

ART 2640, Building Systems of Interior Environments

Fall Semester 2020

Tuesdays & Thursdays 10:30-11:50

Online

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Interior Lighting Luminaire Classification

Luminaire classifications are based upon:

Type of Light Source: lamp type

Mounting Arrangement: installation

Light Distribution: amount and direction

Application: typical use(s)

Luminaire Classifications

Type of Light Source

Incandescent

Fluorescent

HID

LED

Cold Cathode

Fiber Optic



Luminaire Classifications

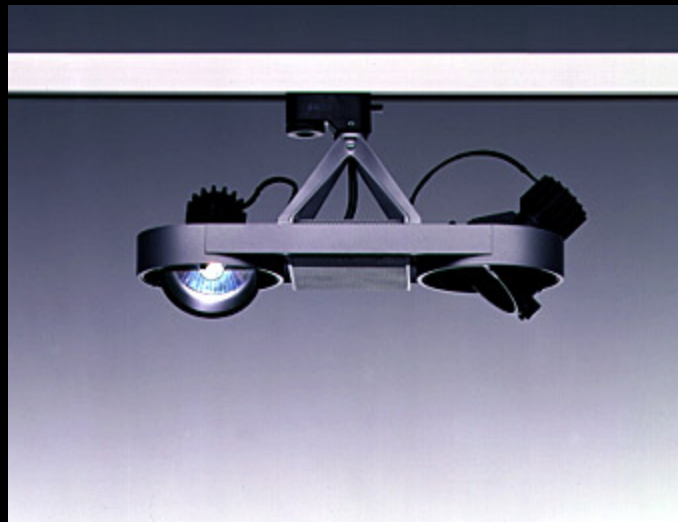
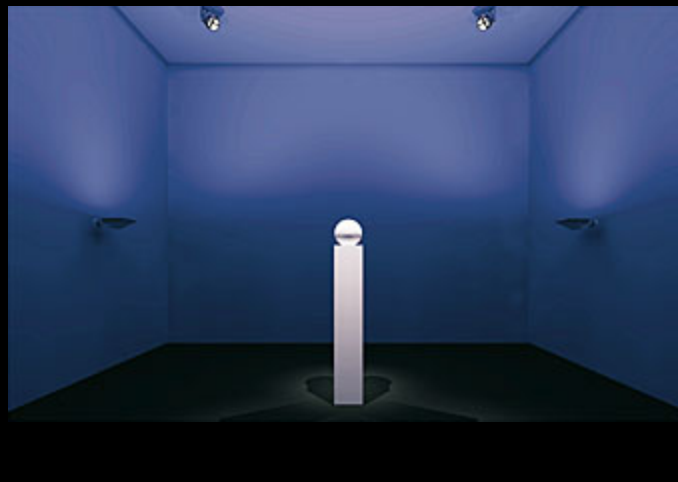
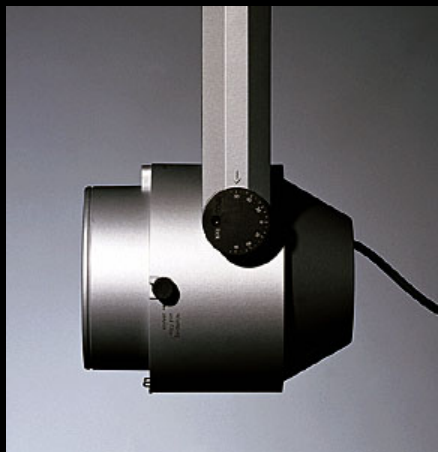
Type of Light Source - Incandescent



<http://www.erco.com/>

Luminaire Classifications

Type of Light Source - Incandescent



Luminaire Classifications

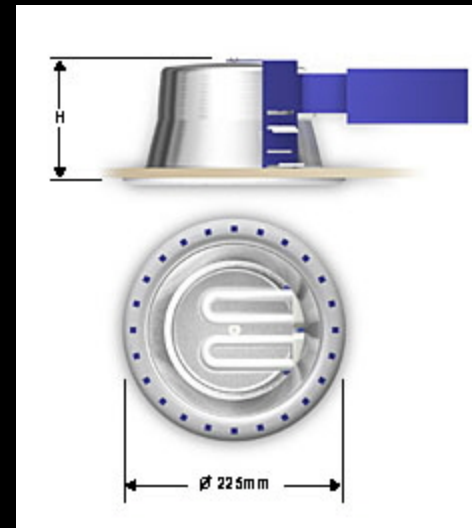
Type of Light Source - Fluorescent



<http://www.zumtobelstaffusa.com>

Luminaire Classifications

Type of Light Source - Fluorescent



<http://www.atomis.nl/>

Luminaire Classifications

Type of Light Source - HID



<http://www.spilighting.com/>

<http://www.erco.com/>

Luminaire Classifications

Type of Light Source - LED



Floor orientation Luminaire

<http://www.erco.com>



<http://www.martini.it/>

Luminaire Classifications

Type of Light Source - Cold Cathode



Luminaire Classifications

Type of Light Source - Cold Cathode



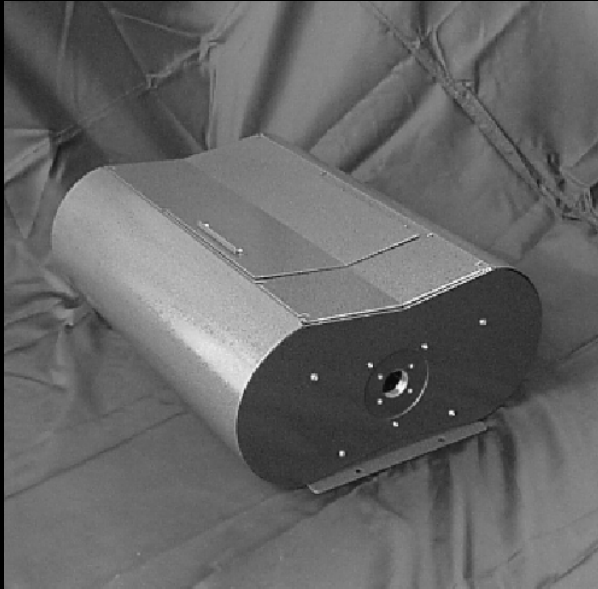
Luminaire Classifications

Type of Light Source - Fiber Optic



Luminaire Classifications

Type of Light Source - Fiber Optic



Illuminators
(400 Watt Metal Halide)



