- Lighting Fixture Solutions
  - Down Lighting: lighting the floor
  - Uplighting: lighting the ceiling
- Architectural Solutions
  - Cove Lighting
  - Back Lighting

# **Direct Downlighting**

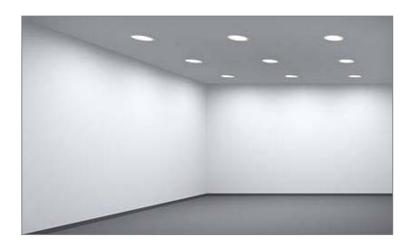
Open Reflector Downlight





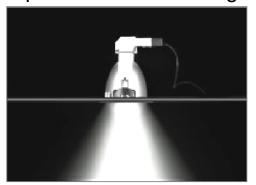
Lensed Downlight





# **Direct Downlighting**

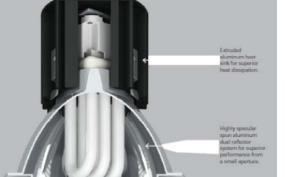
# Open Reflector Downlight



# Lensed Downlight







6310 Downlight

Small 3%" square ptical operture with solite lens

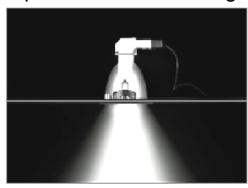


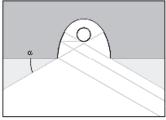




# **Direct Downlighting**

### Open Reflector Downlight





No light is emitted beyond the cut-off



30° cut-off angle



40° cut-off angle



50° cut-off angle

The greater the cut-off angle, the greater the visual comfort provided by the luminaire due to improved glare control.

The greater the cut-off angle, the narrower distribution of light.

The same lighting layout of downlights produces different distributions in the room

- Downlights with a 30° cut-off angle, the distribution is towards vertical surfaces
- Downlights with a 40° cut-off angle gives the best possible compromise between the lighting horizontal surfaces below and vertical surfaces
- Downlights with a 50° cut-off angle achieve a high visual comfort for high rooms and emphasize the objects below – ie accent lighting.

# Manufactures Guides: Beam Guides



# Calculite® Evolution Incandescent Adjustable Accent **C4P20A**

Page 2 of 2

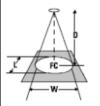
4 1/2" Aperture PAR20 / PAR16 Reflector Trim

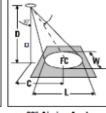
### **Accent Lighting Performance Data**

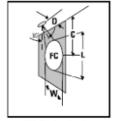
(FC) is initial footcandles at center of beam.Beam length (L) and beam width (W) are to where the candlepower is reduced to 50% of the center beam candlepower.

CBCP is center beam candlepower. (C) is distance to the center of the beam.

Lamp data shown is typical, and is based on bare lamp photometrics. Contact lamp manufacturers for availability and performance.







Lamps (To 50% CBCP)

