

What is a Light Fixture?



Light Fixtures: “A Lamp in a Box”

- Light fixtures are MORE than a decorative object.



What defines a Light Fixture?



*Keyless
Porcelain Socket*



*Keyed (pull chain)
Porcelain Socket*

Specifications:

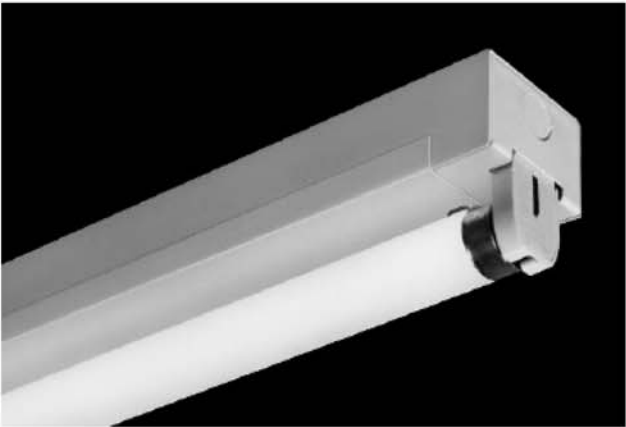
- Method of Mounting
- Method to make Electrical Connection
- Housing
 - Lamp
 - Lamp Socket
 - Decorative Lens or Diffuser
 - Shielding or Optics
 - Support Arms or Stem
 - Locking Mechanism
 - Way to access the lamp
 - Ballast or Transformer
 - Aperture Trim & Flange

Bare Lamps can be a Light Fixture?



Bare Lamps can be a Light Fixture?

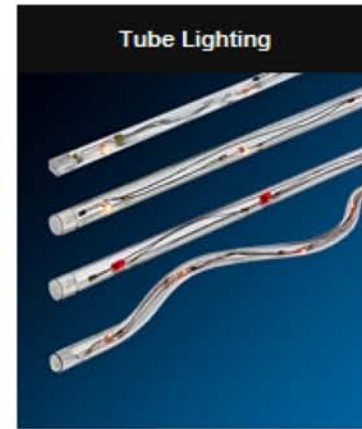
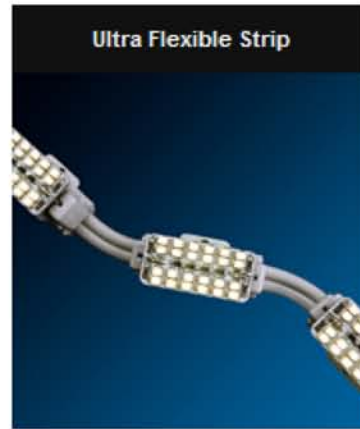
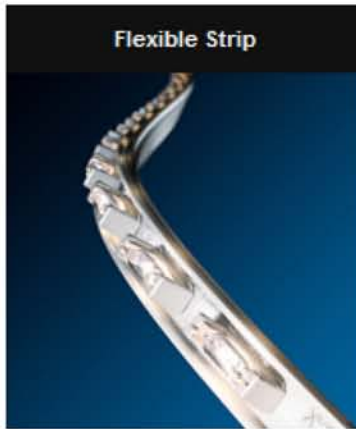
*Bare Lamp Channels
Socket Strips*



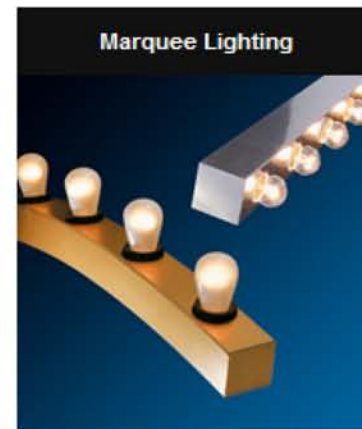
Bare Lamps can be a Light Fixture?



Bare Lamps can be a Light Fixture?



Techtrac / Tru-Lux - Cove Perimeter Lighting



Define Light Fixtures by their....

Mounting & Distribution & Application

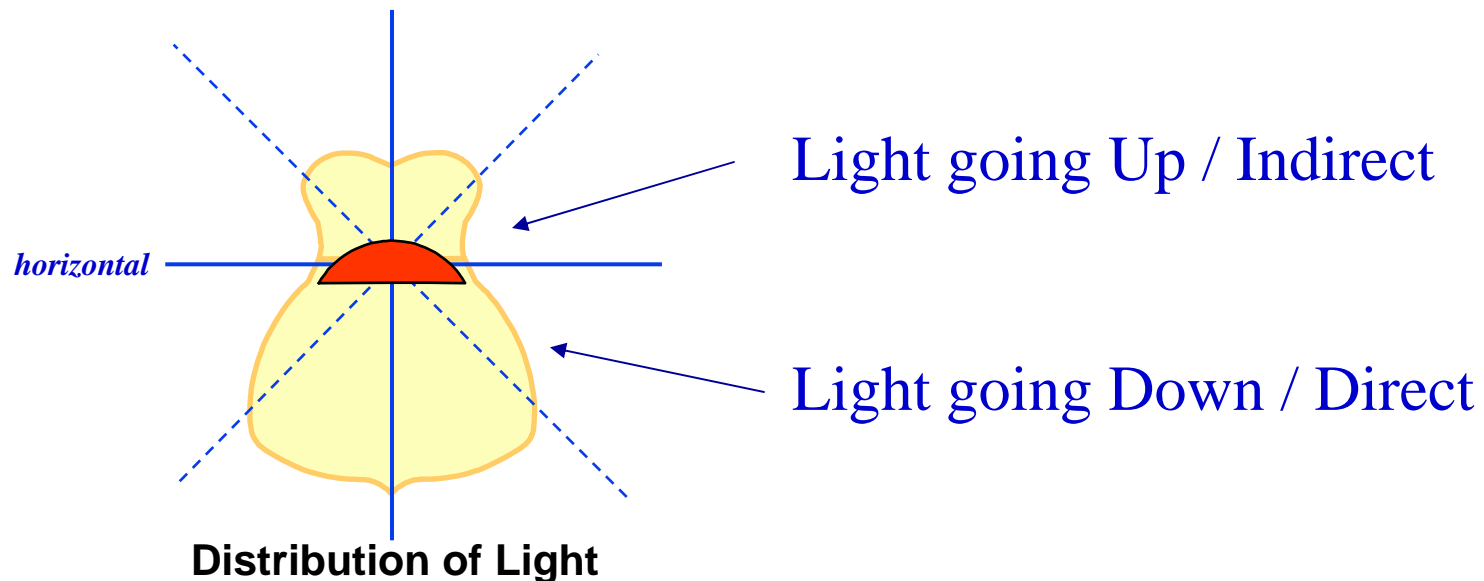
Recessed Direct Downlight
Recessed Indirect In-Grade Light

Surface General Diffuse Ceiling Light
Surface Indirect Wall Bracket
Surface Direct Task Light

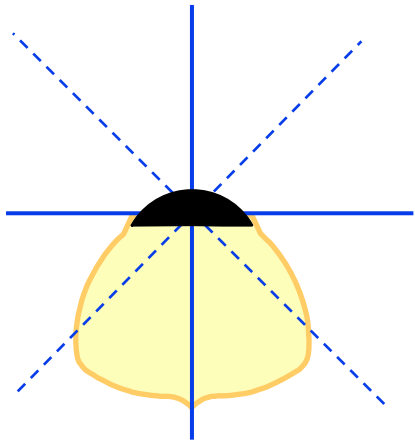
Pendant Indirect Office Light
Pendant Downlight
Pendant Troffer

We Define Light Fixtures by their... Distribution of Light

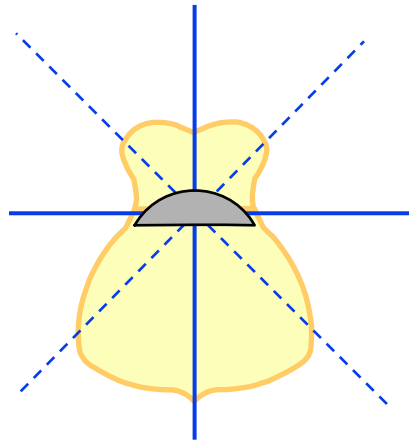
- Goal of a luminaire is to put light where the user needs it
- Convenient way to classify luminaires is by the *direction* of light emitted from the luminaire
- Commission Internationale de l'Eclairage (CIE) sets up these classifications



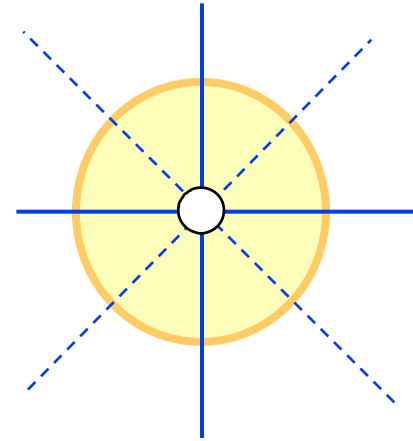
Distribution Types



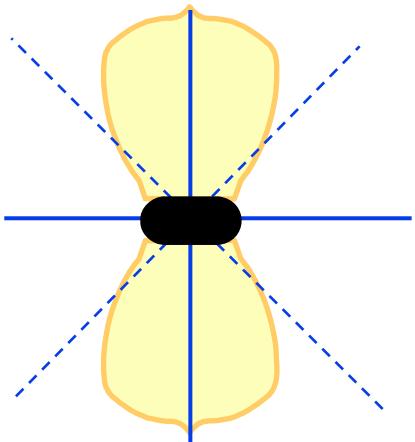
Direct



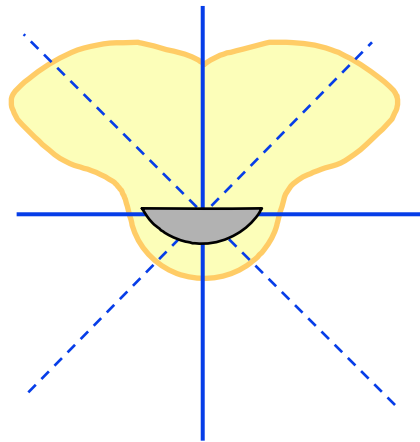
Semi-Direct



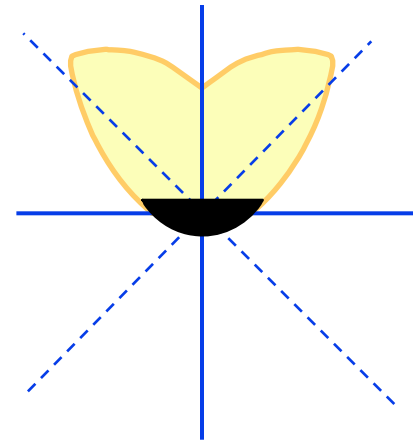
General Diffuse



Direct-Indirect



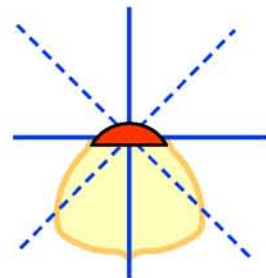
Semi-Indirect



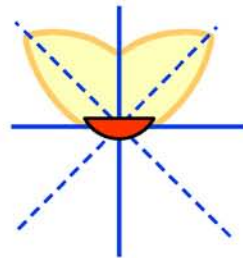
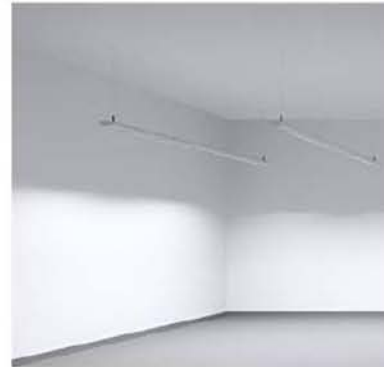
Indirect