Fiber



Fixtures

Luminaire Classifications

Type of Light Source - Fiber Optic



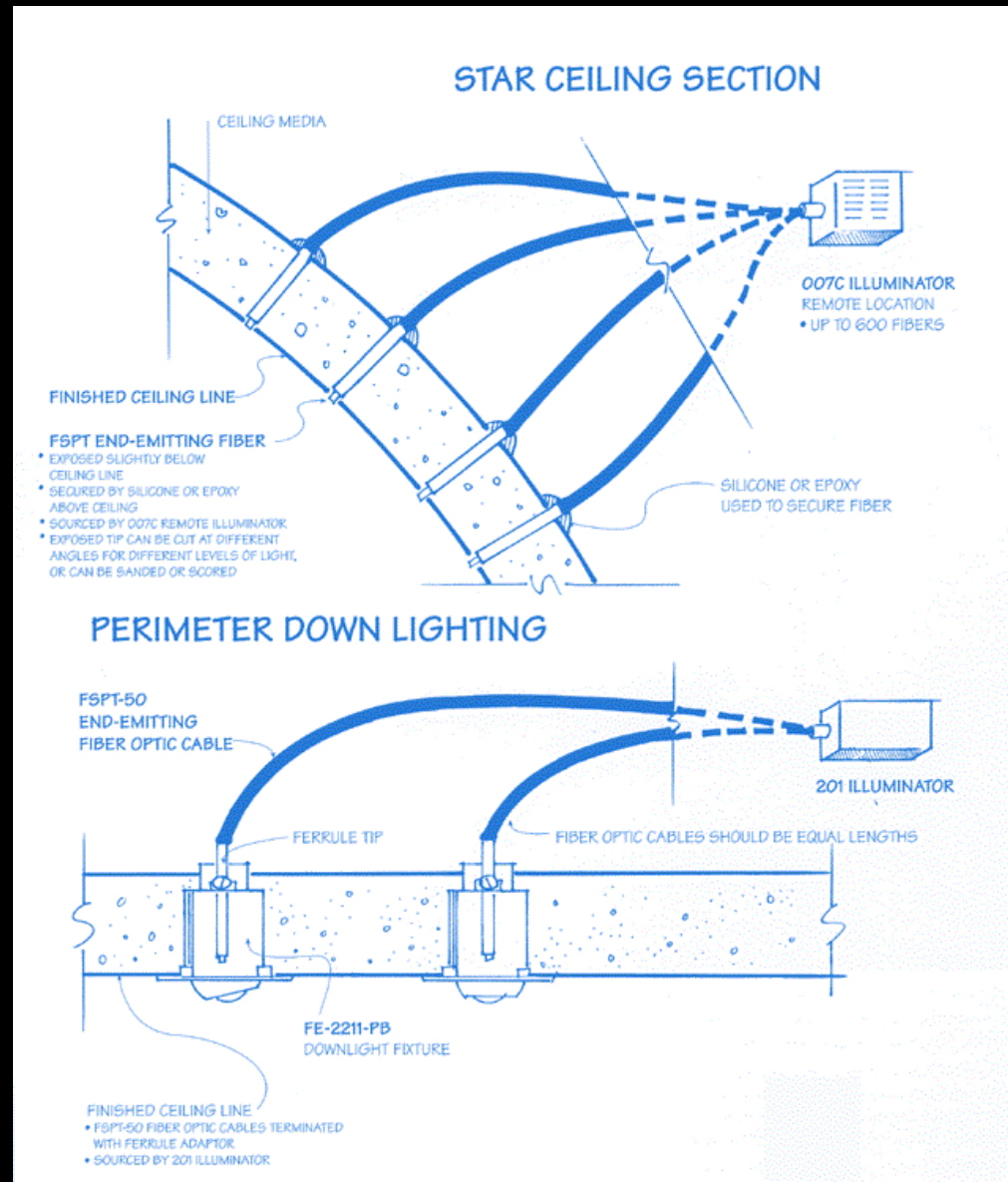
Down Lighting

Backlighting of Glass Block



Luminaire Classifications

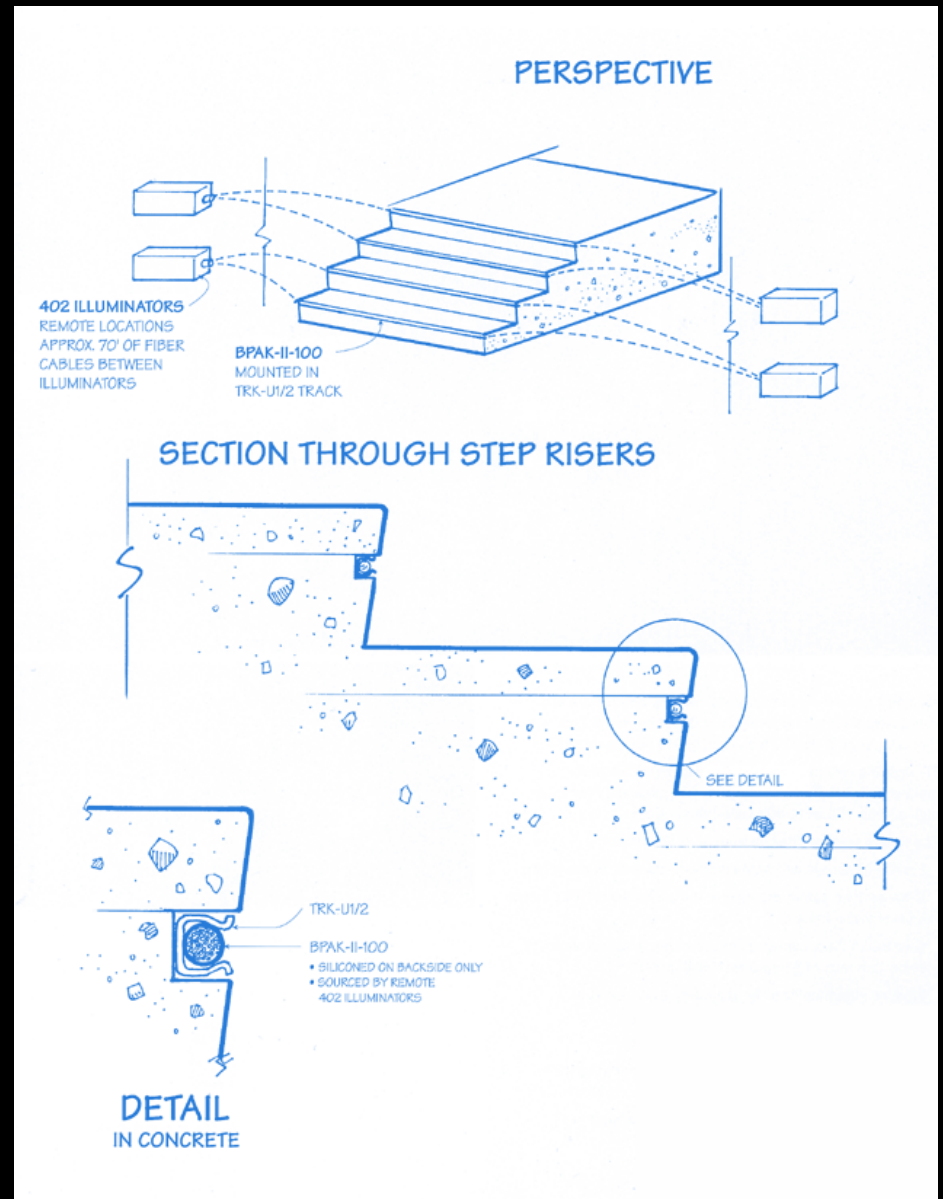
Type of Light Source Fiber Optic



Luminaire Classifications

Type of Light Source

Fiber Optic



Luminaire Classifications

Mounting Arrangement

Surface

Suspended

Recessed

Semi-Recessed

Track

Portable

Sconce

Luminaire Classifications

Mounting Arrangement - Surface



Mounted directly on the ceiling or wall.

<http://www.nemoitalianaluce.net/>

Luminaire Classifications

Mounting Arrangement - Surface



Mounted directly on the ceiling or wall.

<http://www.nemoitalianaluce.net/>

Luminaire Classifications

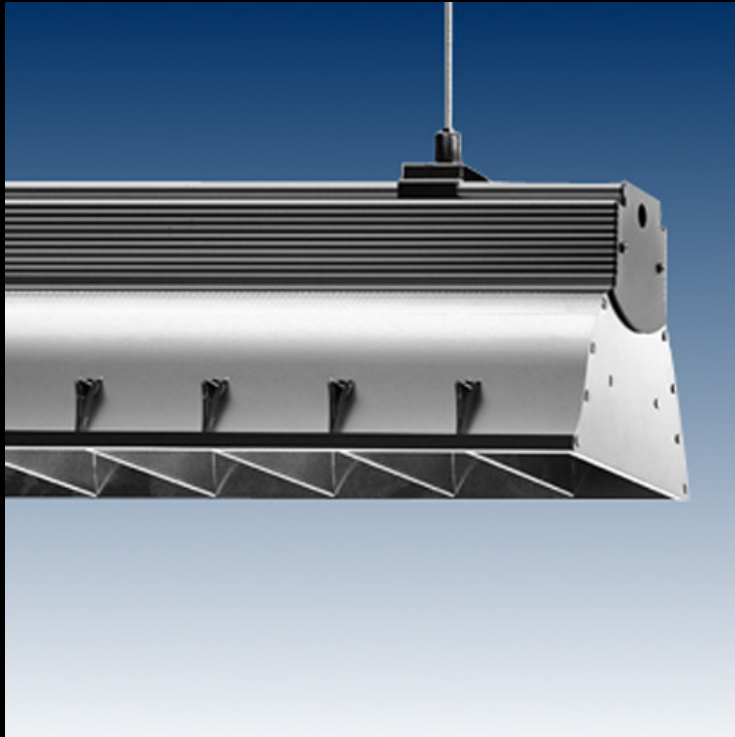
Mounting Arrangement - Surface



Mounted directly on the ceiling or wall.

Luminaire Classifications

Mounting Arrangement - Suspended



<http://www.zumtobelstaffusa.com/>



<http://www.elliptipar.com/>



Hang from the ceiling by a cable,
pendent, cable, or conduit.

Luminaire Classifications

Mounting Arrangement - Suspended

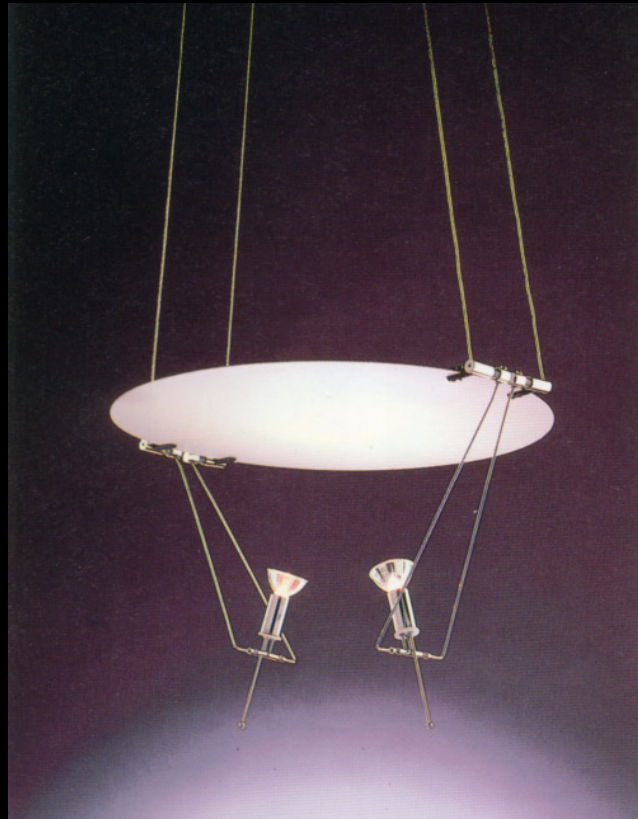
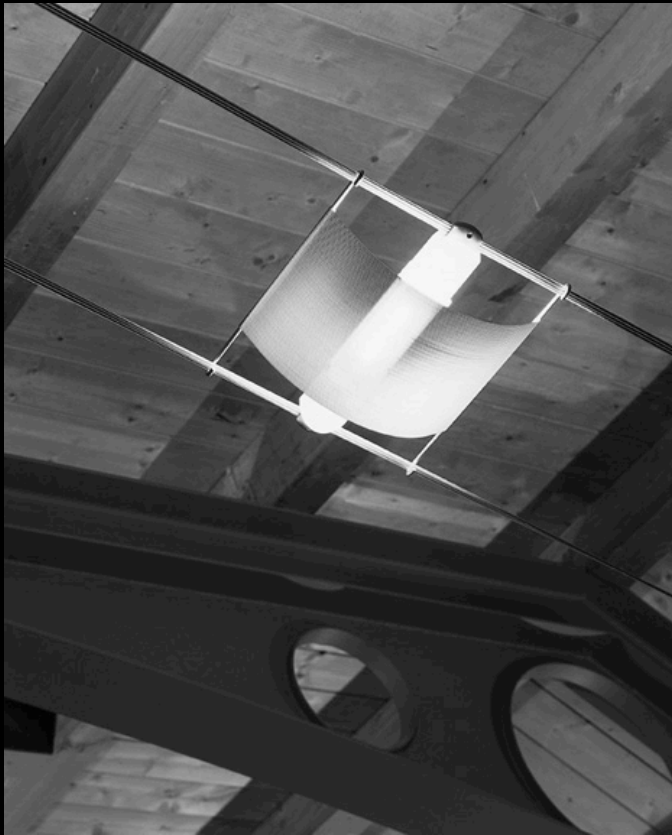


<http://www.zumtobelstaffusa.com/>

Hang from the ceiling by a cable, pendant, cable, or conduit.

