Comparison performed with a wall of one wallwasher.

---

**WALLWASH INFORMATION**

25-watt MR16 halogen (7.0 ENEC, 440 Lumens [approximate])

Distance From Center of Beam	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.	2 1/2" From Wall, 2 1/2" H.C.
Feet	Feet	Feet	Feet	Feet
0	30	16	12	10
2	30	16	14	13
4	20	16	14	13
6	17	17	13	13
8	13	14	12	12
10	12	11	10	9
12	10	9	8	7
14	8	8	7	6
16	8	8	6	6

All vertical footcandle and lumens values are in combination from ceiling and floor reflectance. Comparison performed with a wall of one wallwasher.

**PRODUCT CODE**

For complete product code, see front and select one from items not following line.

Basic Unit	Color	Finish	Mount
Reflector Color and Detail	Standard	Clear	Recessed
Sanitary/Industrial Clear	CCO	Clear	Recessed
Single Diffuse Clear	COO	Clear	Recessed
Full Diffuse Clear	COO	Clear	Recessed
Chrome-plated Gold	COO	Gold	Recessed
Black Alumin®	COO	Black	Recessed

**OPTIONS** (attach to codes in the basic unit)

Integral 120/12 volt magnetic transformer by Q-Tec® with auto-shock and toggle for dimmed vs. switched use. Factory set to switching. ---Q7100

Integral 277/12 volt magnetic transformer by Q-Tec. Same transformer as factory set to switching. ---Q7200

Integral 277/12 volt magnetic transformer by Q-Tec. Same transformer as factory set to switching. ---Q7300

120 volt service from remote transformer. Dry wiring. ---N3748

**OPTICAL ACCESSORIES** (attach to codes in the basic unit)

UV filter ---W1/2 375

Color filter ---W1/2 375

Single file ---W1/2 375

Double file ---W1/2 375

Push-through wiring ---W1/2 375

Recessed at the reflector for access to the transformer and junction box. ---W1/2 375

25% light reduction screen (50-watt max. lamp). ---SCK12/2 375

50% light reduction screen (75-watt max. lamp). ---SCK12/2 375

**ACCESSORIES** (attach to codes in the basic unit)

Plaster plug allows use of 4" x 2" O.D. 3/8" (high 1/8") reflector in sheetrock ceiling. 5 1/2" dia hole required. ---1894C/4

# Lighting a Vertical Surface

## MAXIMA 30 W-OBM

*surface mounted wallwasher*

MAX LAMP  
4-3-38

---

**FEATURES**

Maxima 30 W-OBM is an adjustable wallwasher designed for use with RM-30 Road Range (20-watt equivalent) fixtures designed for mounting on a 4" rectangular surface (see fix sheet).

The optical assembly for the Maxima 30 W-OBM consists of an internal specular reflector and a 40° x 70° glass spread lens. This assembly is held in place for precise aiming and easily removed as is and for cleaning.

A concealed axial provides 285° horizontal rotation and vertical adjustment from 0° to 90°. The axial is permanently tensioned, allowing Maxima fixtures to remain fixed at any setting angle.

Maxima 30 W-OBM fixtures accept one or two of a number of Optical Accessories including a UV filter and color film.

Maxima fixtures have stainless aluminum housing for lightweight durability and are aluminum type for heat dissipation. Standard finish is matte white, also available in black and Industrial Silver matte paint finishes.

**APPLICATIONS**

Features suitable for wallwashing vertical surfaces in museums, galleries, showrooms, residences, offices and stores.

Features are suitable for 125-watt electrical service and 40° lens for mounting on a standard 4" rectangular surface (see fix sheet).

## MAXIMA 30 W-OBM

EDISON PRICE

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**PHOTOMETRIC REPORT**

Report No. 23288. Original independent testing laboratories, Inc. (I) test report furnished upon request.

Luminaire: surface mounted adjustable wallwasher, 40° x 70° spread lens with specular reflector lamp: 75-watt PAR38S Flood, 954 lumens.

**WALLWASH INFORMATION**

Distance 2' from Lamp	2' from Wall, 2' H, 0' D		2' from Wall, 2' H, 2' D		4' from Wall, 4' H, 0' D	
	Beam Feet	Beam Feet	Beam Feet	Beam Feet	Beam Feet	Beam Feet
1	18	12	11	8	9	9
2	29	20	14	10	15	15
3	47	40	21	20	18	18
4	64	61	28	27	21	18
5	81	81	35	35	28	21
6	99	99	42	42	35	28
7	116	116	49	49	42	35
8	134	134	56	56	49	42
9	151	151	63	63	56	49
10	169	169	70	70	63	56

**CANDLEPOWER DISTRIBUTION**

**PRODUCT CODE**

Complete Product Code: MAX 30 W-OBM

**OPTIONS**

Send to selling to the product code:

- rotary type on/off switch on fixture top: SW
- matte black housing finish (on wall wash control fixture): BK
- Industrial Silver housing finish (on wall wash control fixture): IS
- custom color paint housing finish (on wall wash control fixture): COH

**OPTICAL ACCESSORIES**

Send to nearest fix store:

- All are 1/2" (38mm) dia. Lens and film are glass unless otherwise stated.
- 40° x 70° spread lens (included with fixture): EN50, 75, 4070
- UV filter: UNF, 2, 75
- color film:
- Daylight Blue: DB, 2, 75
- Surprise Pink: PS, 2, 75
- red: RE, 2, 75
- blue: BL, 2, 75
- green: GR, 2, 75
- red: RD, 2, 75
- 27% light reduction screen: SC23, 2, 75
- 30% light reduction screen: SC30, 2, 75