Distribution Types

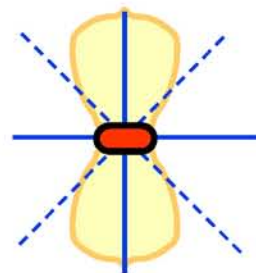
Suspended Linear Pendants



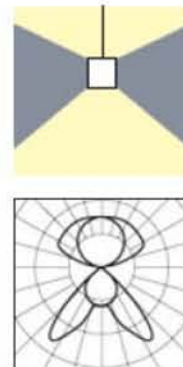
Direct



Indirect

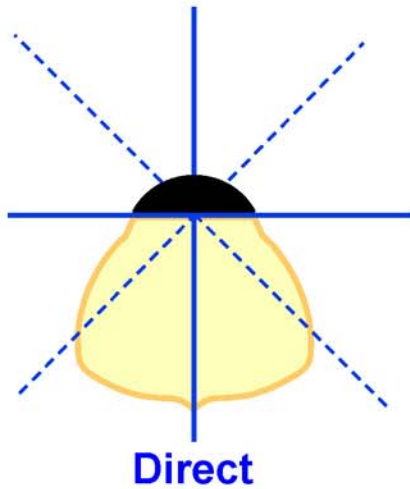
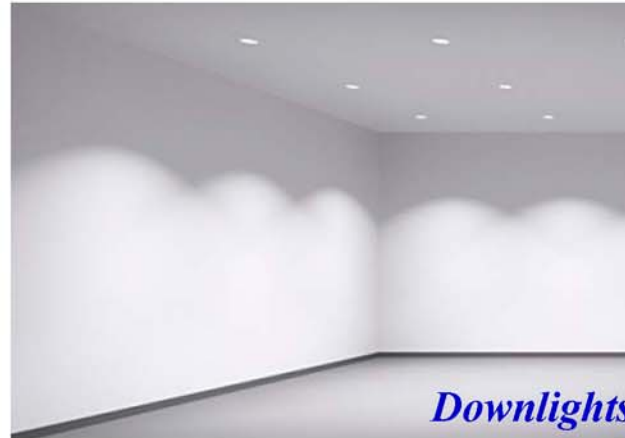


**Direct-
Indirect**



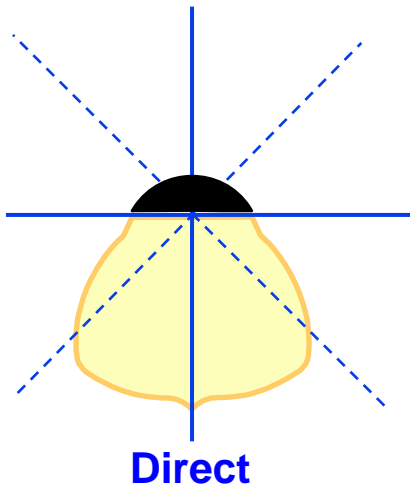
Distribution: Direct

100% of the
light directed
down



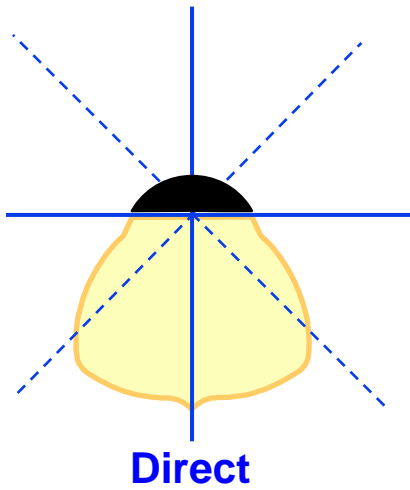
Distribution: Direct

100% of the
light directed
down



Distribution: Direct

100% of the
light directed
down

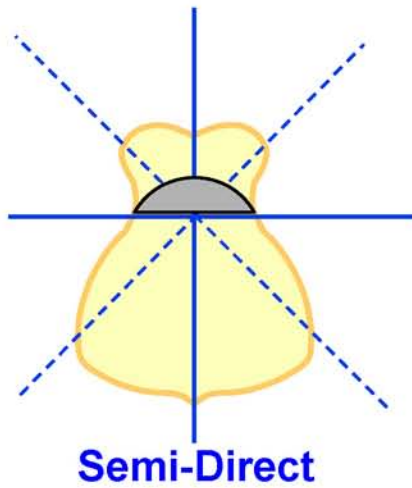


Distribution: Semi-Direct

Smaller
portion direct
up

-

Most of the
light directed
down

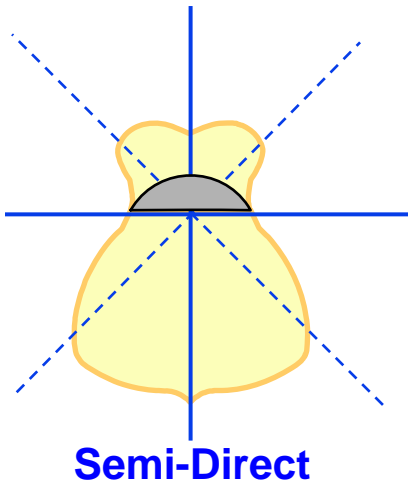


Distribution: Semi-Direct

Smaller
portion direct
up

-

Most of the
light directed
down

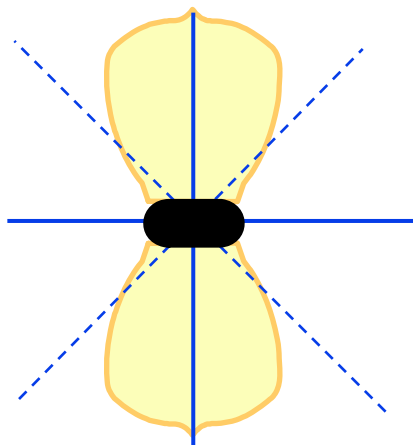


Distribution: Direct - Indirect

50% of the light
directed up

-

50% of the light
directed down

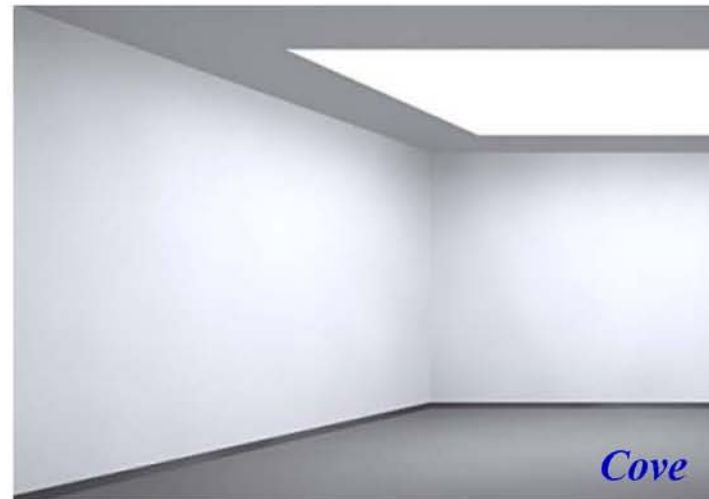
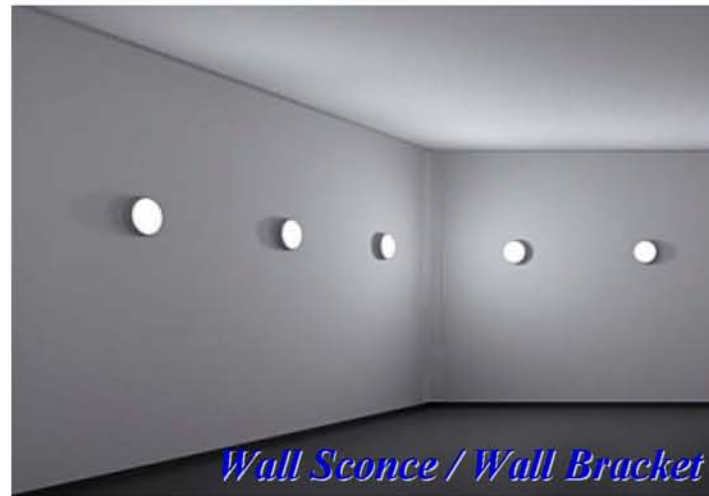
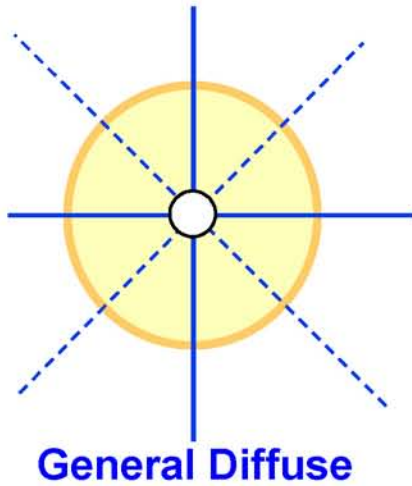