Luminaire Classifications

Mounting Arrangement - Suspended



<http://www.nemoitalianaluce.net/>

Hang from the ceiling by a cable, pendant, cable, or conduit.

Luminaire Classifications

Mounting Arrangement - Suspended

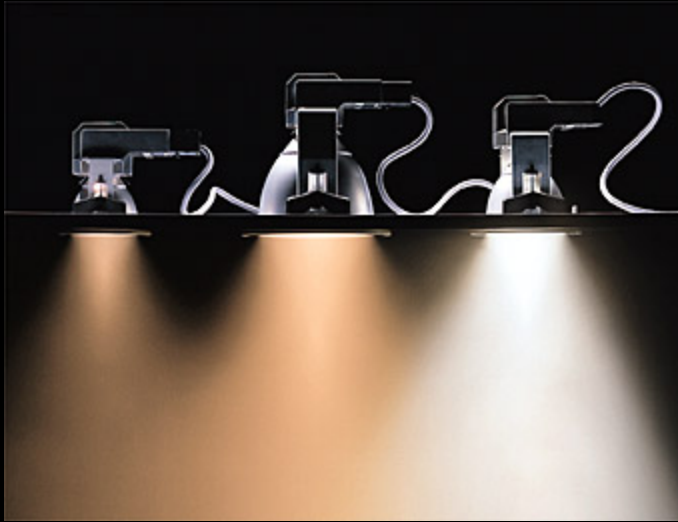


Hang from the ceiling by a cable, pendent, cable, or conduit.



Luminaire Classifications

Mounting Arrangement - Recessed



<http://www.erco.com/>

Mounted inside on the ceiling or wall cavity.

Luminaire Classifications

Mounting Arrangement - Recessed



<http://www.louispoulsen.com/>

Mounted inside on the ceiling or wall cavity.

Luminaire Classifications

Mounting Arrangement - Semi Recessed

Lighting the Wall Small semi-recessed with hood

Quad Tube Compact Fluorescent Ceramic Metal Halide Tungsten Halogen

Style 201 1:8 Scale (Halogen, metal halide remote)

Style 205 1:8 Scale (Quad tube, metal halide integral electronic)

Ceiling Cutout

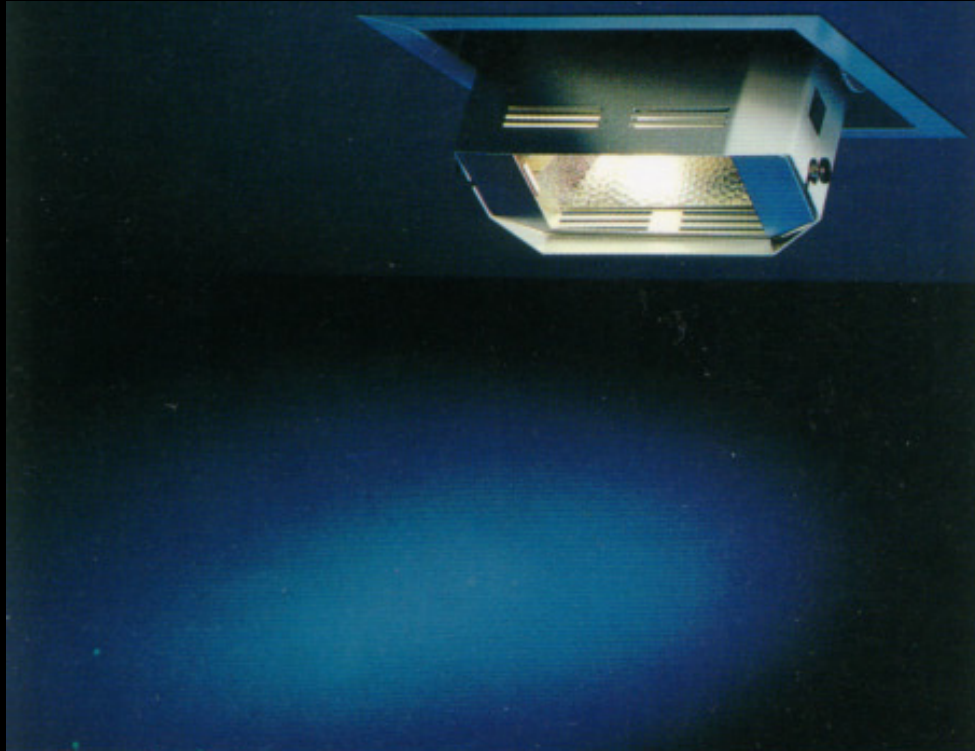
Mounted partially in the ceiling or wall cavity.

<http://www.elliptipar.com/>



Luminaire Classifications

Mounting Arrangement - Semi Recessed



Mounted partially in the ceiling or wall cavity.

Luminaire Classifications

Mounting Arrangement - Track



<http://www.spilighting.com/>

Fixtures attached to a electrical raceway.

Luminaire Classifications

Mounting Arrangement - Track



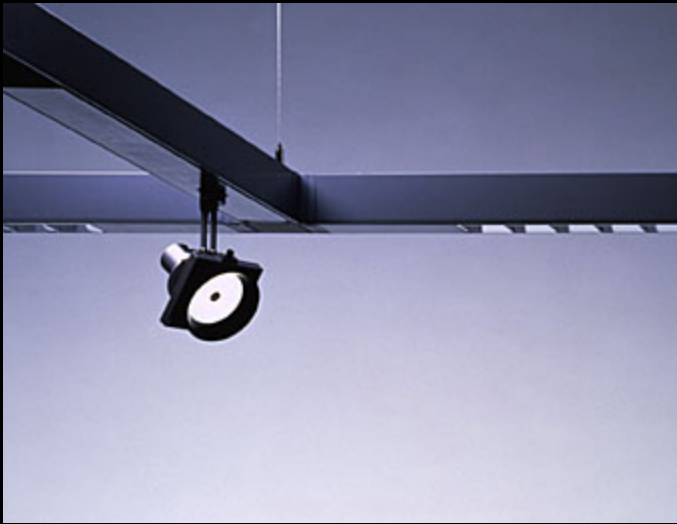
<http://www.zumtobelstaffusa.com/>

<http://www.erco.com/>

Fixtures attached to a electrical raceway.

Luminaire Classifications

Mounting Arrangement - Track

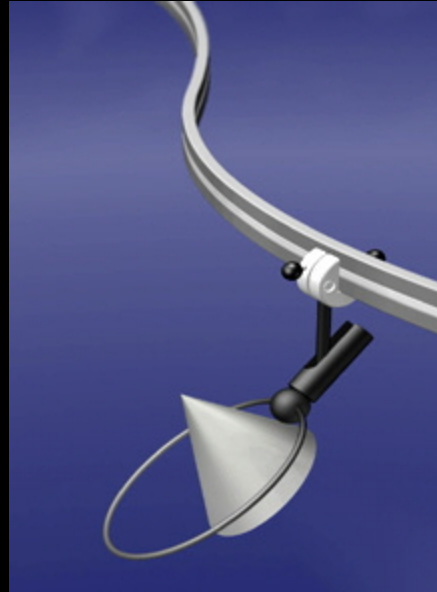


Combination Fluorescent and Incandescent
<http://www.erco.com/>

Fixtures attached to a electrical raceway.

Luminaire Classifications

Mounting Arrangement - Track



<http://www.atomis.nl/>

Fixtures attached to a electrical raceway.

Luminaire Classifications

Mounting Arrangement - Track

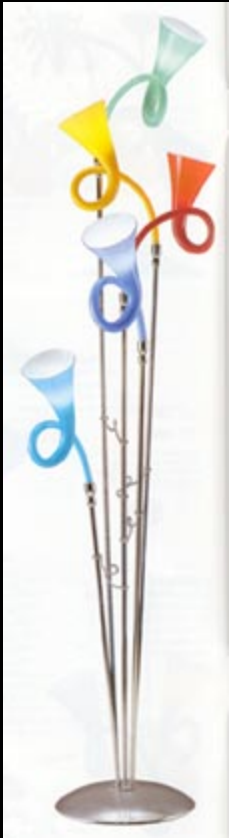


Projector fixtures
<http://www.erco.com/>

Fixtures attached to a electrical raceway.

Luminaire Classifications

Mounting Arrangement - Portable



<http://www.gabrielross.com>



<http://www.lightinitaly.com/>

Fixtures that are used on the floor or desk and are not 'hard wired' into the electrical system.

Luminaire Classifications

Mounting Arrangement - Portable



Floor Lamp
<http://www.gabrielross.com>



Fixtures that are used on the floor or desk and are not 'hard wired' into the electrical system.

Luminaire Classifications

Mounting Arrangement - Portable



Fixtures that are used on the floor or desk and are not 'hard wired' into the electrical system.