P Rated Life (Hrs.) 0° Aiming Angle D FC L W

D C FC L

30° Aiming Angle D C FC L W

### PAR16 Halogen Line Voltage Lamps

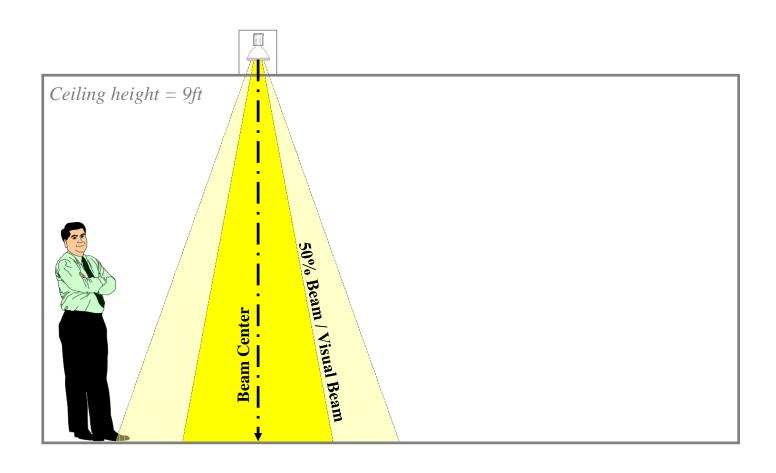
60W PAR16 NSP	Å	5000	2000	6' 8' 10' 12'	139 78 50 35	1.0° 1.4° 1.7° 2.1°	1.0' 1.4' 1.7' 2.1'	5' 7' 9' 11'	2.9° 4.0° 5.2° 6.4°	130 66 40 27	1.2' 1.6' 2.1' 2.6'	1.0° 1.4° 1.8° 2.2°	2' 3' 4' 5'	3.5° 5.2° 6.9° 8.7°	156 69 39 25	1.4° 2.1° 2.9° 3.6°	0.7' 1.0' 1.4' 1.7'
60W PAR16 NFL	30°	1300	2000	3' 5' 7' 9'	144 52 27 16	1.6' 2.7' 3.8' 4.8'	1.6' 2.7' 3.8' 4.8'	3' 5' 7' 9'	1.7' 2.9' 4.0' 5.2'	94 34 17 10	2.2' 3.7' 5.1' 6.6'	1.9' 3.1' 4.3' 5.6'	1' 2' 3' 4'	1.7' 3.5' 5.2' 6.9'	163 41 18 10	2.7' 5.5' 8.2' 10.9'	1.1° 2.1° 3.2° 4.3°
75W PAR16 NSP		7500	2000	7' 10' 13' 16'	153 75 44 29	1.2' 1.7' 2.3' 2.6'	1.2' 1.7' 2.3' 2.6'	6' 9' 12' 15'	3.5° 5.2° 6.9° 8.7°	135 60 34 22	1.4' 2.1' 2.8' 3.5'	1.2' 1.8' 2.4' 3.0'	2' 3' 4' 5'	3.5' 5.2' 6.9' 8.7'	234 104 59 38	1.4° 2.1° 2.9° 3.6°	0.7' 1.0' 1.4' 1.7'
75W PAR16 NFL	30.	1900	2000	4' 6' 8' 10'	119 53 30 19	2.1' 3.2' 4.3' 5.4'	2.1' 3.2' 4.3' 5.4'	3' 5' 7' 9'	1.7' 2.9' 4.0' 5.2'	137 49 25 15	2.2' 3.7' 5.1' 6.6'	1.9° 3.1° 4.3° 5.6°	1' 2' 3' 4'	1.7' 3.5' 5.2' 6.9'	238 59 26 15	2.7' 5.5' 8.2' 10.9'	1.1° 2.1° 3.2° 4.3°

### PAR20 Halogen Line Voltage Lamps

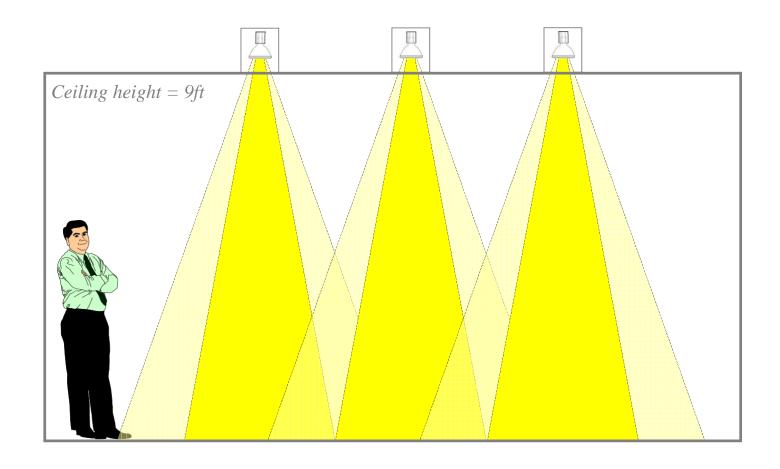
		0p															
35W PAR20	Λ	3000	2500	6' 8' 10'	83 47 30	0.8° 1.1° 1.4°	0.8' 1.1' 1.4'	5' 7' 9'	2.9° 4.0° 5.2°	78 40 24	0.9' 1.3' 1.7'	0.8° 1.1° 1.5°	2' 3' 4'	3.5° 5.2° 6.9°	94 42 23	1.1' 1.7' 2.3'	0.6° 0.8° 1.1°
NSP	8"			12	21	1.7	1.7	11"	6.4	16	2.1	1.8	5	8.7	15	2.8	1.4
	$\overline{}$			3' 5'	100 36	1,6° 2.7°	1.6' 2.7'	3' 5'	1.7° 2.9°	65 23	2.2' 3.7'	1.9° 3.1°	1'	1.7° 3.5°	113 28	2.7° 5.5°	1.1° 2.1°