Direct-Indirect



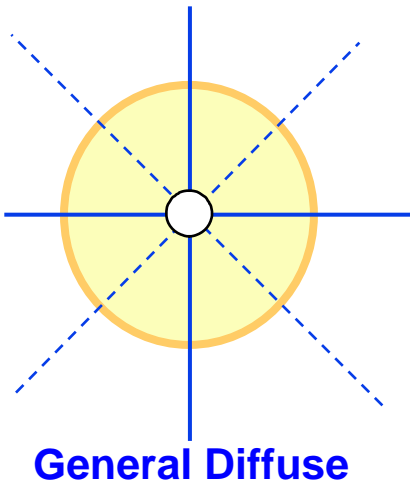
Distribution: General Diffuse

Light directed evenly around



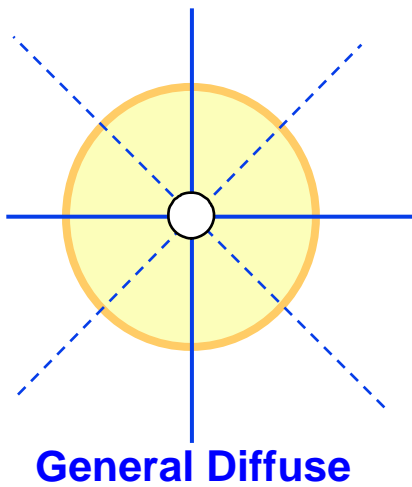
Distribution: General Diffuse

Light directed evenly around



Distribution: General Diffuse

Light directed evenly around

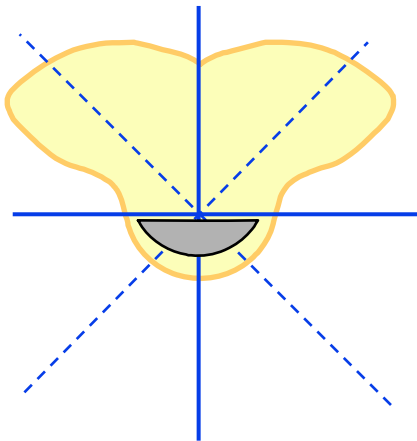


Distribution: Semi-Indirect

Most of the light direct up

-

Small portion of the light directed down



Semi-Indirect

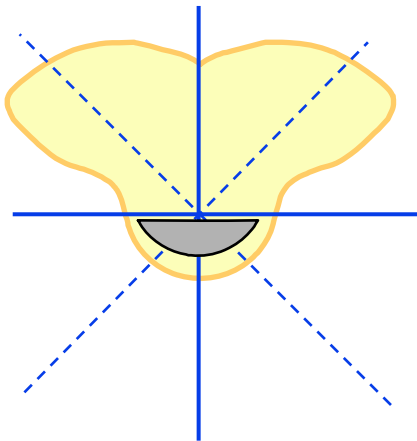


Distribution: Semi-Indirect

Most of the
light direct up

-

Small portion
of the light
directed down



Semi-Indirect

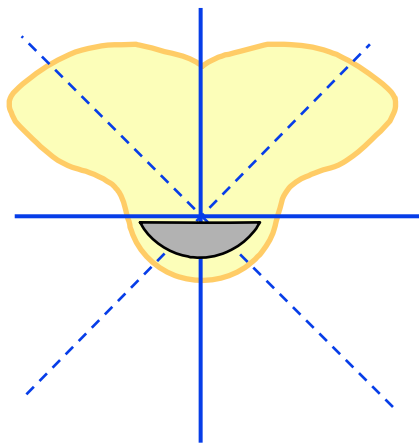


Distribution: Semi-Indirect

Most of the
light direct up

-

Small portion
of the light
directed down

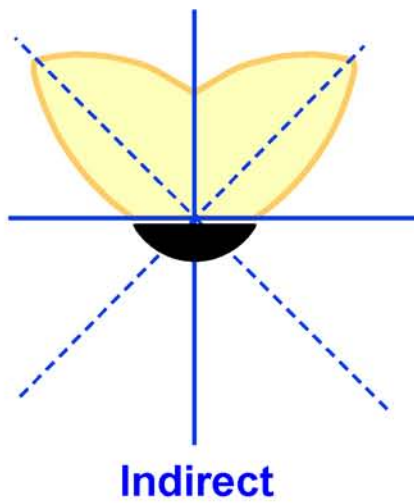


Semi-Indirect



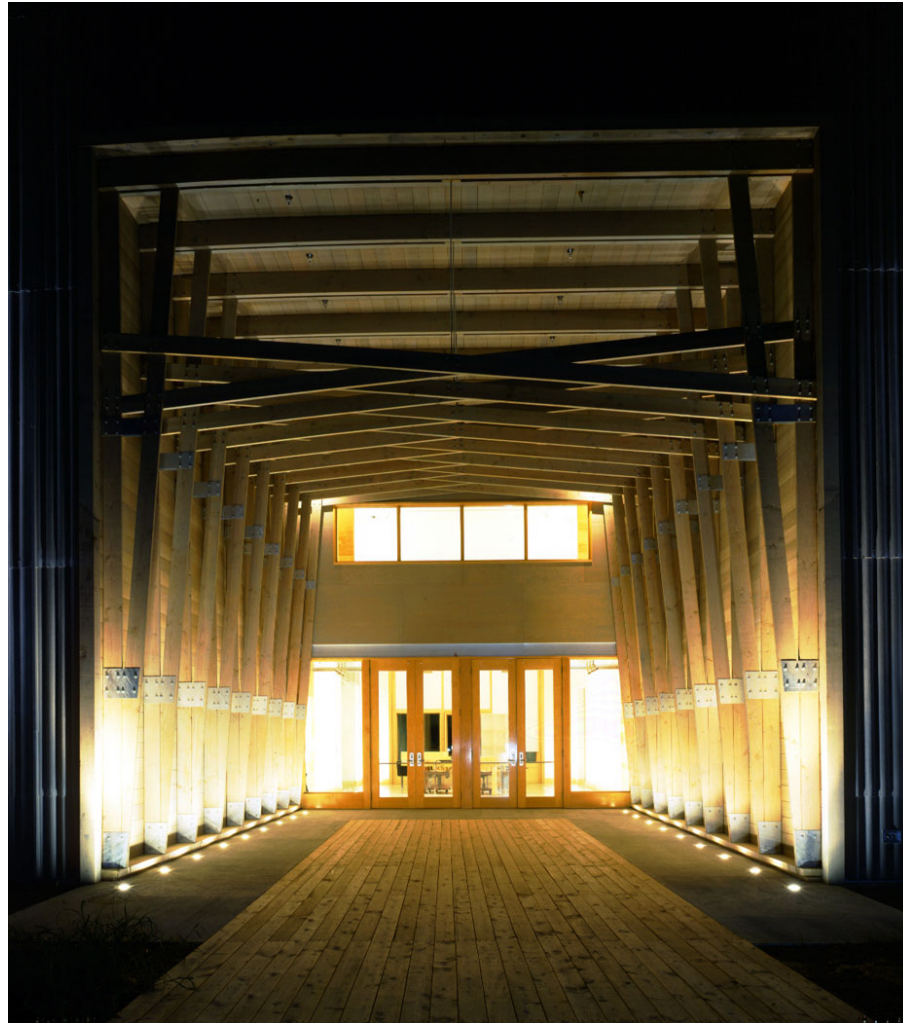
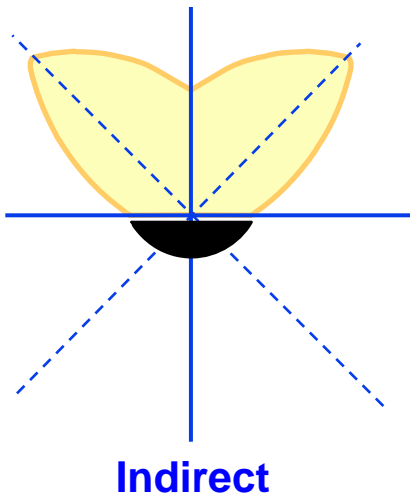
Distribution: Indirect

100% of
the light
directed
up



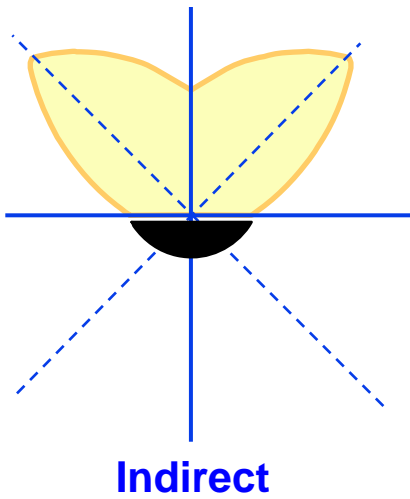
Distribution: Indirect

100% of
the light
directed
up



Distribution: Indirect

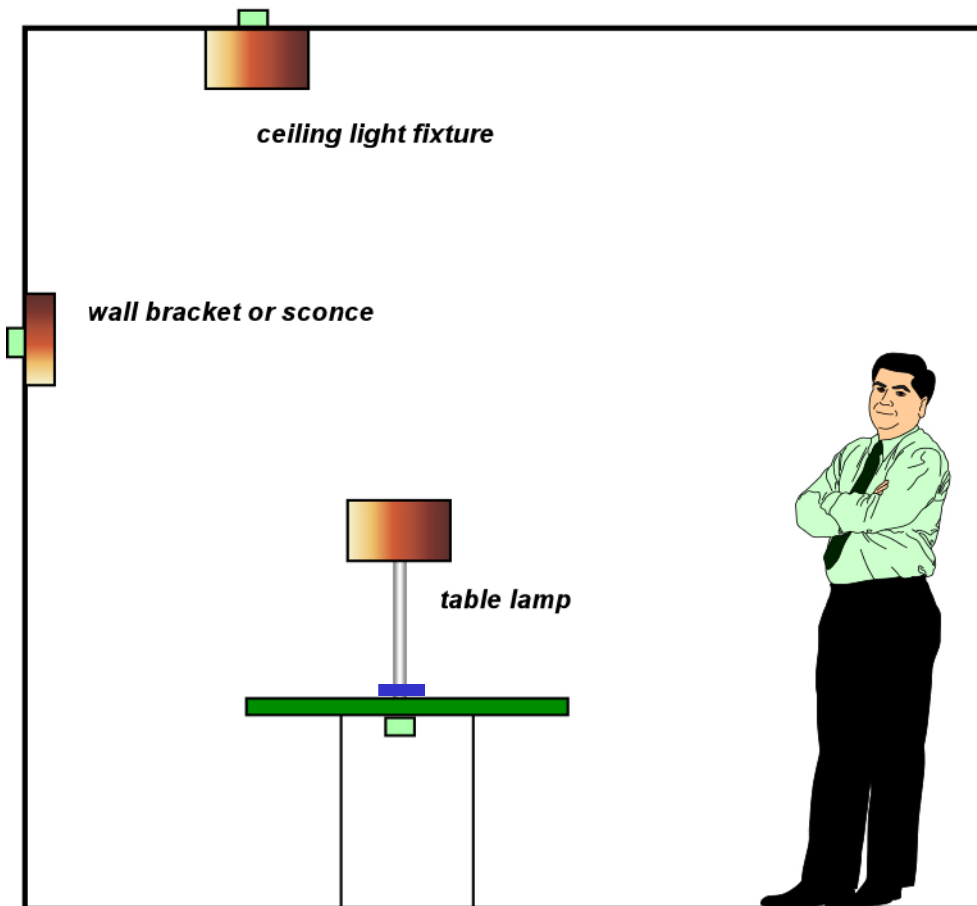
100% of the light directed up



We Define Light Fixtures by their... *Mounting*

Mounting

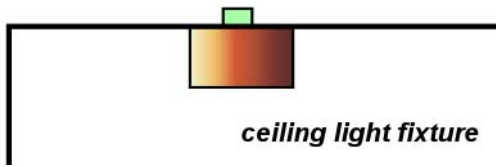
■ Surface



Section

Typical Components:

- Recessed Junction Box
- Housing
 - Back Plate
 - Lamp and Lamp Socket
 - Diffuser or Shielding
 - *Base or Leg for Table Lamp*



Surface Mounted Ceiling Light Flush Mounts

Extralarge > 23 Inch				See More
HELIOS 24 \$464.40	ROUND STAR 24 \$566.10	SQUARE STAR 24 \$593.10	SCUDO SARACENO CARDUUS MEDIUM \$2,336.80	
Large 17-23 Inch				See More
T-512 \$255.97	DICKEY 20 \$326.40	SQUARE STAR 18 \$503.10	WELL DONE \$627.20	
Medium 12-16 Inch				See More
50041 \$56.00	DICKEY 12 \$236.00	SOFT SQUARE 12 \$300.60	SKA 15 \$377.10	
Small 6-11 Inch				See More
SATIN CEILING 7 \$148.50	T-510 \$217.36	MINI ROUND 7 \$270.00	SKA 11 \$334.80	
Very Small < 6 Inch				See More
SOFFIONE CEILI \$157.50	CHISPA \$177.30	FRAME \$865.60		