Luminaire Classifications

Mounting Arrangement - Sconce

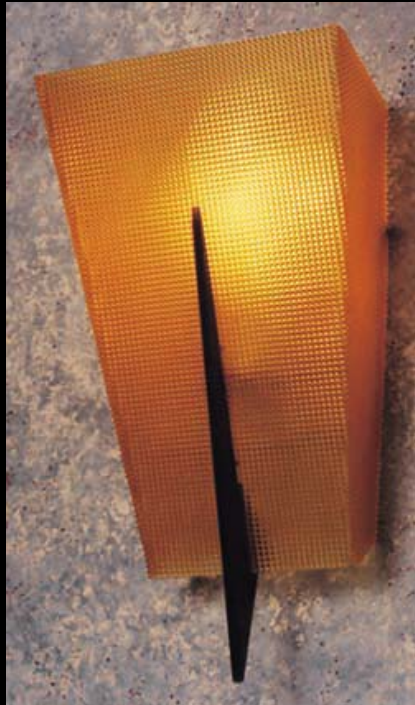


Mounted directly on the wall or column.

<http://www.spilighting.com/>

Luminaire Classifications

Mounting Arrangement - Sconce



<http://www.louispoulsen.com>

<http://www.donovanlighting.com/>

Accent lighting mounted directly on the wall or column.

Luminaire Classifications

Light Distribution

Direct

Semi-Direct

Direct Indirect

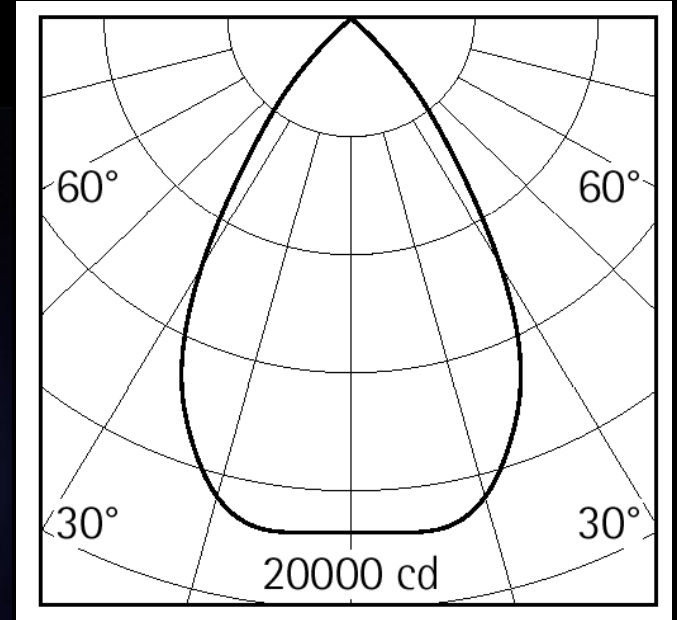
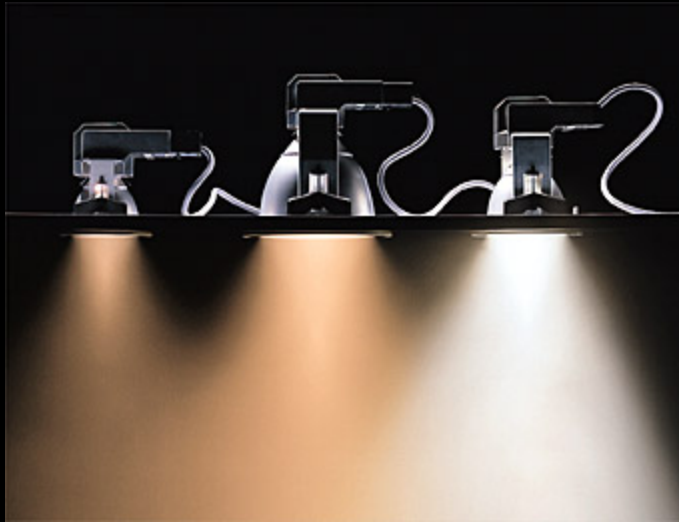
Indirect

Semi-Indirect

General Diffuse

Luminaire Classifications

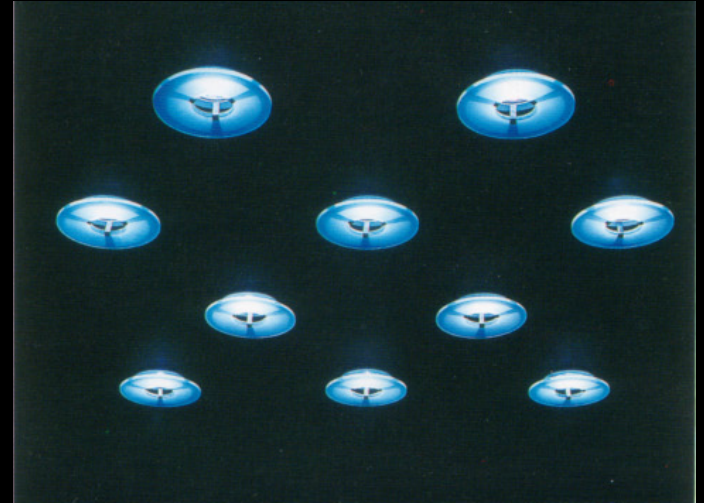
Light Distribution - Direct



100%-90% Down 0 ö 10% Up

Luminaire Classifications

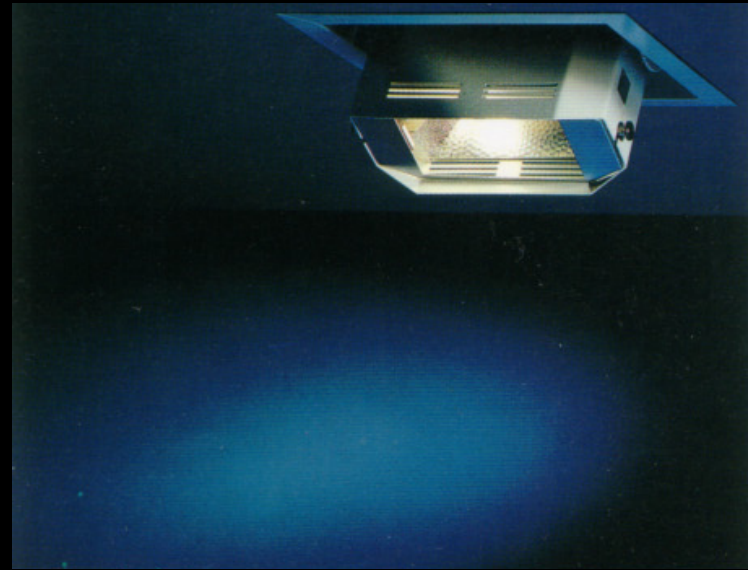
Light Distribution - Direct



100%-90% Down 0 - 10% Up

Luminaire Classifications

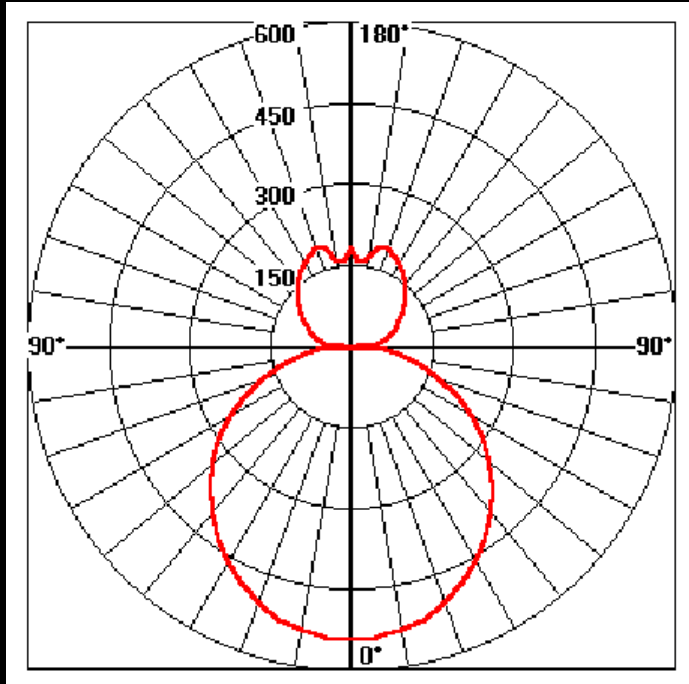
Light Distribution - Direct Adjustable



100%-90% Down 0 - 10% Up

Luminaire Classifications

Light Distribution - Semi-Direct



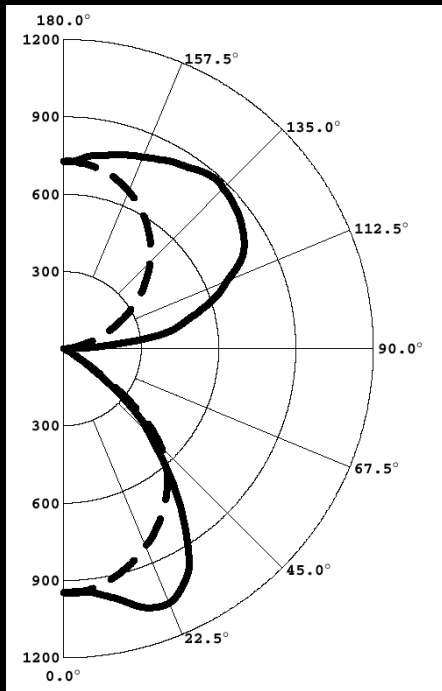
<http://www.louispuulsen.com/>



10%-60% of the light is upward 60% to 90% downward.