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# Lighting a Vertical Surface: Wall Washing

## VersaLux<sup>®</sup> Series W4

ARCHITECTURAL LIGHTING SERIES

**Linear Wallwash, Recessed**

Job Name: \_\_\_\_\_ Fixture Type: \_\_\_\_\_

---

**Technical View of Recessed Fixture**

**WW4-T**

Material	Finish	Length	Style	Mounting
<input type="checkbox"/> 14	<input type="checkbox"/> 24HD	<input type="checkbox"/> 6	<input type="checkbox"/> 24"	<input type="checkbox"/> P (recess)
<input type="checkbox"/> 21	<input type="checkbox"/> 29HD	<input type="checkbox"/> 8	<input type="checkbox"/> 36"	<input type="checkbox"/> P (flush)
<input type="checkbox"/> 28	<input type="checkbox"/> 36HD	<input type="checkbox"/> 12	<input type="checkbox"/> 48"	<input type="checkbox"/> P (flush)
		<input type="checkbox"/> 18	<input type="checkbox"/> 72"	<input type="checkbox"/> P (flush)
		<input type="checkbox"/> 24	<input type="checkbox"/> 96"	<input type="checkbox"/> P (flush)

\*P: Recessed for use with 0.75" and 1.0" recess depth. For use with 0.75" and 1.0" recess depth. For use with 0.75" and 1.0" recess depth. For use with 0.75" and 1.0" recess depth.

**Description:** Linear recessed recessed wallwash. Single 11-watt or cross-section.

**Features:** Custom configurations with fully distributed centers. Below ceiling access for ballast and wiring.

**Electrical:** Power Consumption: For specification. Ambient temperature 105°F maximum. Integral electronic ballast, thermally protected. Through branch wiring capable.

**Mounting:** General mounting brackets included. Contact factory for special ceiling conditions.

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**starline** Starline Lighting, Inc. 7 Dennis Drive, Wood Ridge, NJ 07075 P: 201-438-9542 F: 201-438-9541 www.starlighting.com

Ceiling Ref.

4.4688"

3.9531"

1.9531"

2.0620"

3.2031"

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© Copyright Edison Price Lighting 2010. \*Prices are approximate and subject to change.

# Lighting a Vertical Surface

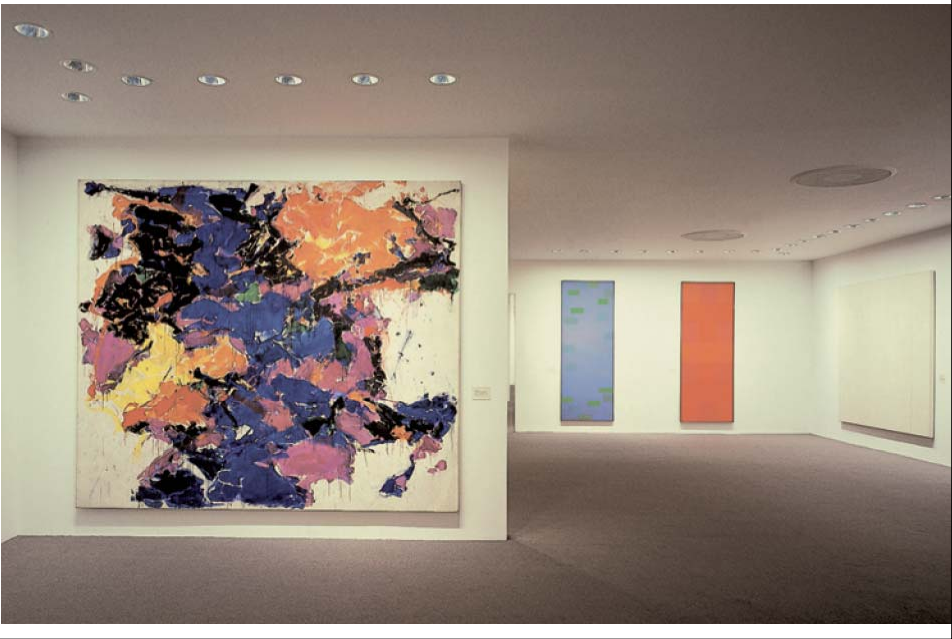
## Lighting a Vertical Surface: Wall Washing



The first photograph shows a conference room with a wooden table and chairs, where a picture on the wall is illuminated. The second photograph shows a long hallway with a tiled floor and a series of small framed pictures on the wall, each lit individually. The third photograph shows a modern meeting room with a large stone wall and a conference table, with the wall being lit from above. The fourth photograph shows a minimalist room with a white wall and a table, where the wall is lit from above.

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## Lighting a Vertical Surface: Wall Washing




The photograph shows an art gallery with a carpeted floor and recessed ceiling lights. On the left, a large abstract painting is illuminated. In the background, two vertical panels, one blue and one orange, are lit. To the right, a large white panel is also lit. The lighting is designed to highlight the vertical surfaces of the artworks.



# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Washing



The first photograph shows a large, textured brick wall illuminated by recessed ceiling lights, with a small display case and a dark sofa in the foreground. The second photograph shows a long, narrow hallway with a white wall, where recessed ceiling lights create a uniform glow across the wall surface. The third photograph shows a modern office or meeting room with a white wall, a wooden table, and black chairs, with recessed ceiling lights providing even illumination.