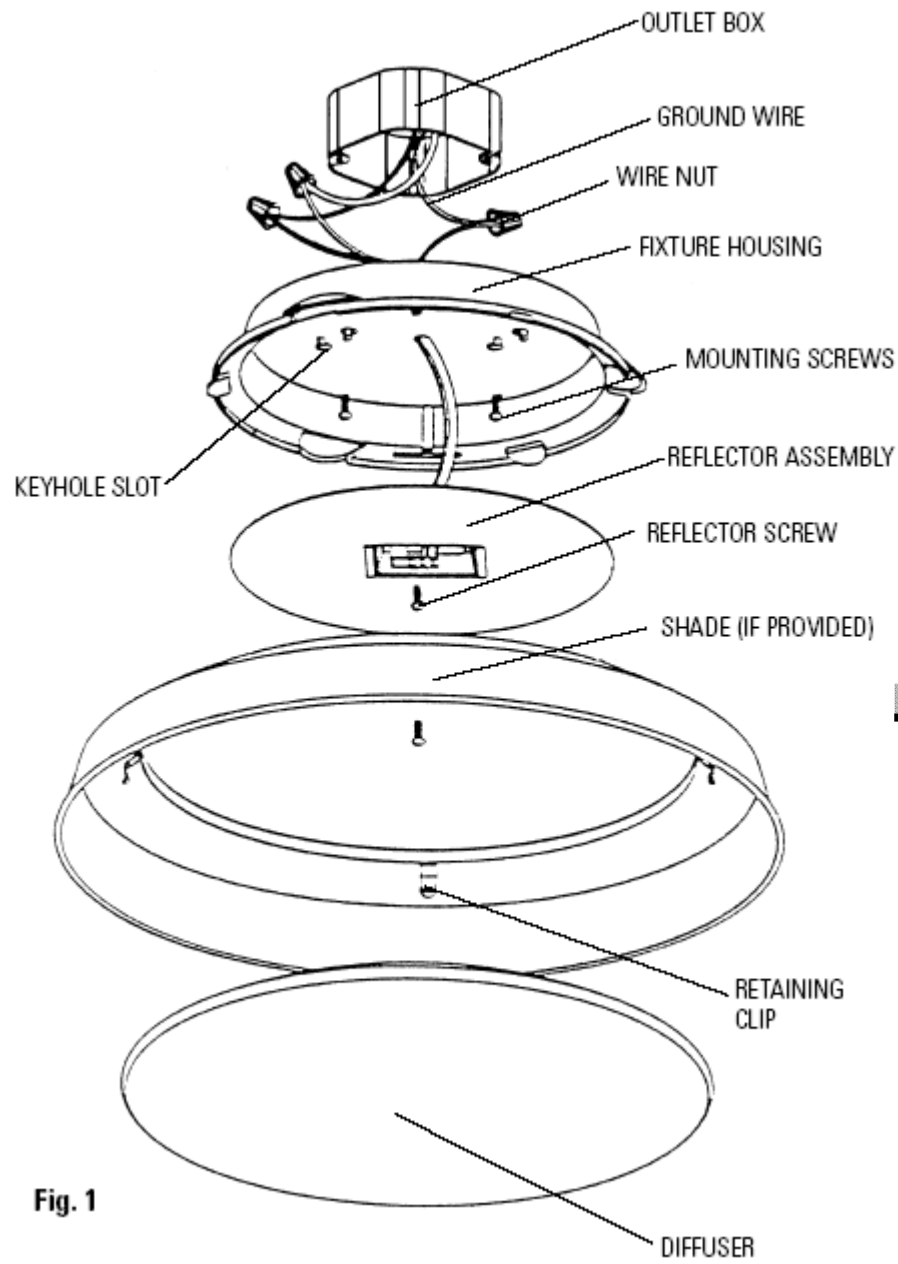
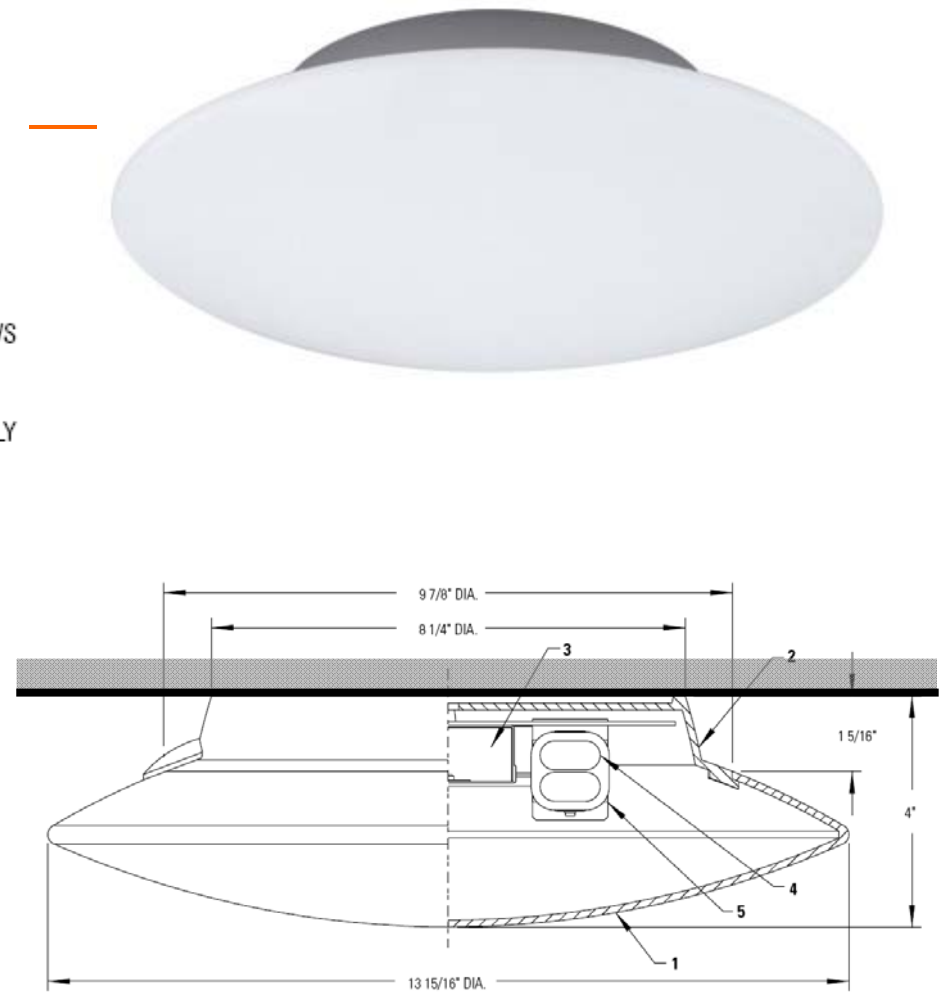


Fig. 1





wall bracket or sconce

Wall Sconce / Wall Bracket / Wall Marker Lights Wall Mounts

Extralarge > 24 Inch [See More](#)



ROCKETTE 23
\$693.90



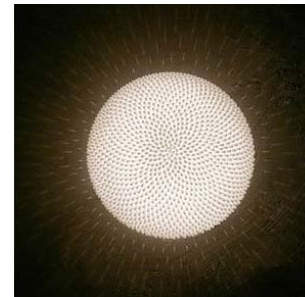
CLAVIUS SM INC
\$660.00



TRYLON
\$711.00



MISTRAL 21
\$1,910.70



Large 13-24 Inch [See More](#)



REGAL
\$223.20



QUINTA
\$319.50



BOUQUET
\$404.00



KOSHI WALL
\$660.00



Medium 7-12 Inch [See More](#)



OVAL FLUSH WAVE
\$169.20



GALILEO
\$263.70



A-1220
\$302.45



LOOP WALL
\$823.50



Small < 7 Inch [See More](#)



TULIP WALL
\$100.00



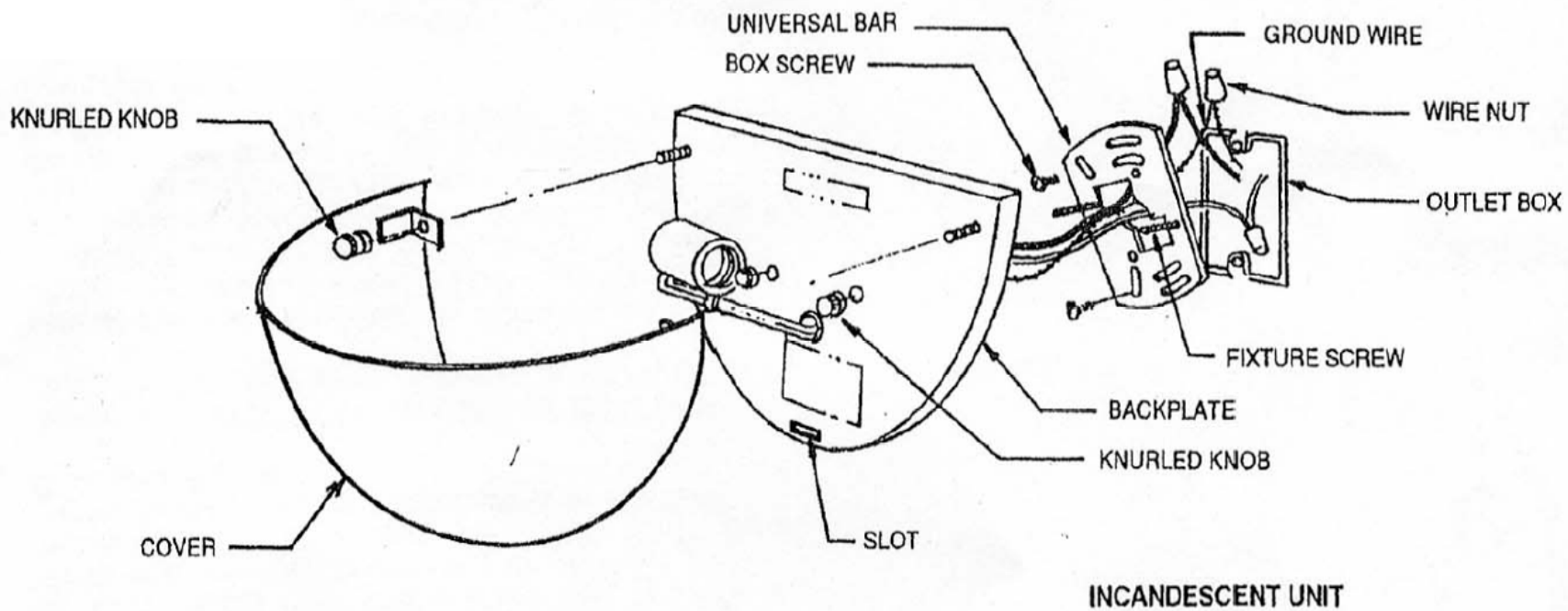
FIREBIRD WALL
\$228.00



DAU
\$220.80



EMERGE ROXANNE
\$304.00



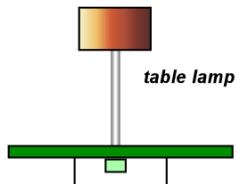


Table Lamps / Floor Lamps Task Lights

Ambient & Shade [See More](#)



MISS K
\$229.52



LUNA TABLE
\$240.30



TWIST C
\$595.20



HELIOPOLIS
\$805.50



Clamp-on [See More](#)



LITTLITE
\$92.70



TOLOMEO CLIP-ON
\$152.00



Task [See More](#)



TOLOMEO BODY
\$224.00



TIZIO
\$279.00



BERENICE BODY
\$301.73

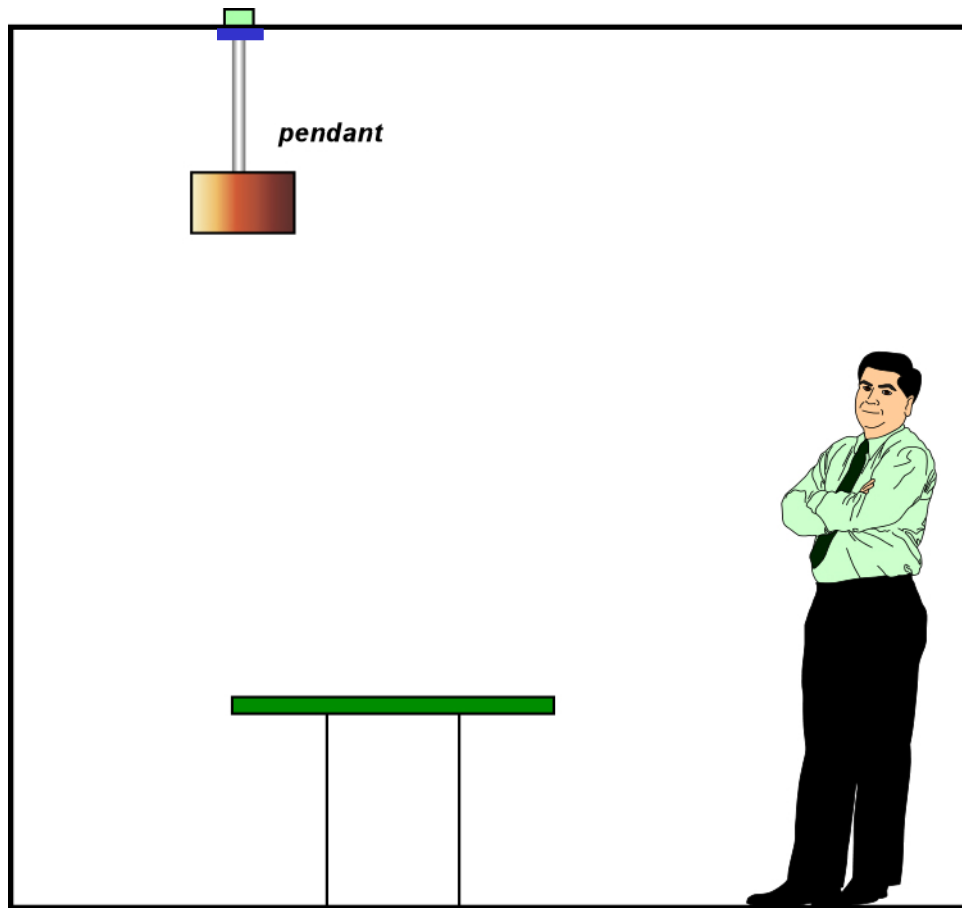


ARA
\$800.09



Mounting

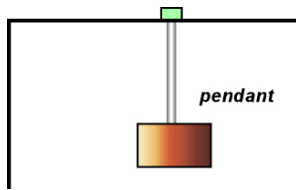
■ Pendant



Section

Typical Components:

- Recessed Junction Box
- Housing
 - Canopy
 - Stem
 - Lamp and Lamp Socket
 - Diffuser or Shielding



Pendants Suspended Lights / Chandelier

Extralarge > 30 Inch [See More](#)



RHAPSODY 32
\$2,080.00



SINUS
\$2,508.90



VIRGINS 6-LT
\$3,830.97



SCHEHERAZADE 3
GEOMETRIC
\$7,413.60

Large 21-30 Inch [See More](#)