Luminaire Classifications

Light Distribution - Direct Indirect

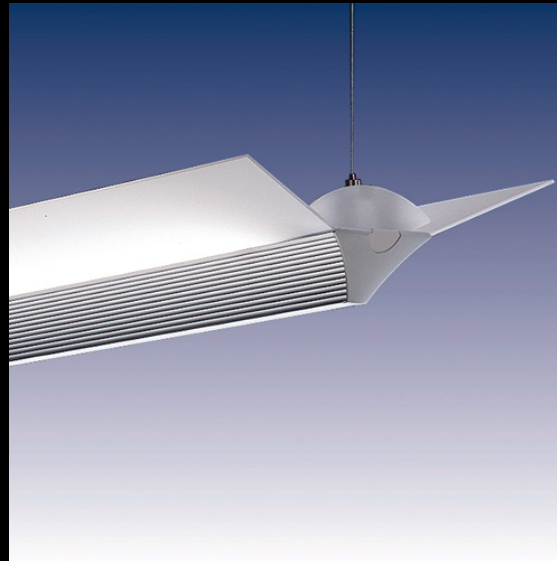
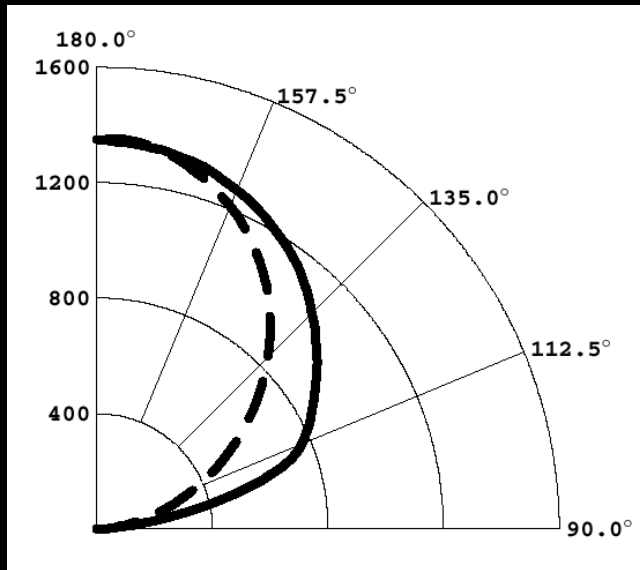


40%-60% of the light is upward 40% to 60% downward.

<http://www.zumtobelstaffusa.com/>

Luminaire Classifications

Light Distribution - Indirect



90%-100% of the light is upward 10% to 0% downward.

Luminaire Classifications

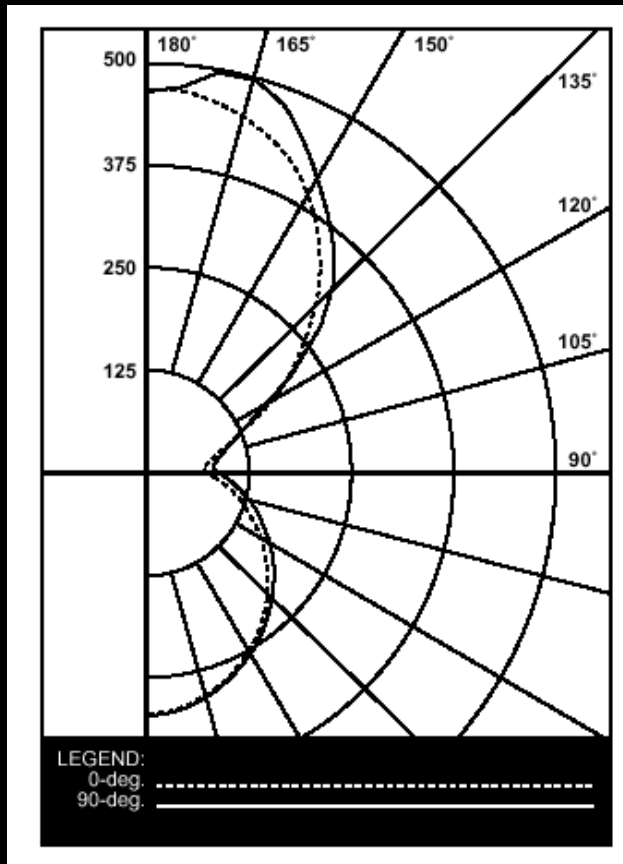
Light Distribution - Semi-Indirect



60%-90% of the light is upward 10% to 40% downward.

Luminaire Classifications

Light Distribution - Semi-Indirect



60%-90% of the light is upward 10% to 40% downward.

<http://www.spilighting.com/>

Luminaire Classifications

Light Distribution - General Diffuse



<http://www.flos.net/>

40%-60% of the light is upward 40% to 60% downward.

Luminaire Classifications

Application

Residential

Commercial

Office

Retail

Hospitality / Restaurant

Institutional

Libraries

Religious

Schools

Museum/Display

Industrial

Luminaire Classifications

Application – Museum, Office



Luminaire Classifications

Application (Commercial - Office)



Luminaire Classifications

Application (Commercial - Retail)



Luminaire Classifications

Application (Commercial - Hospitality)