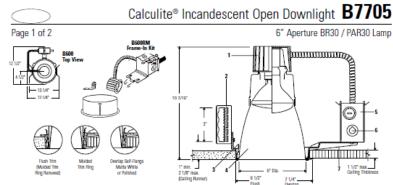
# Beam Study



# Beam Study



# Lighting a Horizontal Surface Downlight Spacing Criteria



### B600 Ceiling Cutout: 6 9/16" Dis. B600 RM Ceiling Cutout: 6 1/2" Dia

Reflector Tri	im	Frame-In Kit	Lamp
B7705CLW B7705CLP B7705CL	Specular Clear finish with white flange Specular Clear finish with polished flange Specular Clear finish with molded trim ring (flangeless)	B600	PAR30 75W (for short neck PAR30 use socket extender #1968) BR30 85W
B7705	Add suffix for other finishes (see options)	Remodeler Frame-In Kit	Lamp
		B600RM (For use in existing ceilings	Same as 9600
		with 3/8" min. to 2" max thickness.)	

### Features

- 1. Socket Cup: Die-cast aluminum cup effectively dissipates heat and assures lamps maintain proper optical alignment to reflector. Snaps onto reflector neck for easy tool-less installation. Contains medium base porcelain socket, nickel plated screw shell wired with No 18 SE1 leads to J-Rox
- 2. Mounting Brackets: Adjusts vertically from inside of foture. Durable 16 struction. Use with standard 3/4" or 1 1/2" lathing channels (by others), EMT pipe (by others), or Lightolier accessory mounting bars.
- 3. Retaining Springs: Precision tooled springs secure reflector to mounting frame for quick tool-less installation.
- 4. Reflector: 16 ga. Specular Alzak<sup>a</sup> aluminum, 45° visual cutoff to lamp and lamp image. Available with white or polished flange, or with removable
- white molded trim ring (field paintable).

  5. Junction Box: 14 ga. steel, 4" x 2" x 2" box allows inspection from below eliminating need for access from above.
- 6. Thermal Protector: Meets NEC and UL requirements. Insulation must be kept 3" away from fixture sides and wiring compartments and must not be placed above fixture in a manner which will entrap heat.
- 7. Mounting Frame: Die-cast aluminum suitable for dry or plaster ceilings Provides flangeless trip in plaster ceiling.

### Other Reflector Finish Options

Comfort Clear Diffuse Specular Gold Flange Options

Polished Flange

### Options and Accessories

### Options and Accessories (continued)

T-Bar Anchor Clips 1956 (set of 4, for 1950 & 1951 bars) Wood Joist Mtg. Bars 7994 (see MBA specification sheet) Sloped Ceiling Adapter 7920 (see SCA specification sheet) **Existing Ceiling Clips** 7998 (set of 2) Step Down Transformer 1968 (for short neck PAR30 Lamps) LC (add suffix to Frame-in Kit)

### Electrical

B600 UL Listed for through branch circuit wiring with max. of (8) No. 12 or 60°C supply conductors for end of run.

B600RM UL Listed for No. 12 AWG 60°C supply conductors.

UL Listed for damp locations), LB.E.W.

# Lamp(s):

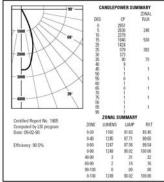
Lightolier a Genlyte Thomas Company www.lightolier.com 631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710 We reserve the right to change details of design, materials and finish © 2002 Genlyte Thomas Group LLC (Lightplier Division) • A0902

### Calculite® Incandescent Open Downlight **B7705**

Page 2 of 2 B7705CL PAR30 75W FL

0

6" Aperture BR30 / PAR30 Lamp



		80			70			50 30				10			0	
	50	30	10	50	30	51	NALL 50	REFI 30	ECTA 10	NCE   50	30	10	50	30	10	0
Room Cavity Ratio	1.11 1.07 1.03 39 36 30 30 30	1.10 1.04 1.00 96 92 90 97 84	1.00 1.02 57 54 90 17 34 12	1.09 1.05 1.01 99 95 93 90 12	1.00 1.00 99 96 92 98 98 98 98 98 98	1.06 1.01 97 93 39 39 34 81	1,05 1,02 99 97 94 91 18	1.04 1.00 97 94 91 39 38	100 95 92 30 36 34 31	1,02 99 97 95 92 90 38	1,01 98 93 90 88 83 83	1.00 96 94 91 91 86 83	第 97 第 93 91 88 37 86	96 94 91 89 87 84 82	57 95 92 90 117 115 113	96 91 91 98 91 98 91 91 92 79
9	.85 .83	.81 .79	.79 .76	.14 22	.79	79	JA JZ	.81 78	78	.33 .31	.70	.76 .76	22 31	.90 .76	78 75	77