VEGA OVAL 28
\$534.60



PRESTO 32
\$852.00



SCUDO SARACENO
PLAIN MEDIUM
\$2,186.40



ICE 28
\$3,946.50

Medium 13-20 Inch [See More](#)



LE KLINT 169
\$252.00



DICKEY 16
\$449.60



GUIIKO 1
\$561.60



LOGICO MI-TR N
\$1,200.00

Small 7-12 Inch [See More](#)



MELROSE PENDANT
\$264.00



FUCSIA 1
\$317.46

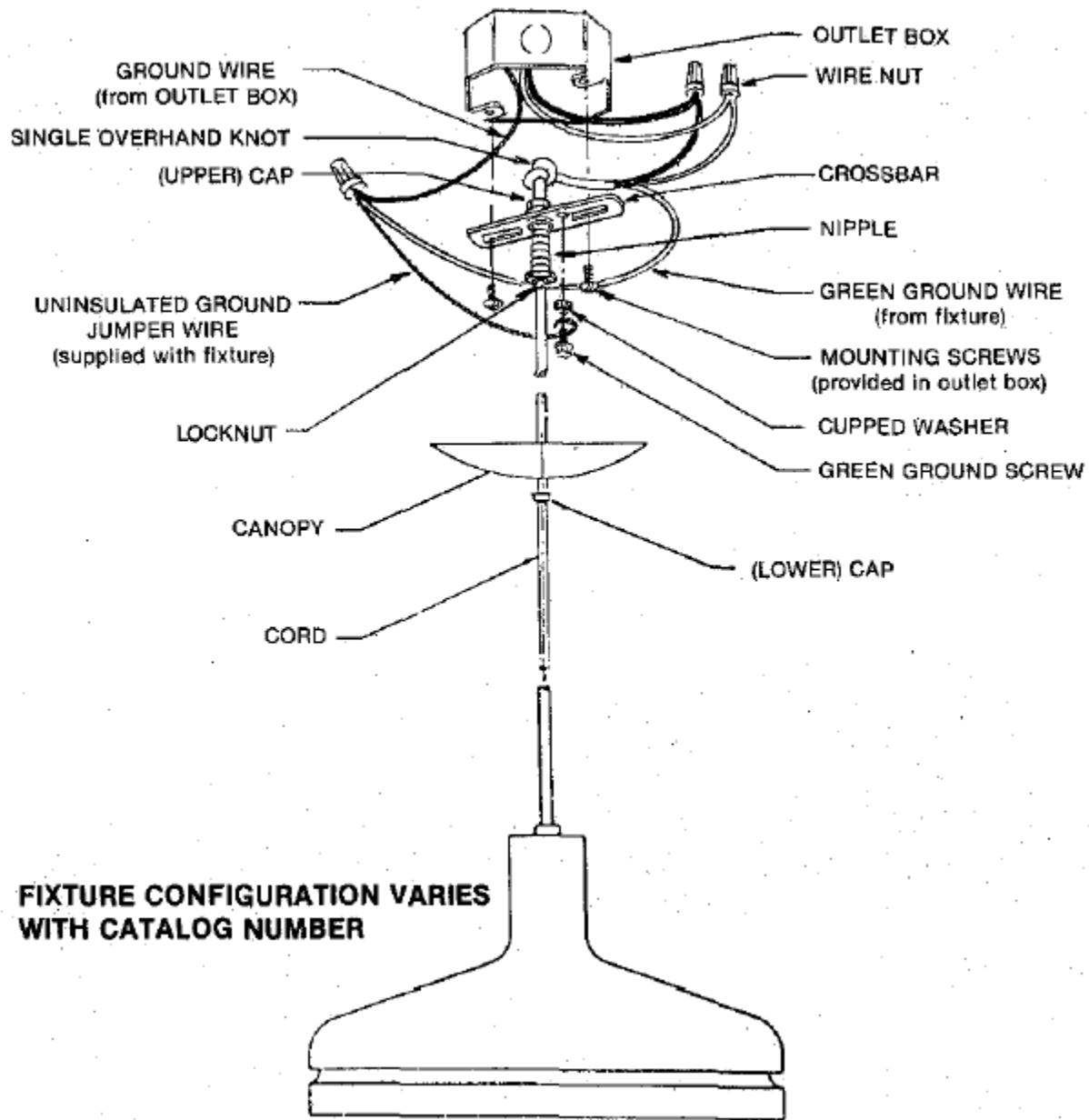


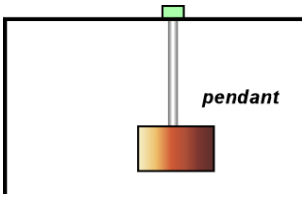
RONDO 12
\$460.80



GLASS CESENDELLO
CLASSIC MEDIUM
\$837.60







Industrial Pendants High Bays / RLM Pendants

fusion™

solid reflector frosted glass upright ring metal halide

groove™

Groove B Groove C Groove D Groove E Groove F Groove G M Groove G WH

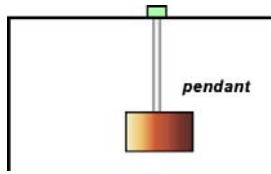
metro™

26" 34"

skydome™

22 33 44





Office Pendants *Suspended Linear Pendants*



Energos Series 1

Energos Series 2

F7000 Series



Louvered Fixtures

Lytespread

Multi-Lyte



Recessed & Cove

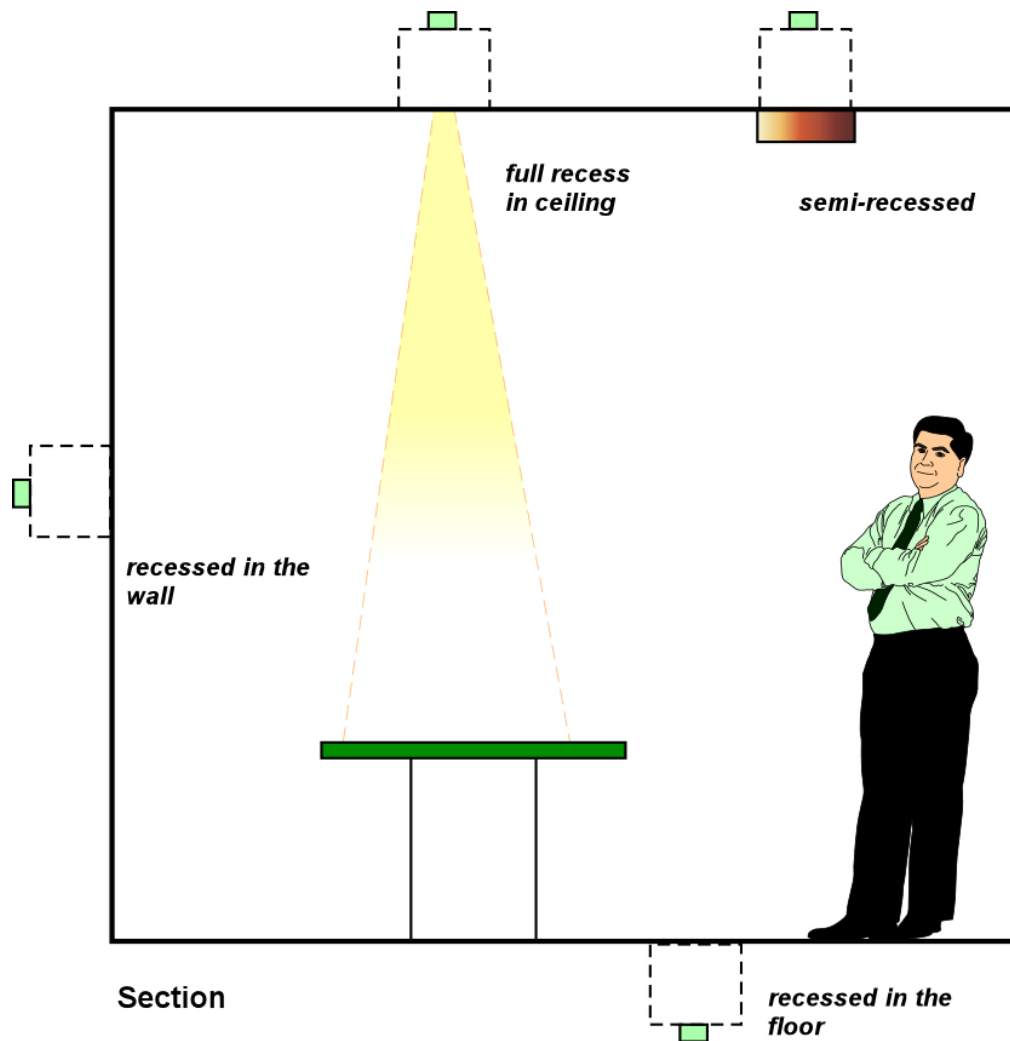
Round & Square

Silhouette



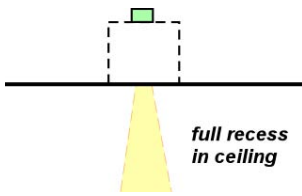
Mounting

■ Recessed



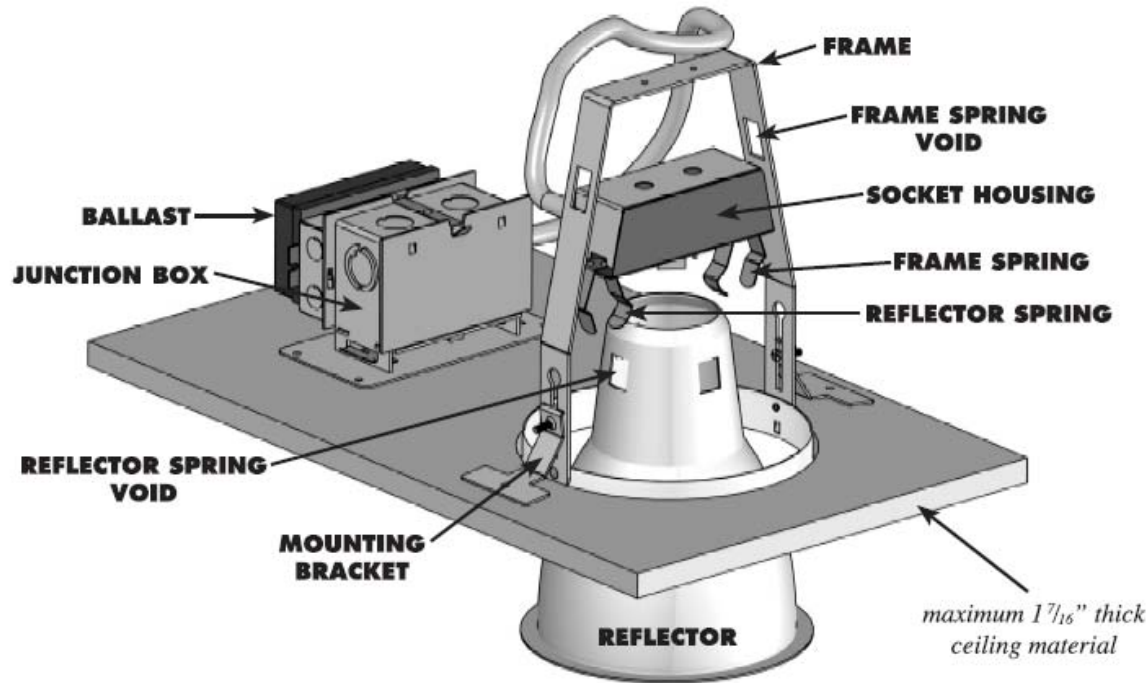
Typical Components:

- **Splice Box**
- **Housing**
 - Lamp and Lamp Socket
 - Aperture Cone
 - Diffuse or Shielding

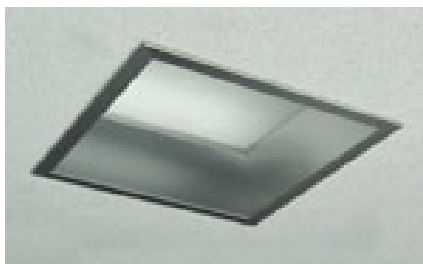


Downlights

High Hats / Recessed Cans / "Holes in the ceiling"



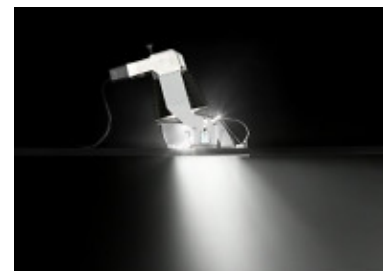
Typical components of a recessed downlight.