<http://www.erco.com/>



Luminaire Classifications

Application Institutional Libraries



<http://www.erco.com/>

Luminaire Classifications

Light Control - Religious



<http://www.spilighting.com/>



<http://www.lighting-inc.com/>

Luminaire Classifications

Light Control - Religious



<http://www.erco.com/>

Luminaire Classifications

Application Institutional Schools



<http://www.spilighting.com/>

Luminaire Classifications

Application Institutional Museum/Display



<http://www.erco.com/>

Luminaire Classifications

Application Institutional Museum/Display



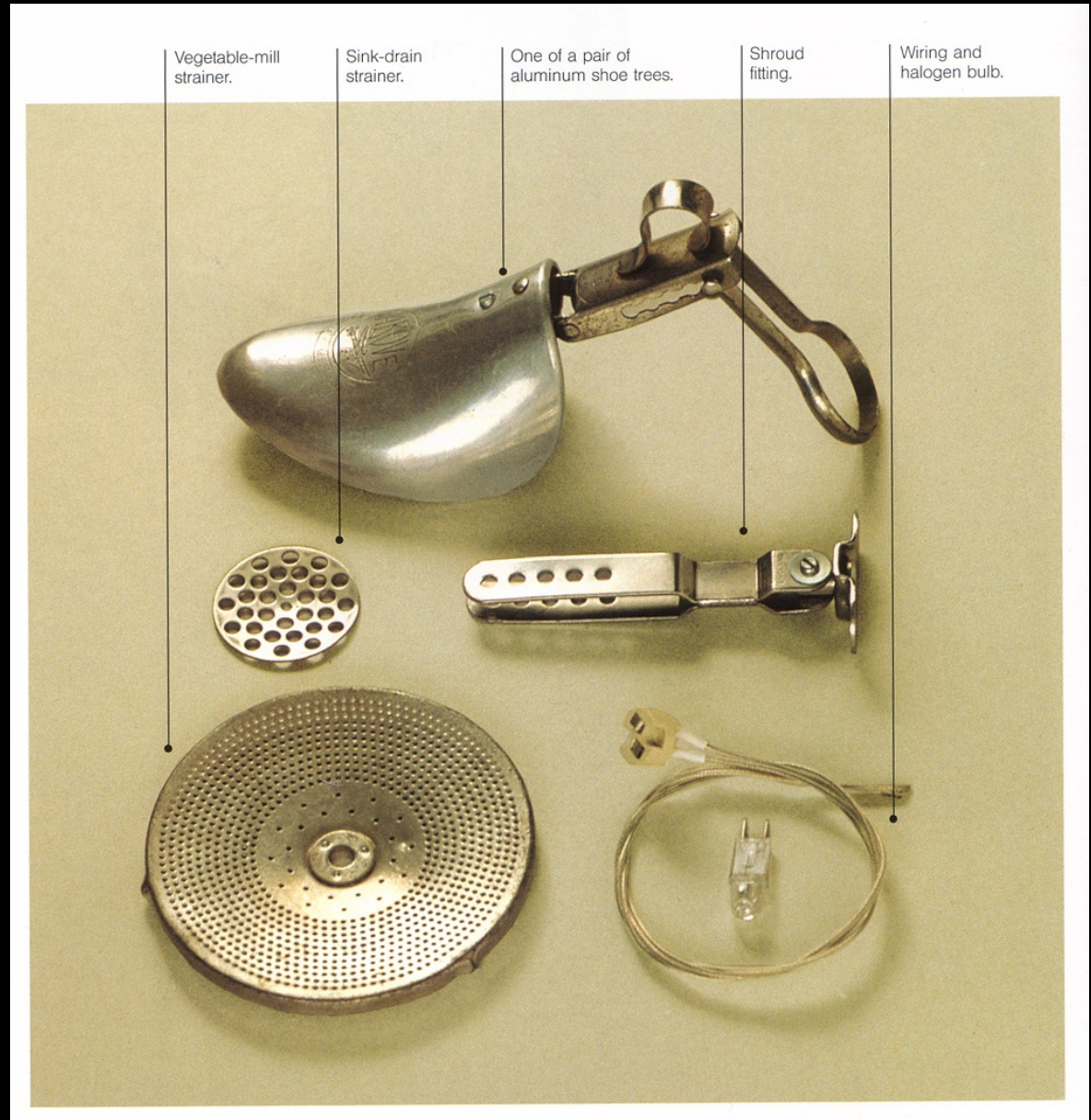
Luminaire Classifications

Application Industrial



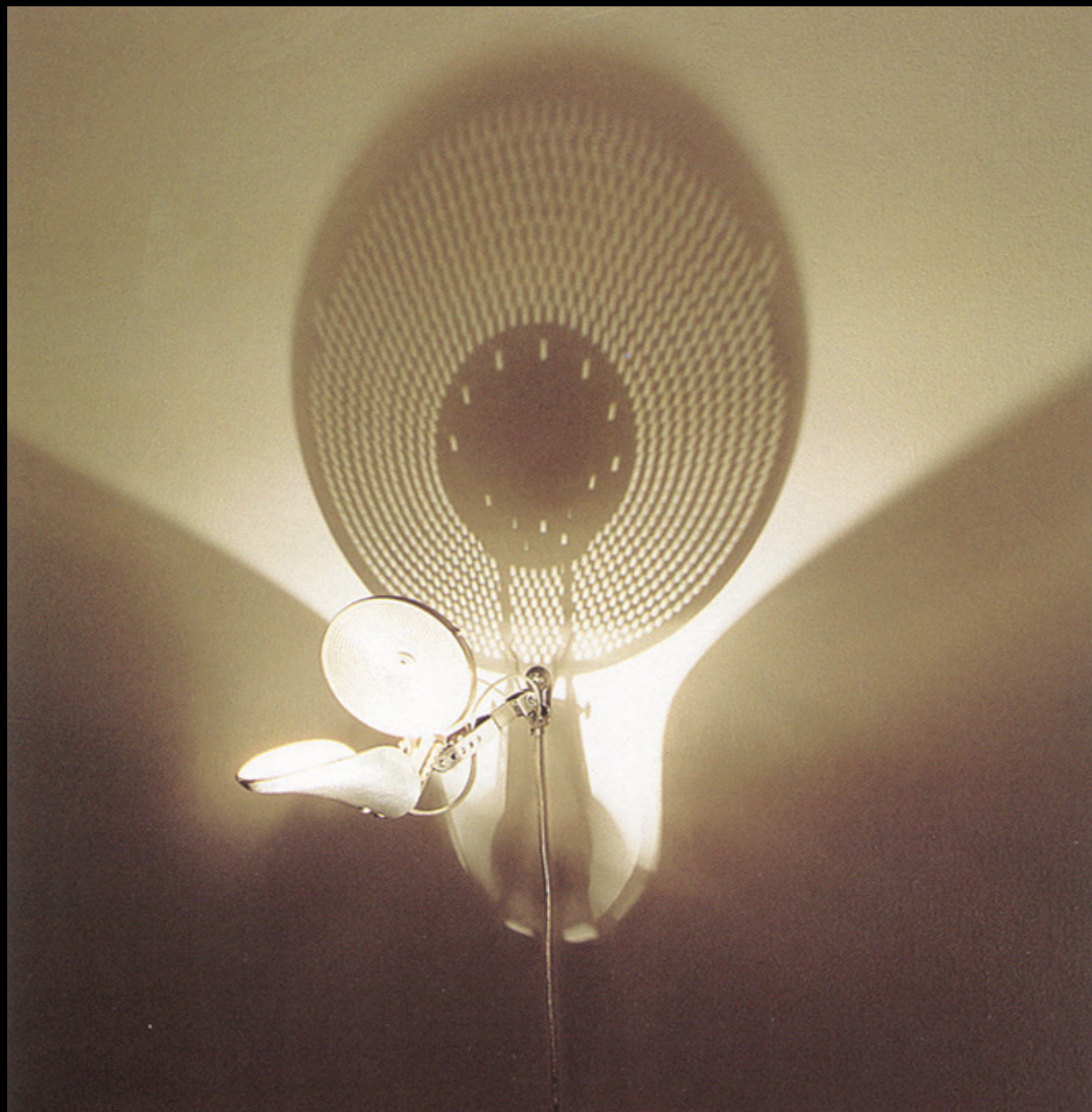
Luminaire Classifications

Innovative
luminaire design



Luminaire Classifications

Innovative
luminaire design



Luminaire Classifications

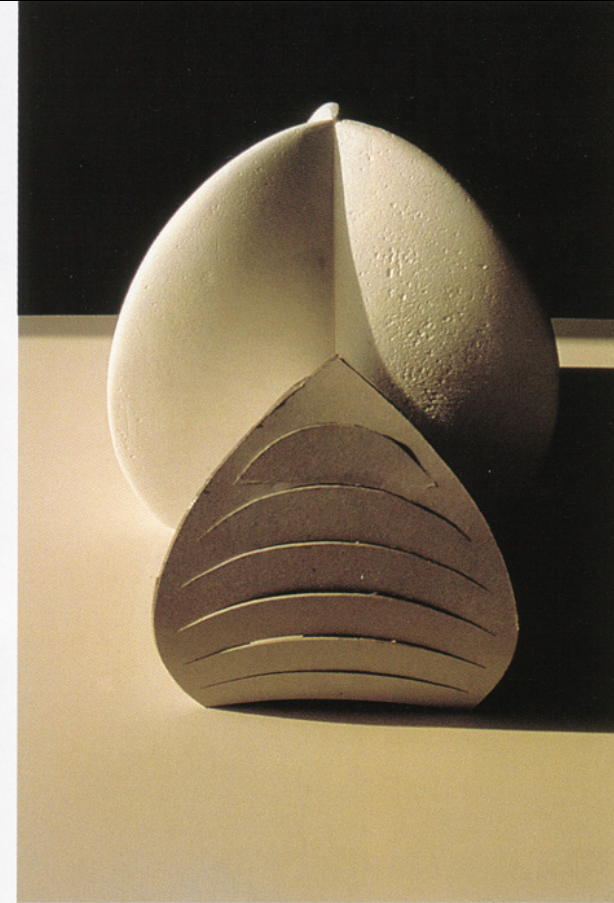
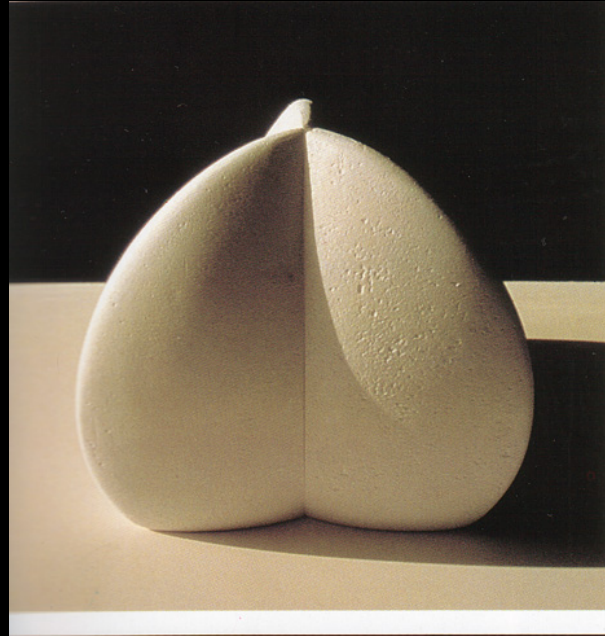
Innovative



Flowering Maple Pod

Luminaire Classifications

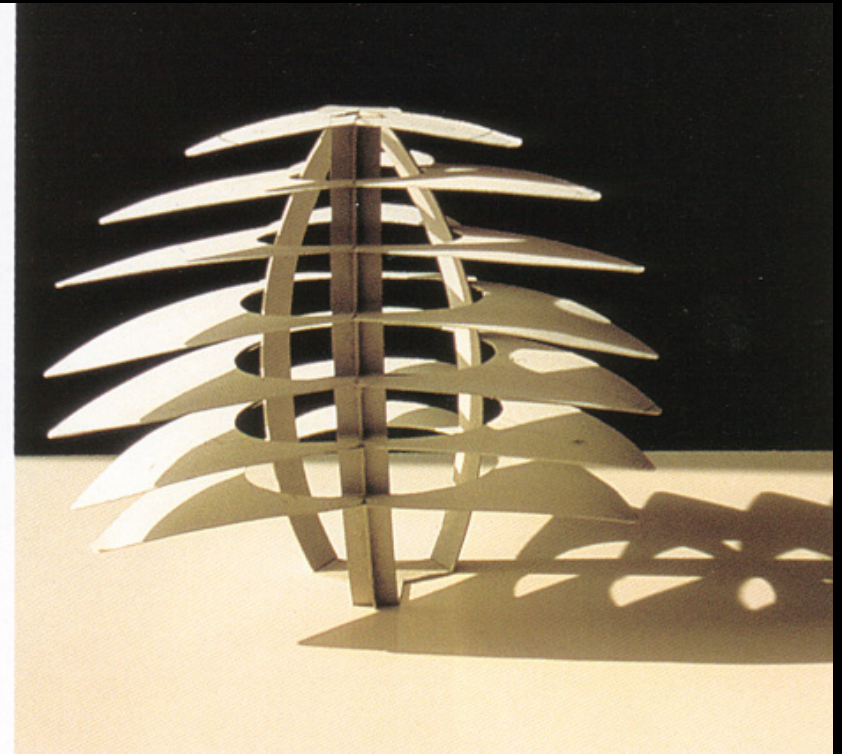
Innovative



Maquettes here inform early developmental stages of the lamp's diffuser. The example in the upper-right corner reveals influences of the manufacturer's famous lamps by Poul Henningsen (1894–1967).