Job Information Type:

Lightolier a Genlyte Thomas Company www.lightolier.com 631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710 We reserve the right to charge details of design, materials and finish.

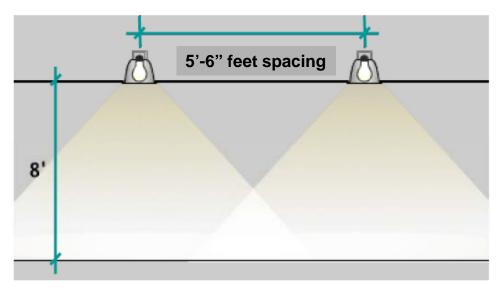
© 2002 Genlyte Thomas Group LLC (Lightolier Division) • A0902

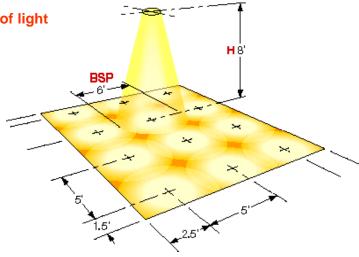
# Lighting a Horizontal Surface Downlight Spacing Criteria

Luminaire manufacturers provide spacing criteria (SC) or mounting height ratios (S/MH), for specific light fixtures with direct lighting distribution. These light fixtures include downlights, troffers, and high and low-bay light fixtures. These ratios are used to calculate the maximum recommended installation spacing to obtain an even pattern of light on the surface below the light fixtures. SC ratios help ensure that a space is evenly lighted by slightly overlapping the light distribution from each light fixture.

SC typically range from 0.9 to 1.7, but can be as low as 0.5 or higher than 2.

SC x Mounting Height = recommended spacing for "even" pattern of light



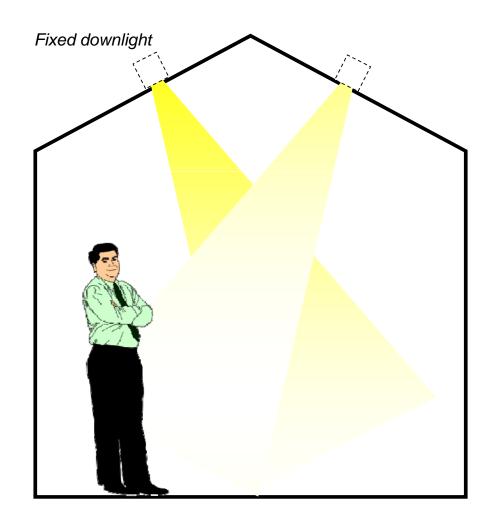


Example for recessed downlights:

If a manufacturer's **SC = 0.7**, and downlights are mounted in an 8 ft. ceiling.....

then the recommended maximum spacing between downlights will be **0.7 x 8.0 ft = 5.6 ft** (5'-6" ft.)

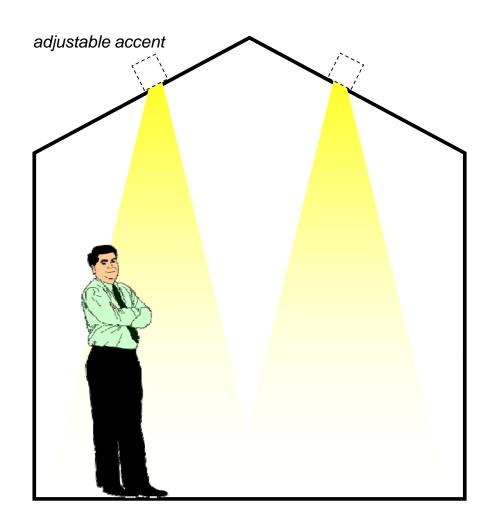
# Lighting a Horizontal Surface Sloped Ceiling





fixed downlight

# Lighting a Horizontal Surface Sloped Ceiling





adjustable accent



sloped ceiling housing

# **Downlighting Housings**



### Baffle

Use our most popular residential trim to minimize glare in General, Accent & Task lighting applications. Available in black and white finishes.