Square Downlight



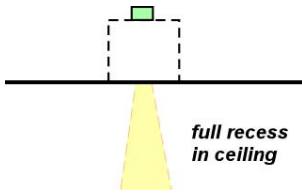
Round Downlight



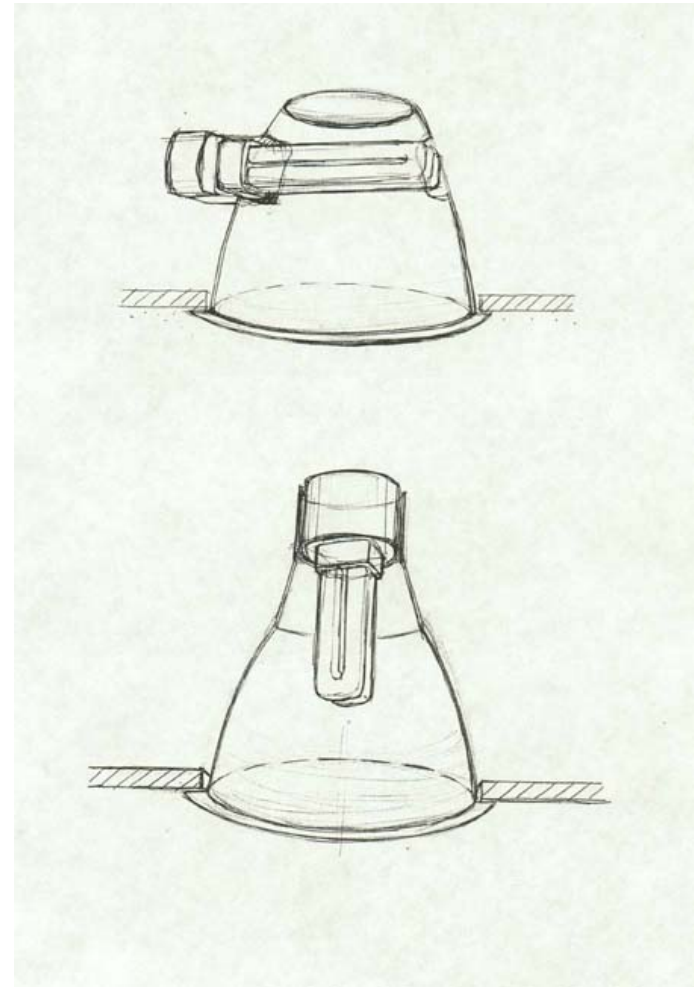
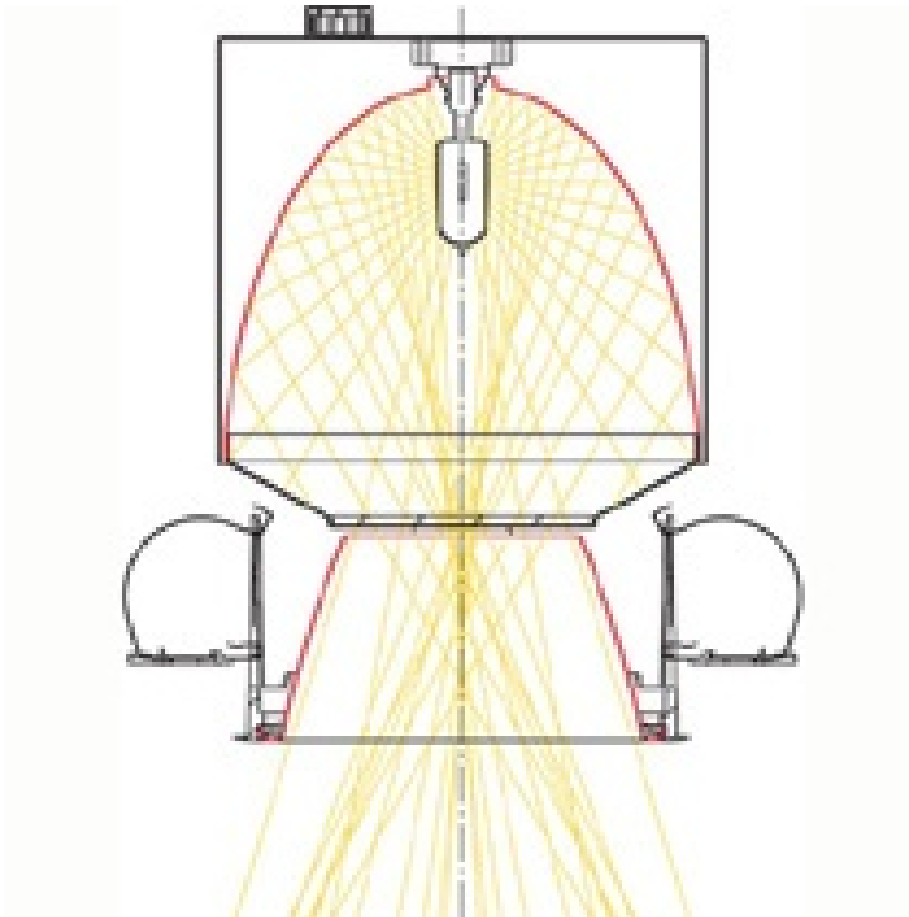
Adjustable Accent

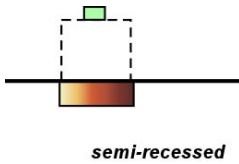


Downlight












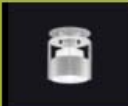








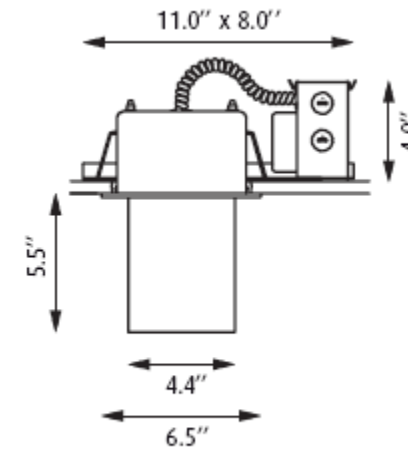
Downlights *High Hats / Recessed Cans / "Holes in the ceiling"*

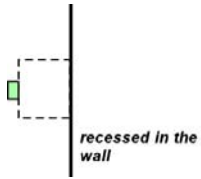




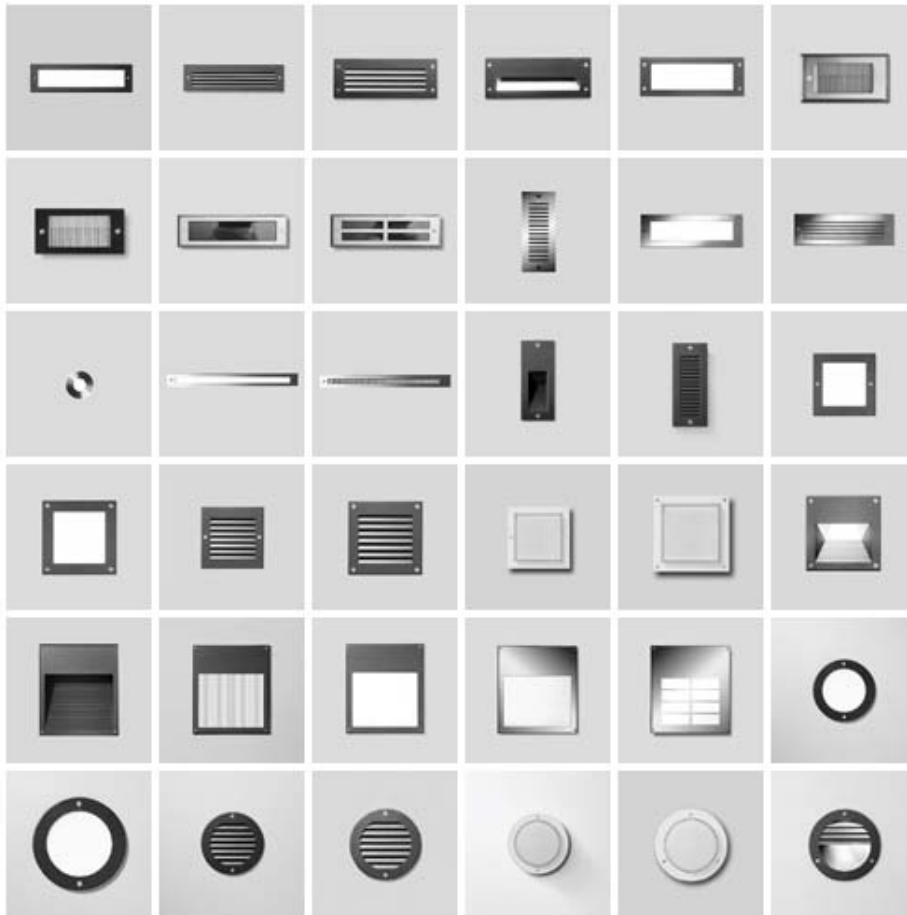
Semi-recessed Downlights Decorative High Hats

					
AH Exakta Micro	AH Exakta Mini and Maxi	AH System 300	AH System 360	AH System Basic	AH System Micro
					
AJ Cirkul	AJ Cirkul 6.3"	AJ Cirkul Mega	AJ Cirkul Micro	Ballerup	Ballerup Micro
					
Magazin Maxi	Magazin Mini	Oslo Magic/Magic	Oslo Micro	Oslo Round Ceiling/Wall	Pulsar 135
					
Pulsar 172	Saturn Ceiling	Saturn Maxi Ceiling			





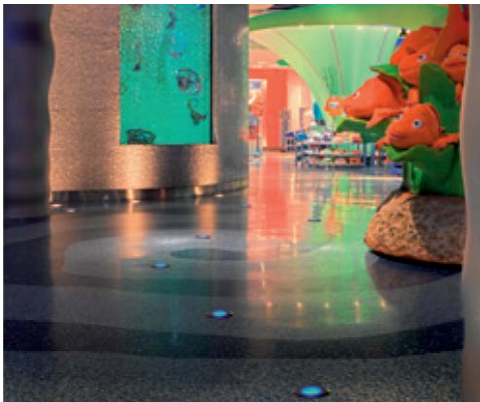
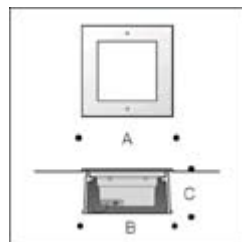
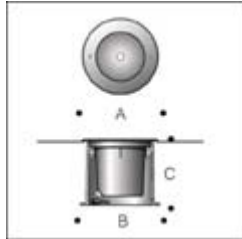
Step Lights Marker Lights / Wall Path Lights



Recessed Wall Uplights



In Grade Lights Landscape Uplights / Burial Lights



Glare



Direct glare from windows and luminaries.