15

## Lighting a Vertical Surface: Wall Washing



The first photograph shows a museum or gallery space with a brick wall and a large, colorful, curved display case in the foreground. Recessed ceiling lights illuminate the wall and the display case. The second photograph shows a museum or gallery space with a white wall and a large, white, curved display case. Recessed ceiling lights illuminate the wall and the display case.

16



# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Washing



The first photograph shows a reception desk with a light-colored wood finish. A woman is standing behind the desk. The wall behind her is illuminated by a recessed linear light fixture, creating a soft, even glow. A large, circular, embossed logo is visible on the wall. The second photograph shows a curved wooden reception desk in a hallway. The wall behind it is illuminated by a recessed linear light fixture, creating a soft, even glow. The text 'UNITED STATES ARMY CORPS OF ENGINEERS' is visible on the wall. The third photograph shows a hallway with a red wall. The wall is illuminated by a recessed linear light fixture, creating a soft, even glow. The text 'Building Strong' and 'Seattle District' is visible on the wall.

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*Wall Grazing: High Gradient of Light on a Vertical Surface*

# Lighting a Vertical Surface

### Lighting a Vertical Surface: Wall Grazing

The slide contains five images illustrating wall grazing lighting. On the left side, there are three images: the top one shows a room with a light strip on the wall; the middle one shows a room with a recessed ceiling light strip; the bottom one shows a long hallway with a light strip on the wall. On the right side, there are two images showing a room with spotlights on the wall, with the text "Bad Example" written in red on the floor of each image.

### Lighting a Vertical Surface: Wall Grazing

The slide contains three photographs illustrating wall grazing lighting on textured surfaces. The top left image shows a close-up of a rough, grey rock surface. The top right image shows a close-up of a textured, blue and yellow surface. The bottom center image shows a person climbing a rope on a textured, brown surface.

# Lighting a Vertical Surface


### Lighting a Vertical Surface: Wall Grazing



The first image shows a modern lounge area with a wall featuring a circular, bubble-like texture. The second image shows a wall with a wavy, undulating texture and a wooden cabinet. The third image shows a tall, stone-textured tower with a flame-like top, illuminated from below.

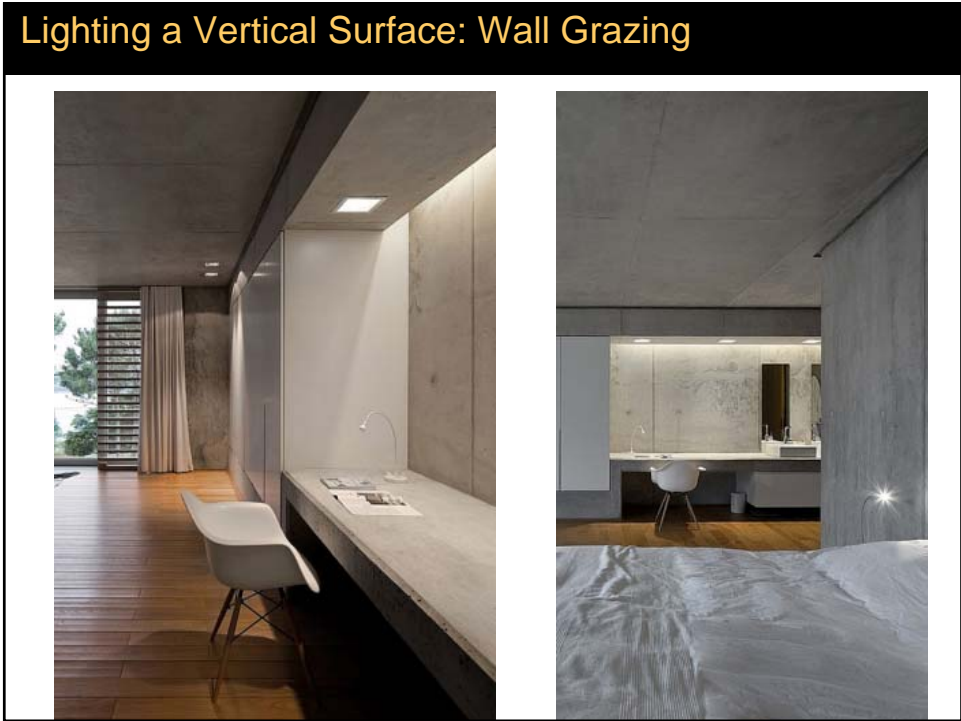
21

### Lighting a Vertical Surface: Wall Grazing




The image shows a bathroom interior. A bathtub is in the foreground. The wall behind it is covered in horizontal wood slats and has a recessed light strip above it. The text "ZUCCHETTI KOS" is visible on the wall. To the right, there is a blue table and a shower area with a showerhead and a handheld showerhead.

# Lighting a Vertical Surface



# Lighting a Vertical Surface

## Lighting a Vertical Surface: Wall Grazing



**WHAT IS WALL GRAZING**

wall grazing is the technique of projecting an even pattern of light at very steep angles down the full height of a wall, to illuminate the wall and to accentuate its texture.

**WHAT IS NOT WALL GRAZING**

fluorescent strips in coves lack the punch to graze walls fully, lighting the top of the wall far more than the base, and they are limited to fluorescent colors.

track fixtures in coves may use lamps with enough punch but they must be individually aimed, resulting in an inconsistent pattern down the wall, especially after relamping.

wallwashers, fixtures meant to light a wall from points some distance away, rather than graze, the effect may be a well-illuminated wall, but one whose texture is downplayed rather than accented.