### Open

The most economical choice for recessed downlighting. Available in white and polished brass finishes.



### Reflector

Maximizes light output. Available in clear and gold specular finishes. For General, Accent and Task applications in residential and commercial environments.



### Eyeball

Provides adjustable/directional lighting. Available in white and polished brass finishes. Suitable for Accent, Task and Wall Wash applications.



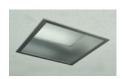
Do you

have

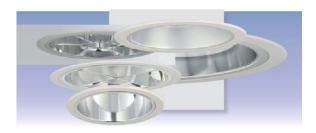
above ceiling access?

### Lens

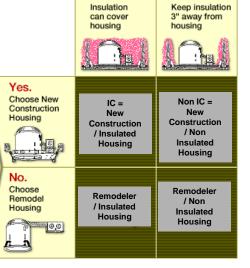
Diffuses light and shields lamp. Available in a white finish. Ideal for closets, bathrooms and covered porches.







# Will housing be in direct contact with insulation?



Yes.



New Construction Insulated Housing



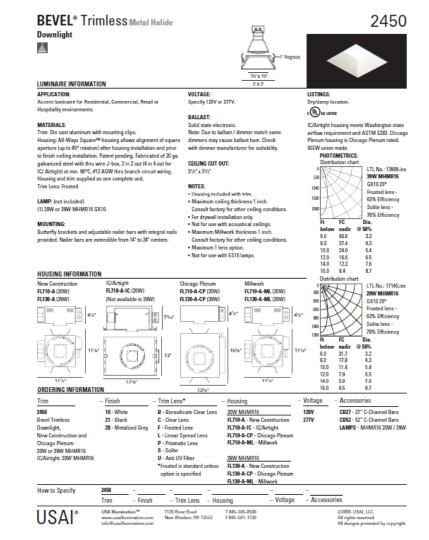
New Construction
Non - Insulated Housing

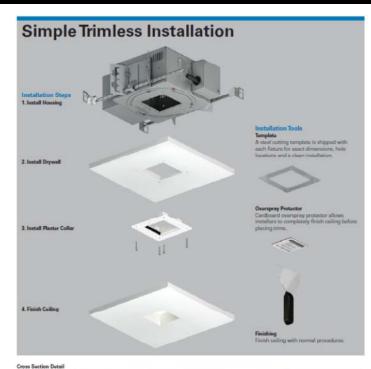


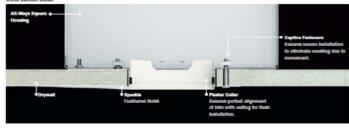
Remodeler Housing Insulated Housing

Remodeler Housing Non - Insulated Housing

# Lighting a Horizontal Surface Downlighting Housings

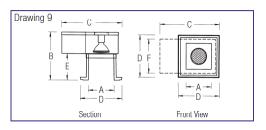








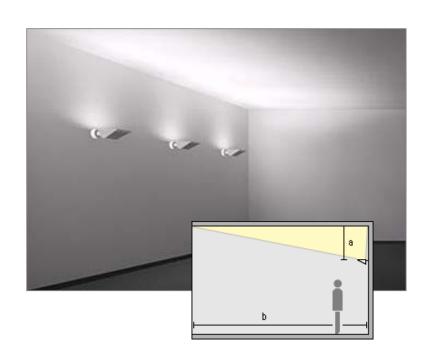


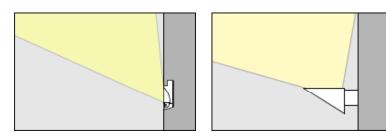


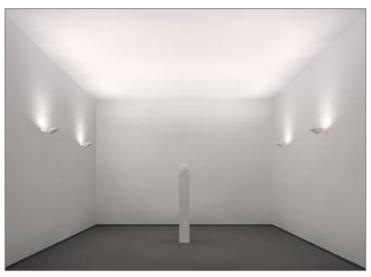


Model No. **	Drawing	Α	В	С	D	Е	F	Lamp
150PAR-HITC (S or R)-6-IA	9	6″	11-1/8″	14-3/8"	9-3/4"	6-1/8"	8-1/8"	Max 50 w Par30

# Lighting a Horizontal Surface Indirect Uplighting







Ceiling lighting requires sufficient room height to achieve even light distribution. Uplights should be mounted above eye-level to avoid direct glare. The ceiling offset depends on the degree of evenness required.