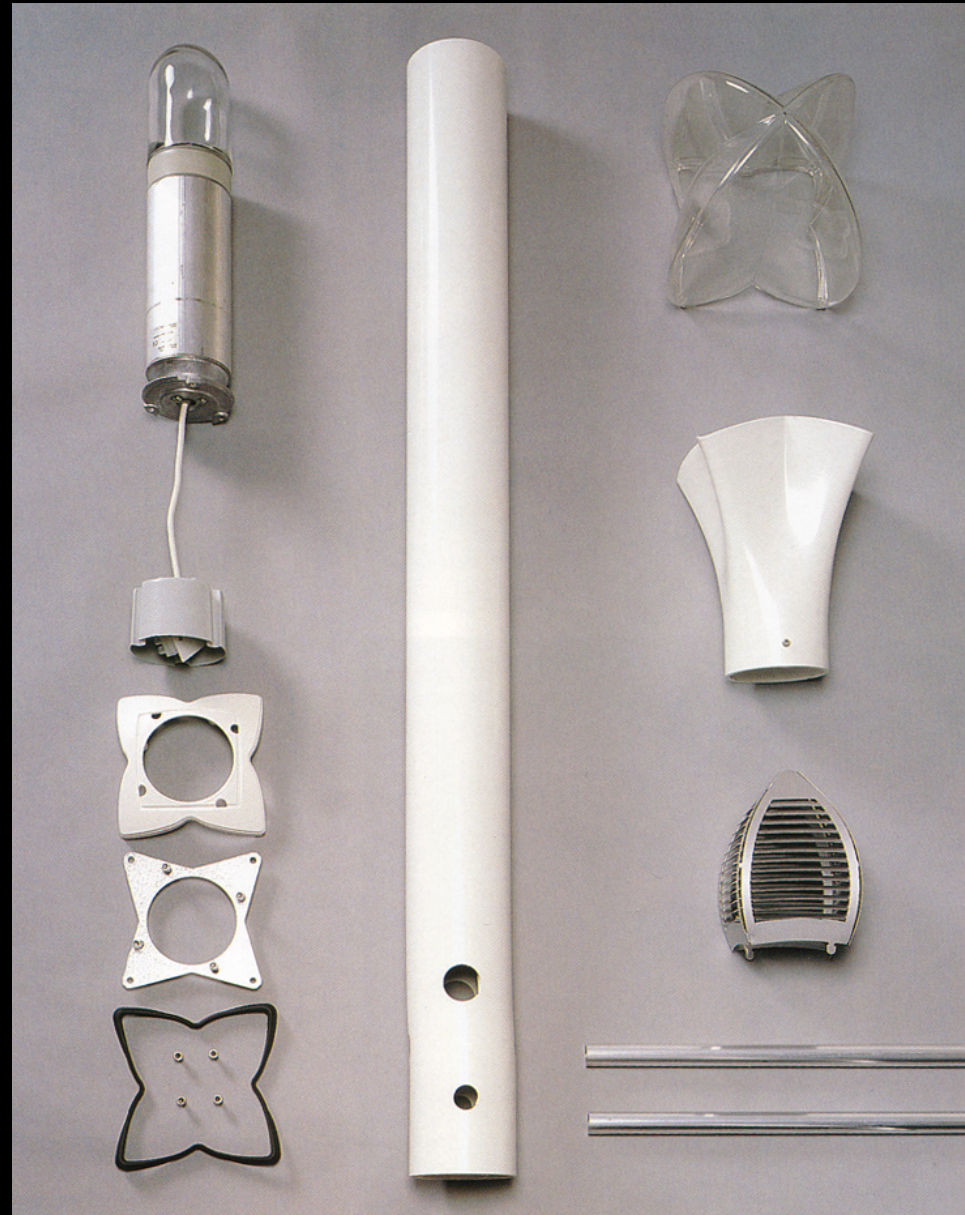
Luminaire Classifications

Innovative



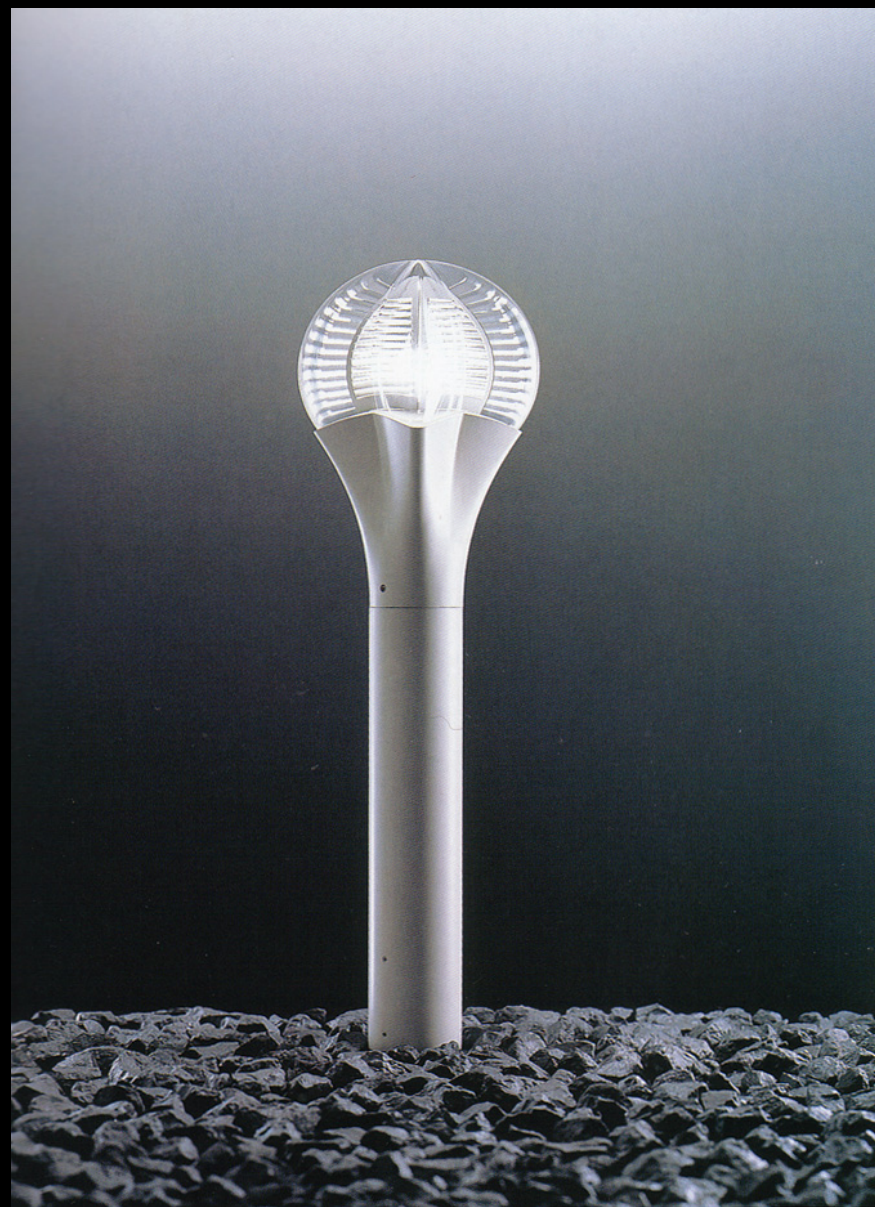
Luminaire Classifications

Innovative
luminaire design



Luminaire Classifications

Innovative



Luminaire Classifications

Innovative

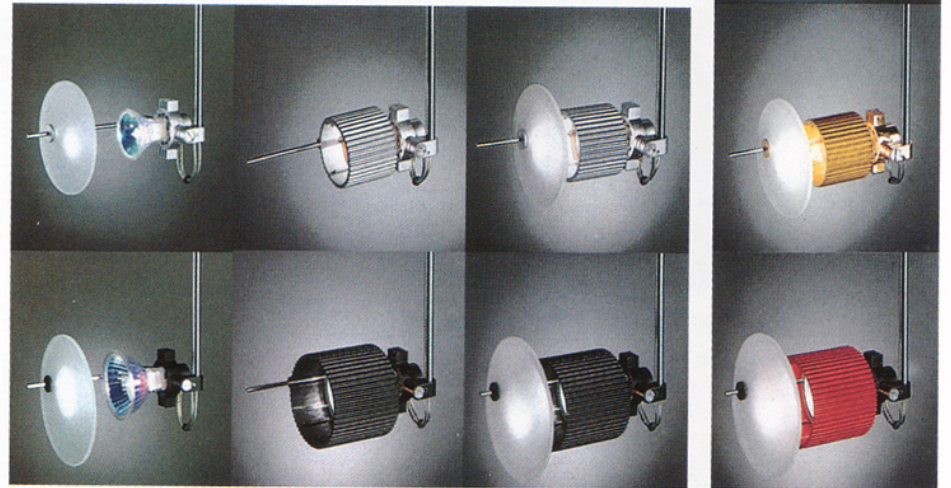
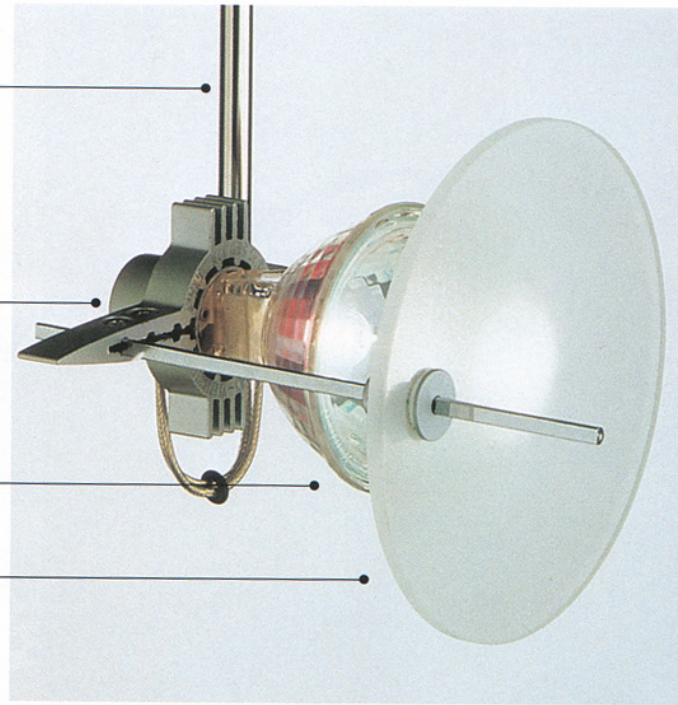
Tubes and rods are in brass.