25

## What Makes A Good Wall for Grazing

**TEXTURED**

Any wall surface with an interesting texture is a good candidate for wall grazing, including:

- stone, like matte marble, granite or travertine
- wood, especially with expressed graining
- fabric, either stretched or draped
- tile, particularly mosaics
- glass with an etched pattern
- plaster or stucco, but only when well executed



**SMOOTH**

Smooth wall surfaces, like polished stone, are often best illuminated by wall grazing because the technique minimizes annoying lamp reflections. In comparison, lighting a slick wall with ceiling-mounted wallwash fixtures results in a pattern of bright reflections visible from all angles below.



**WHAT MAKES A BAD WALL**

Any wall surface with an unpleasant texture is a bad candidate for wall grazing. A common example is a badly taped and spackled sheet rock wall; all of the wall's imperfections will be highlighted.

Any wall to which things will be mounted should be considered carefully before grazing. Two of the more annoying effects possible are pronounced shadows, as those from framed paintings, and blinding reflections, as those from a chrome-trimmed building directory.

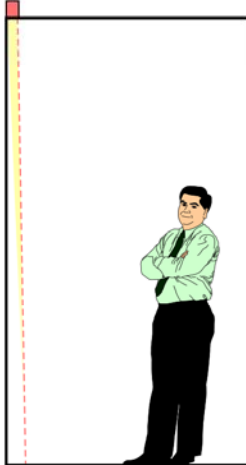


26


# Lighting a Vertical Surface

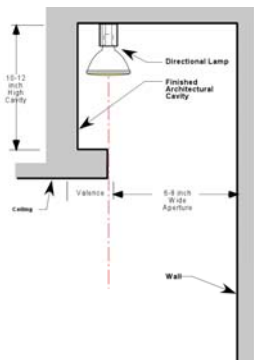
## Lighting a Vertical Surface: Wall Grazing

**Section**




**Elevation**

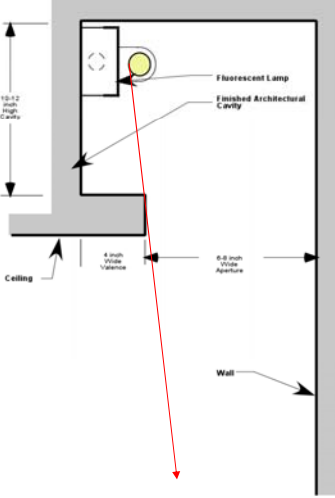




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## Lighting a Vertical Surface: Wall Grazing




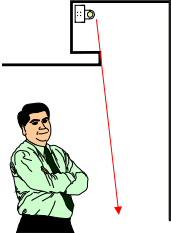



28


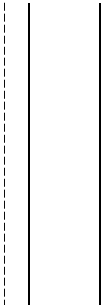


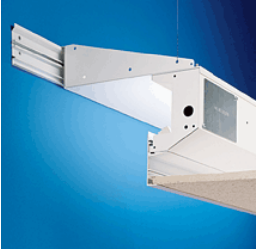
# Lighting a Vertical Surface

## Vertical Surface - Wall Gazing







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## Lighting a Vertical Surface: Wall Grazing



Wall Section - Option B



30



# Lighting a Vertical Surface

### Lighting a Vertical Surface: Wall Grazing



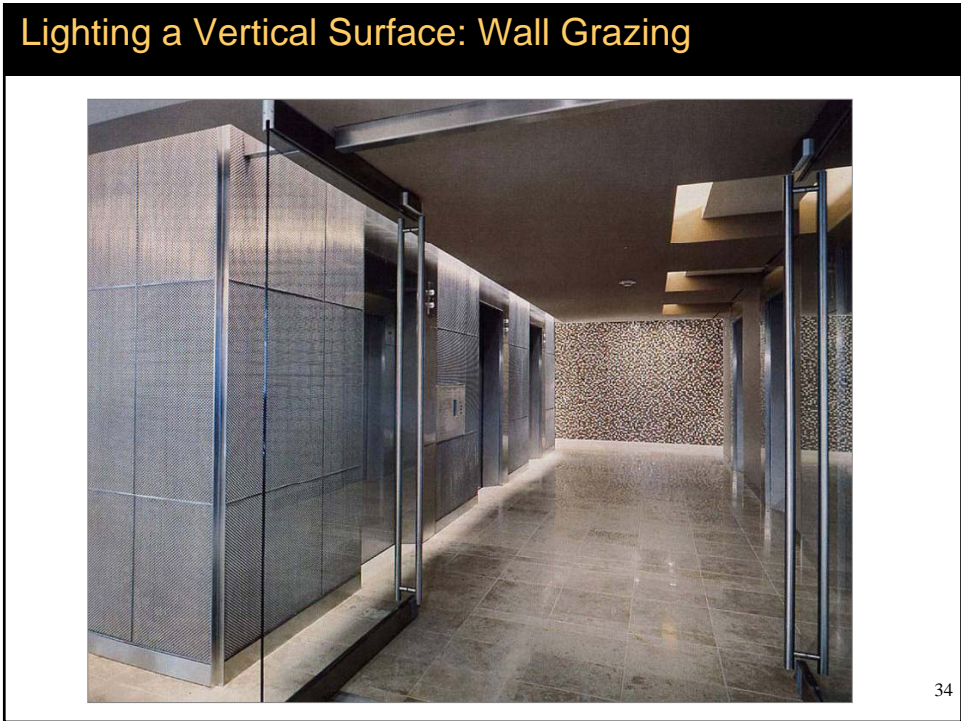
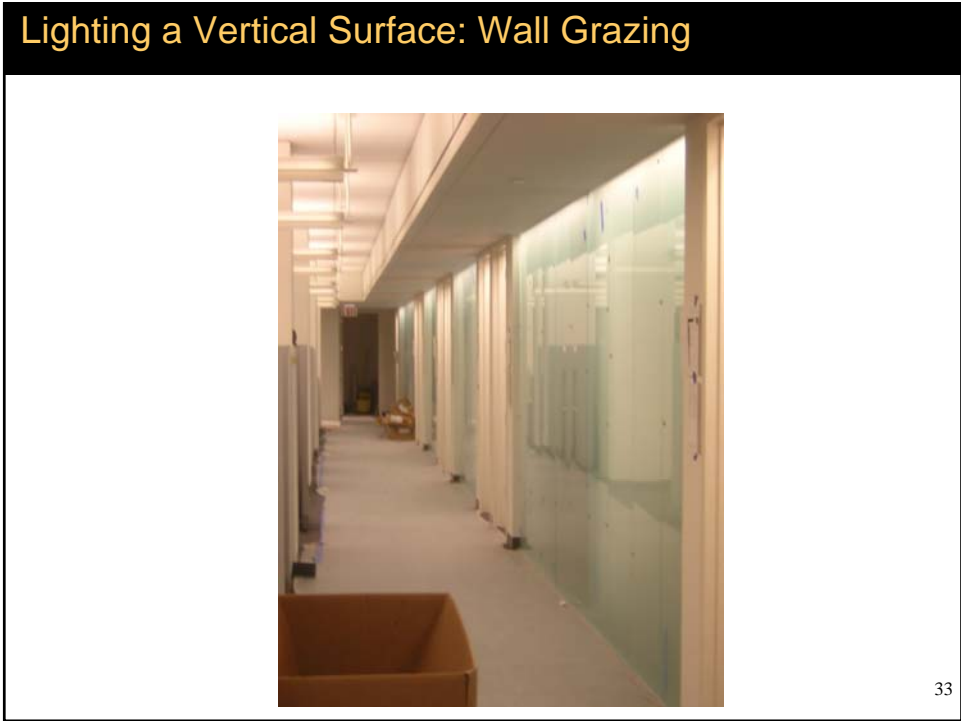
31