# Lighting a Horizontal Surface Indirect Uplighting

### **Architectural Uplight**

Interior architectural uplighting is available in a wide variety of indirect beam patterns. Fixtures are mounted so as to locate the lamp above sight lines; thus, the luminaires unobtrusively enhance a space while maintaining glare-free visual comfort.

### Beam Patterns (based on ITL photometric):











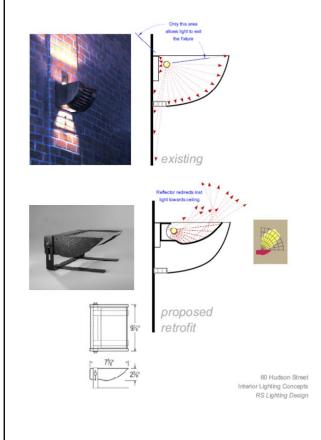
Click on the beam pattern icon that corresponds to the section you want to view or download.

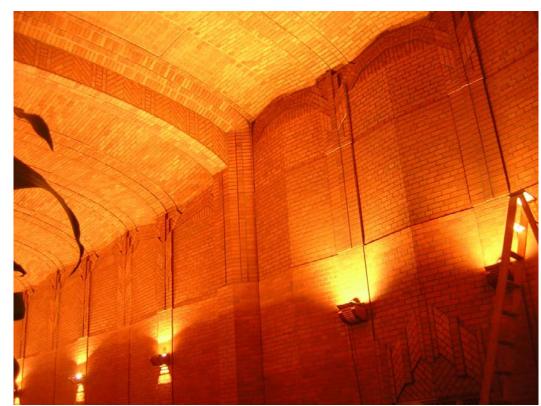












# Lighting a Horizontal Surface Indirect Uplighting



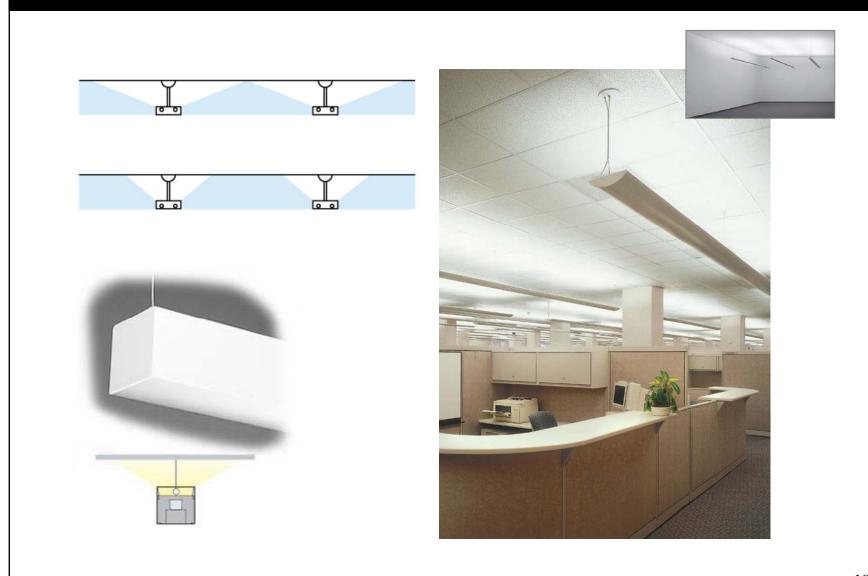








# Lighting a Horizontal Surface Linear Uplighting



# Lighting a Horizontal Surface Linear Uplighting



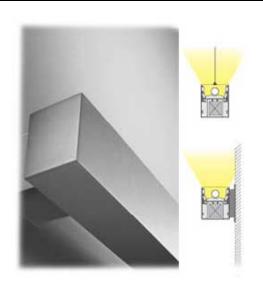