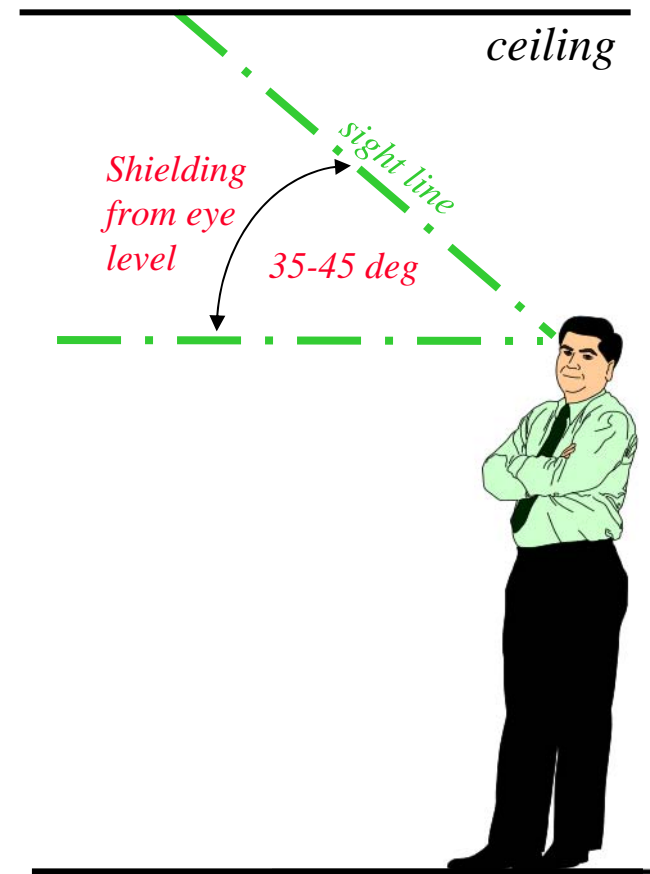
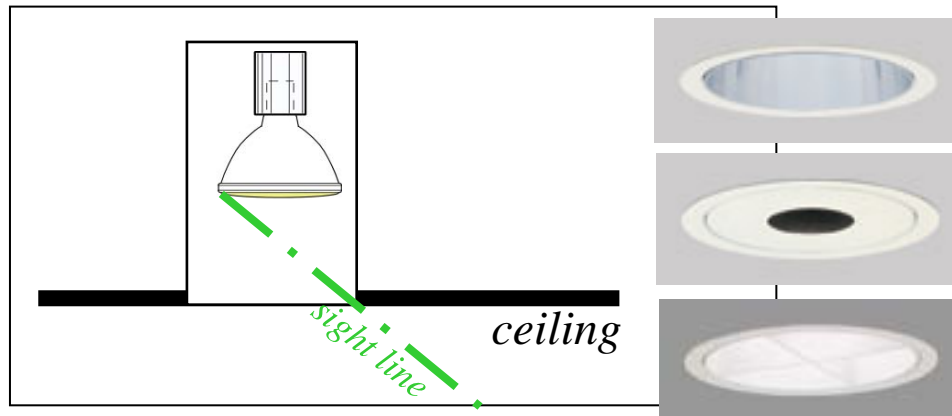
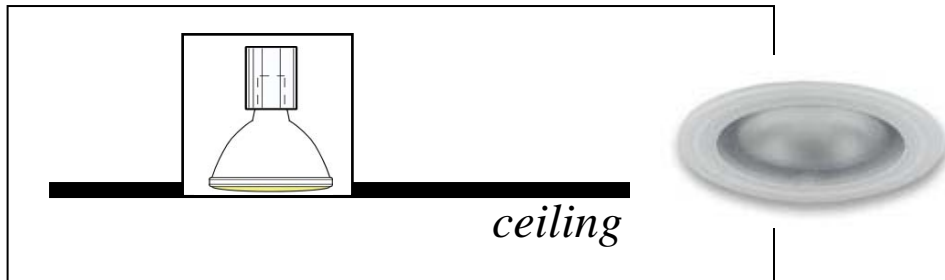
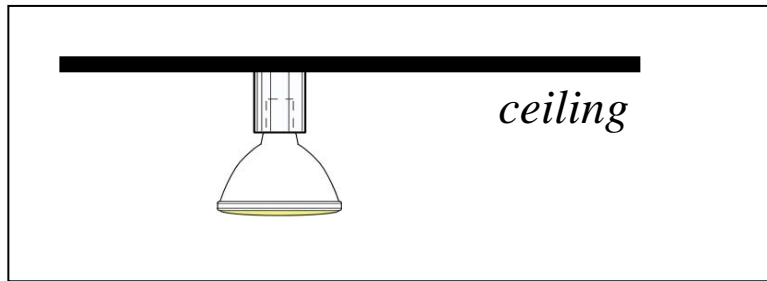


Reflected glare on computer screen from ceiling luminaries.

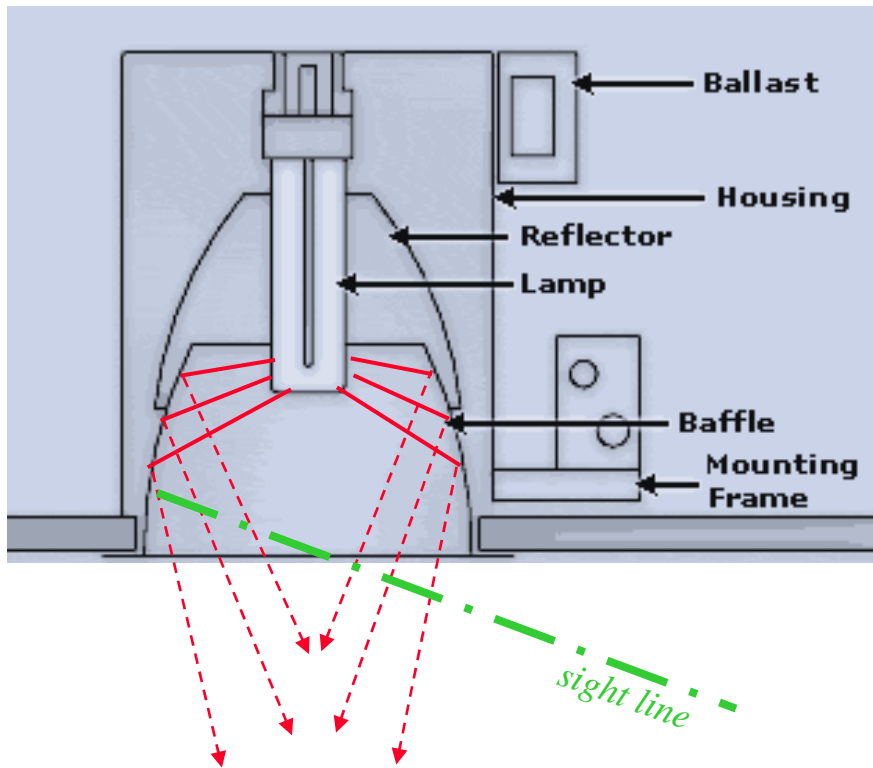
GLARE PREVENTION TIPS

- Distribute light to walls and ceilings. Bi-directional fixtures such as A, D, and E (see p. 7) work well.
- Use daylight to light walls and ceilings.
- Use adjustable blinds or shades that control window glare while retaining view.
- Choose higher reflectance room surfaces.
- Select only semi-specular or white painted louvers and reflectors. Avoid mirrored or specular (shiny) reflectors or louvers that can be seen from any angle.
- Shield the lamp from view with baffles, louvers, lenses or diffusing overlays.

Downlight Glare Control

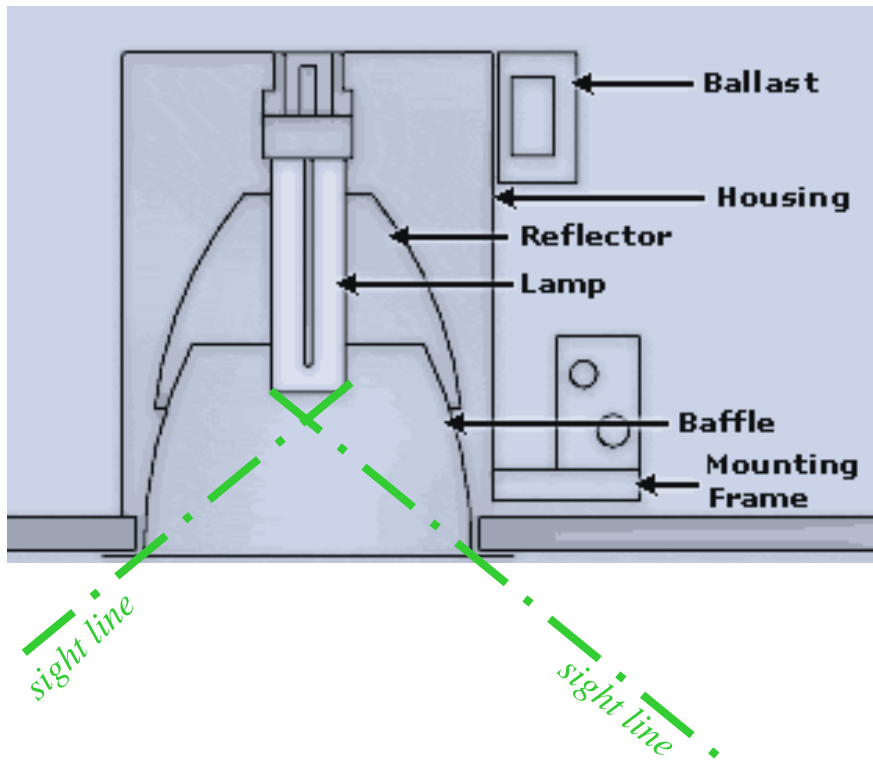


Downlight Glare Control



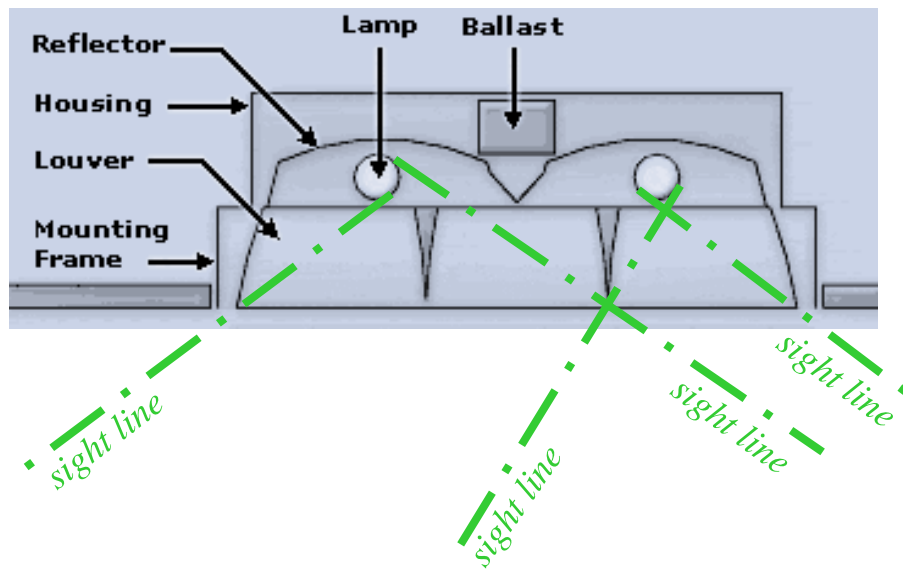
Contour of ceiling aperture
or louver to provide **Glare
Control** from normal
viewing angles

Downlight Shielding



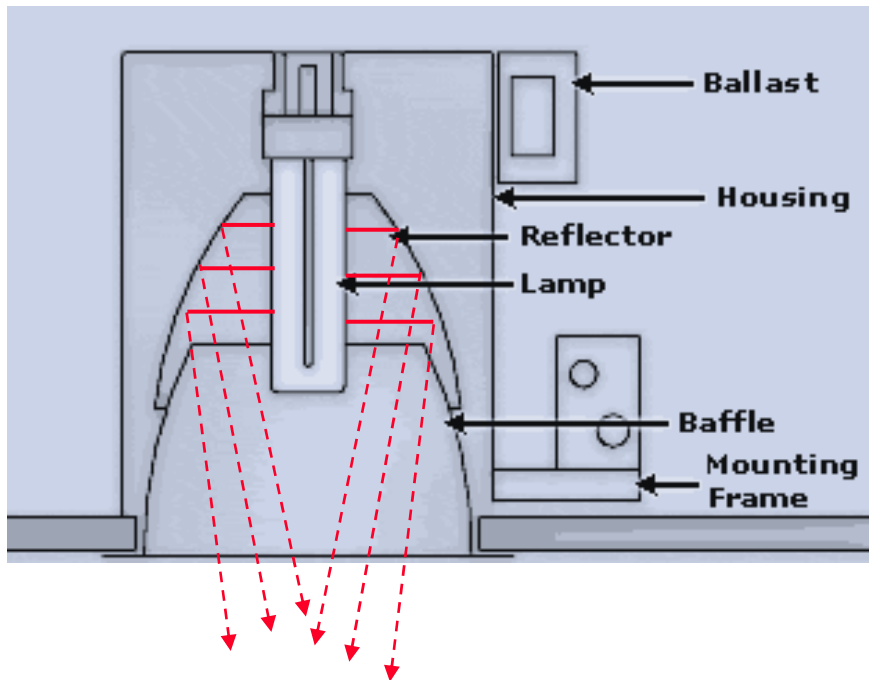
Lamp placed above ceiling aperture or louver to provide **shielding** from normal viewing angles