### Lighting a Vertical Surface: Wall Grazing

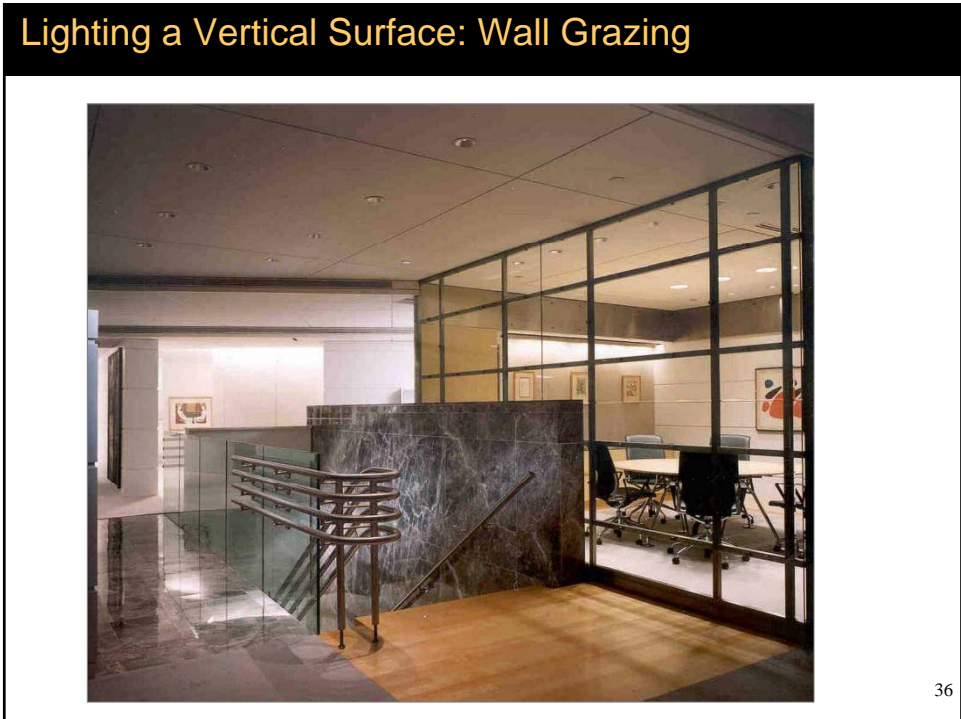


32

# Lighting a Vertical Surface

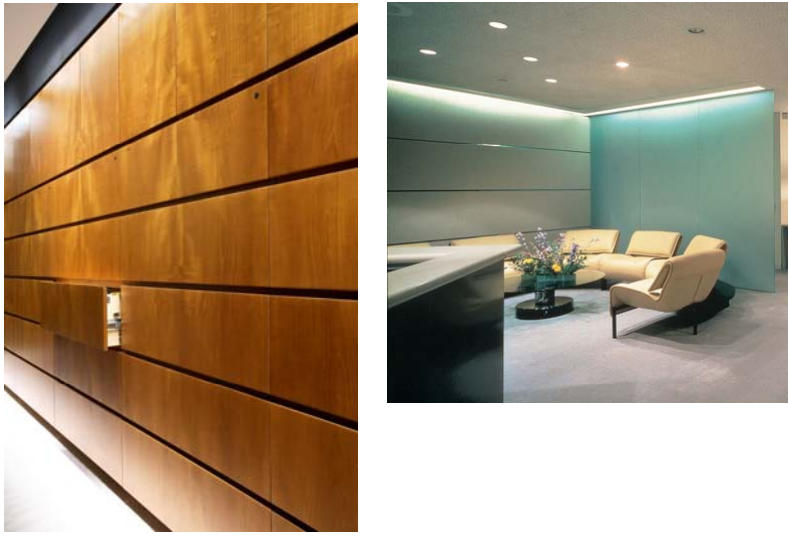


Lighting a Vertical Surface