Sockets in die-cast aluminum can be rotated through 125° around its axis and vertically downward through 35° over the horizontal line.

Dichroic halogen bulb.

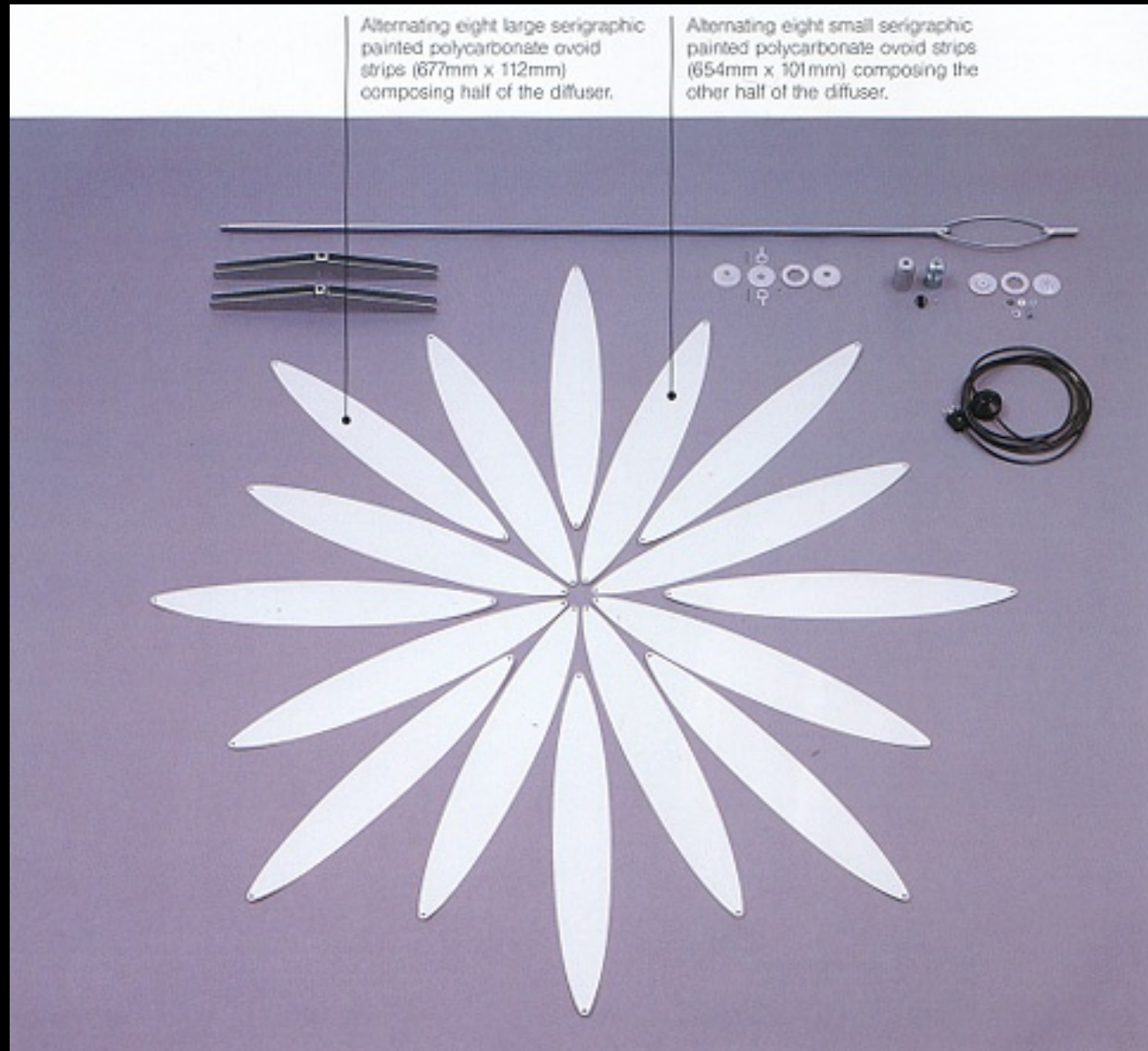
Sheet-cut glass diffuser.

The system may be fitted with or without screens or diffusers.



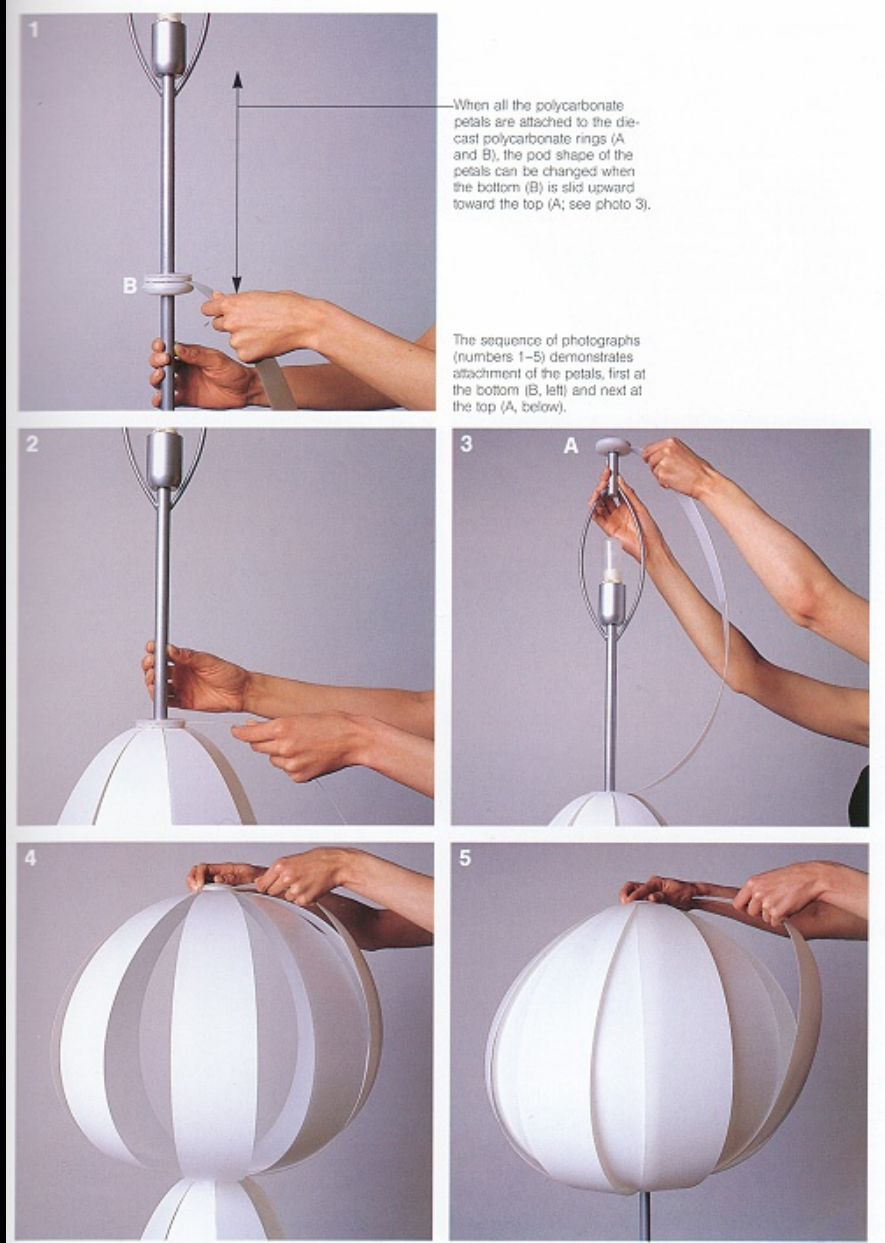
Luminaire Classifications

Innovative



Luminaire Classifications

Innovative



Luminaire Classifications

Light Control

<http://www.erco.com/>

Luminaire Classifications

- Type of Light Source
- Mounting Arrangement
- Light Distribution
- Application

Type of Light Source

- Based off Lamp type
 - Incandescent / Halogen
 - Fluorescent
 - HID
 - Cold Cathode
 - Fiber Optic
 - LED
 - OLED

Mounting Arrangements

- Surface
- Suspended
- Recessed
- Semi-Recessed
- Track
- Portable
- Sconce

Light Distribution

- Direct
- Semi-Direct
- Direct Indirect
- Indirect
- Semi-Indirect
- General Diffuse

Applications

- Residential
- Commercial
- Office
- Retail
- Hospitality / Restaurant
- Institutional
- Libraries
- Religious
- Schools
- Museum/Display
- Industrial

What are the current most exciting lighting technologies?

Corning Glass Fiber Optics

Fiber Optic Lighting in a Swimming Pool

Fiber Optic Interior Spaces

Fiber optic lighting produces very little, almost no, heat.

What are the current most exciting lighting technologies?

LED (Light Emitting Diode)

[LED Lighting of the National Archives](#)

[Optical Glass House by Hiroshi Nakamura, Japan](#)

[LED Lighting in Architecture](#): CBS This Morning Show

[LED Design Ideas for Interiors](#)

What are the current most exciting lighting technologies?

LED Lighting Explained

How LED Works

LED lighting does produce heat, and the larger the number of diodes in a fixture, such as a flashlight, the more heat produced.

What are the current most exciting lighting technologies?

OLED Lighting in Architecture and Interiors

What is OLED?