Troffer Shielding



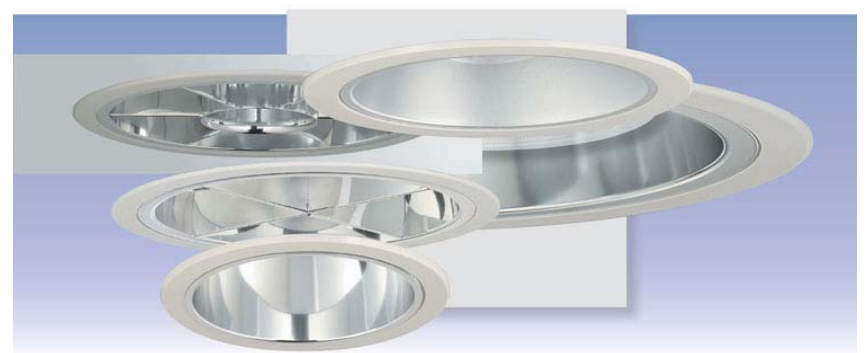
Lamp placed above ceiling aperture or louver to provide **shielding** from normal viewing angles

Downlight Reflector

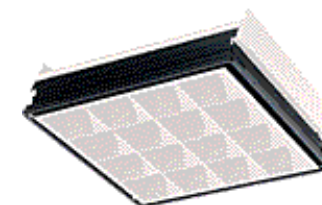
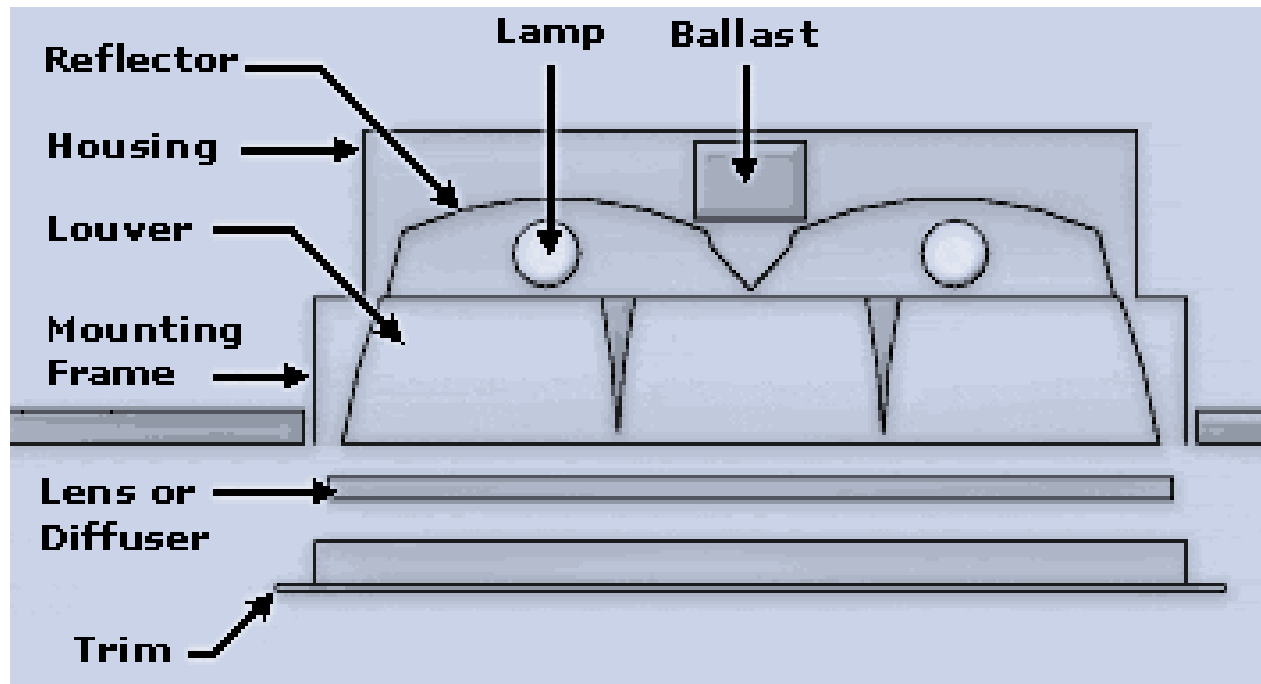


Reflectors around or above the lamp used to increase performance of the fixture

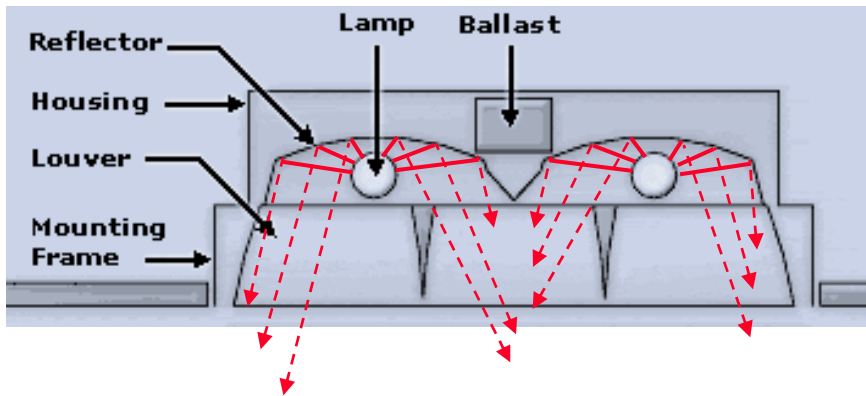
Trims *Aperture Cones / Aperture Trims*



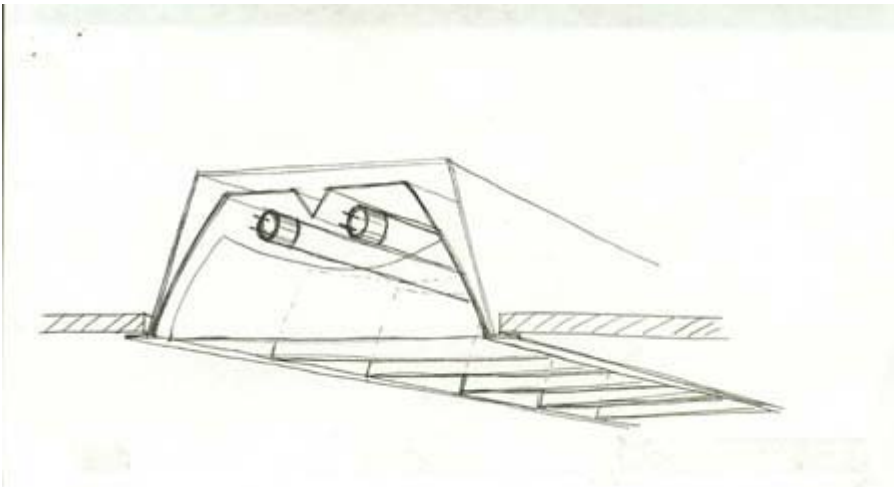
Troffer



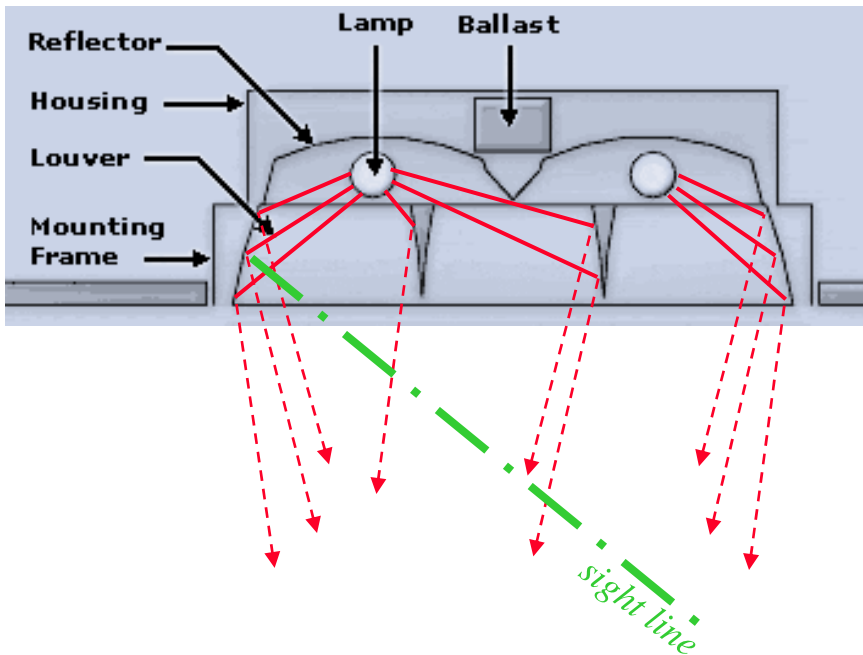
Reflector



Reflectors around or above the lamp used to increase performance of the fixture



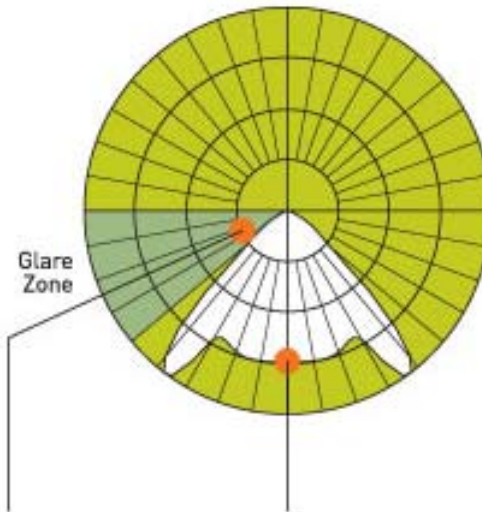
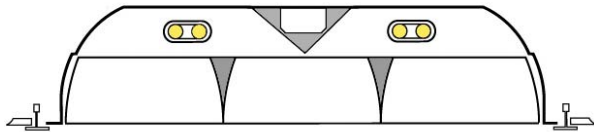
Glare Control



Contour of ceiling aperture
or louver to provide **Glare
Control** from normal
viewing angles

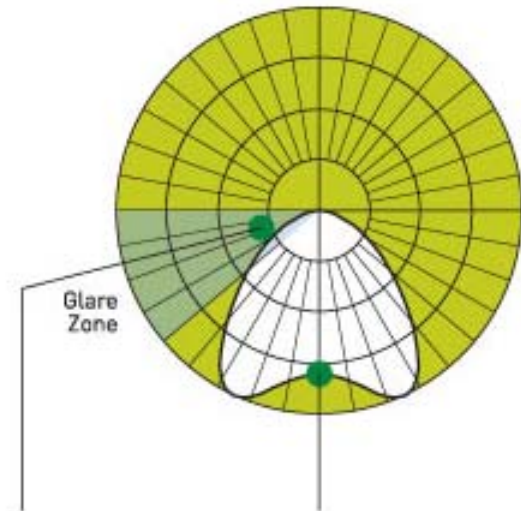
General or Ambient : Troffer





The sharp cut-off provides good glare control, but creates dark walls and ceilings, leading to darker cave-like environments.

People and objects have a direct view of the lamp.



A small amount of controlled brightness is introduced to the walls and ceiling, creating a brighter, more pleasant environment without causing unwanted glare.

Batwing lighting distribution creates less brightness directly below the fixture, minimizing veiling reflections.

Exterior

- Pole or Post Mounted



Exterior

- **Building or Ground Mounted**



Exterior

- **Ground Mounted for Object Lighting**



Fixtures **Inside and Out**

- **Underwriters Laboratory Testing**
 - **Dry** Applications
 - **Damp** Applications
 - **Wet** Applications
 - **Wet/Dry** Applications
 - **Underwater** Applications
 - **Corrosive** Applications
 - **Hazardous** Applications

Finding Fixtures

■ General Lighting Mnfrs Websites

- www.Lightolier.com
- www.Erco.com

■ Light Fixture Search Sites

- www.LightSearch.com
- www.eLumit.com

■ Retail Sites

- www.Lightology.com
- www.unicahome.com
- www.lumens.com
- www.100watt.net