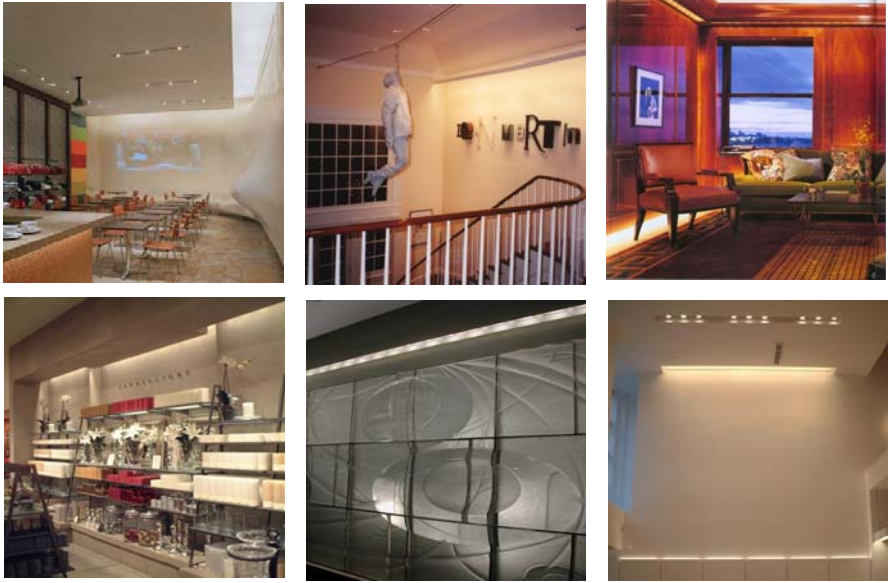


# Lighting a Vertical Surface

## Vertical Surface - Wall Gazing



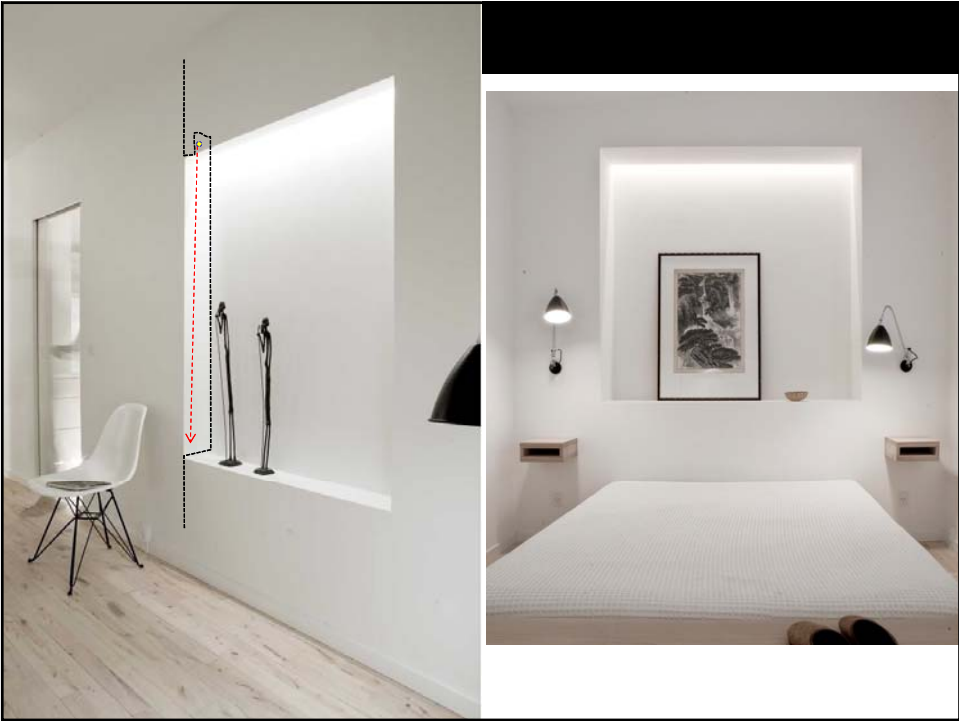
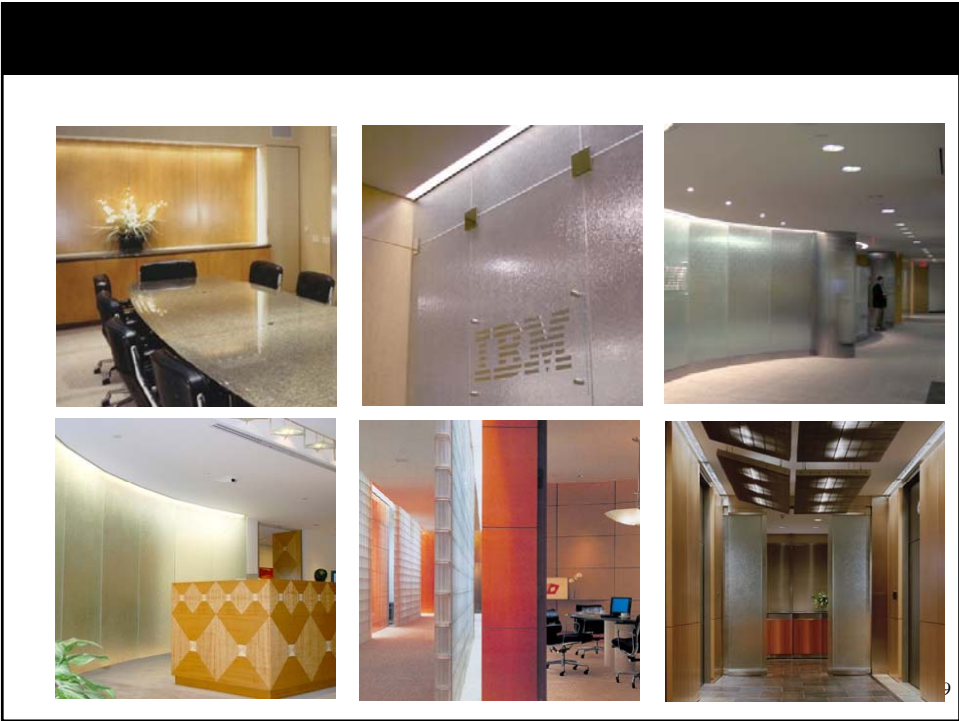
37



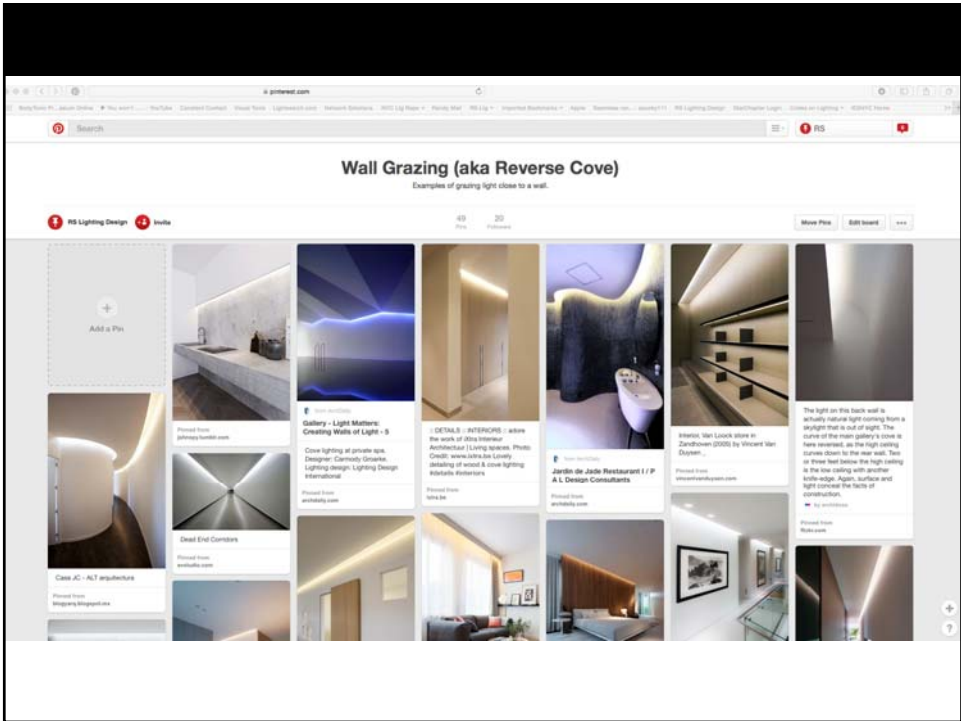
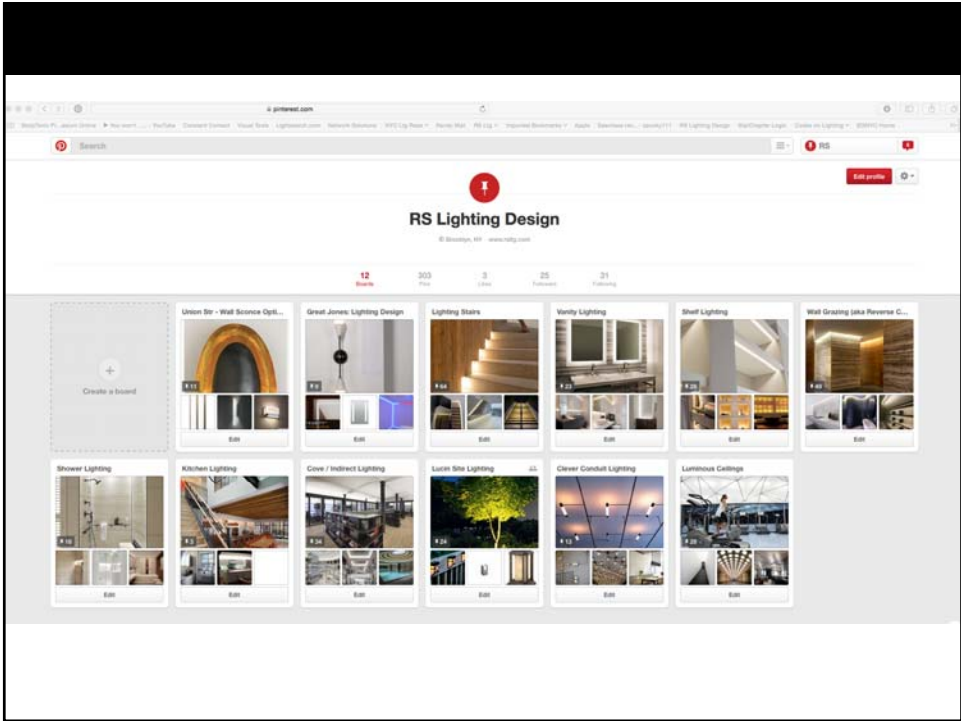
38



# Lighting a Vertical Surface






# Lighting a Vertical Surface





# Lighting a Vertical Surface


## Lighting a Vertical Surface: Wall Grazing

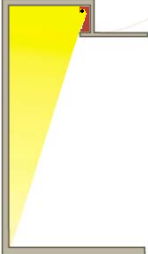



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Light washes and brightens the ceiling while making the room appear larger.



Light washes the wall to brighten the space and create a feeling of definition.




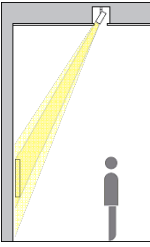
44




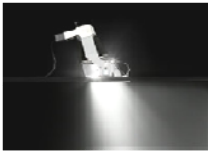
# Lighting a Vertical Surface

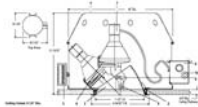
## Accent Lighting





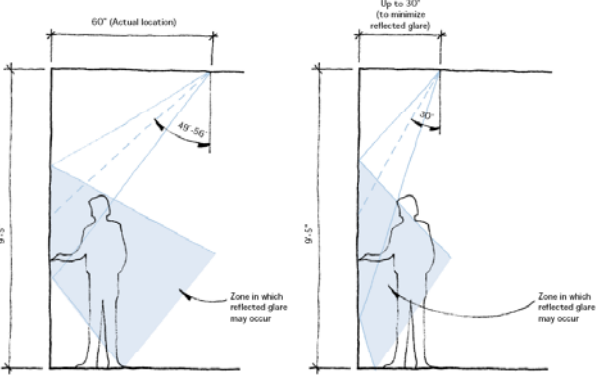






45

## Accent Lighting

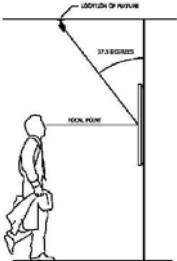


Reflected glare on a glossy whiteboard can occur when a luminaire is mounted at a distance greater than 30 inches from the board.

Reflected glare can be minimized by mounting the luminaire up to 30 inches from the board to form an angle of less than 30° from vertical.

**Generally Rule of Thumb**

- fixtures should be aimed at a 30 degree angle from the vertical to prevent light from shining in anyone's eyes and to avoid disturbing reflections on the surface of the object.




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# Lighting a Vertical Surface

Accent Lighting



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Accent Lighting



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# Lighting a Vertical Surface

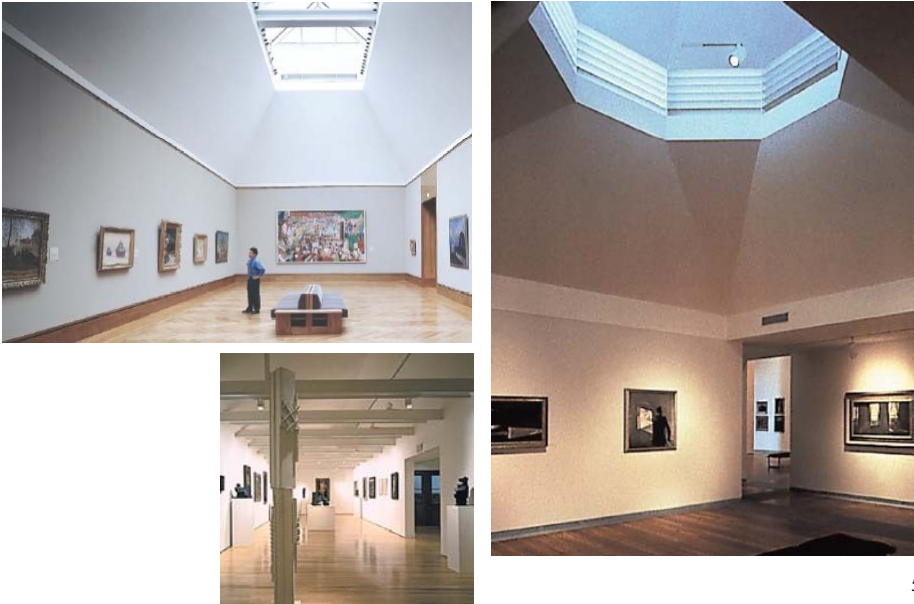
## Accent Lighting



The first photograph shows a gallery corner with a large, dark, textured wall-mounted sculpture. A spotlight from above illuminates the sculpture, casting a shadow on the wall. To the left, a painting is also lit. A globe sits on the floor in the foreground. The second photograph shows a gallery with a tall, thin, vertical sculpture on a wooden pedestal. A spotlight from above illuminates the sculpture. Several framed artworks are visible on the wall in the background, also lit by spotlights.

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## Accent Lighting



The top-left photograph shows a large gallery with a high ceiling and a skylight. A large painting is lit by a spotlight from above. A person stands near a pedestal in the center. The top-right photograph shows a gallery with a large, octagonal skylight. A spotlight from above illuminates a framed artwork on the wall. The bottom photograph shows a long gallery hallway with several framed artworks on the walls, each lit by a spotlight. A person is visible in the distance.

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# Lighting a Vertical Surface

*Accent Lighting – Framing Projector*

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