# Lighting a Horizontal Surface Linear Uplighting



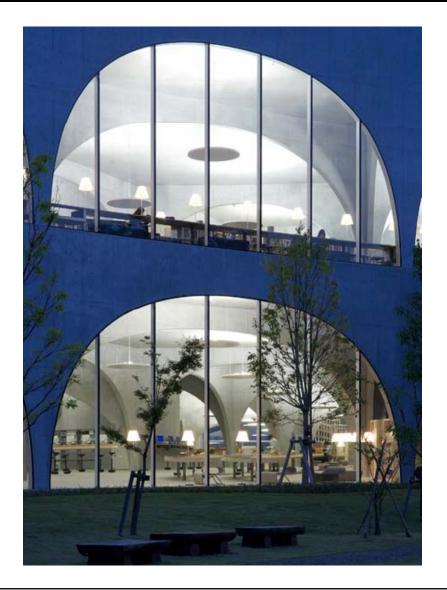










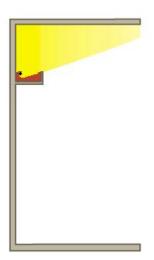




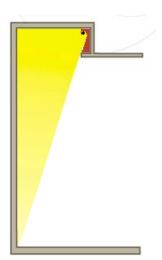








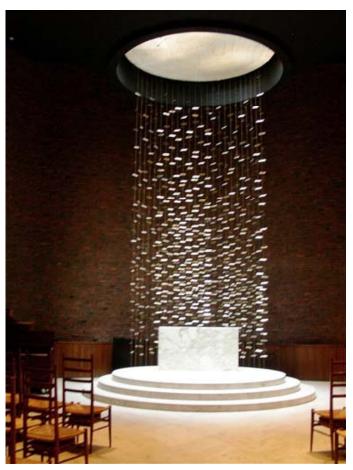
Light washes and brightens the ceiling while making the room appear larger.



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

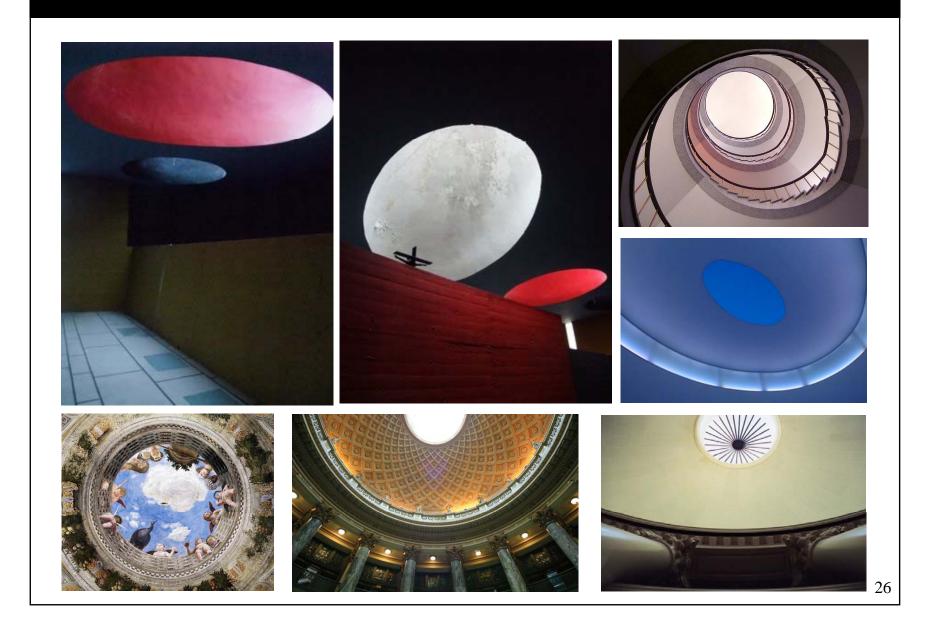


# Lighting a Horizontal Surface Coves – historical reference





Coves - historical reference



# Coves





# Coves

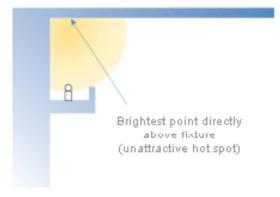




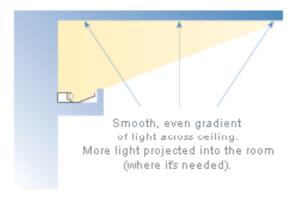
Martin Residence Architects: Briggs Knowles

Briggs and Knowles based their design of the oculus on traditional Victorian skylights but tweaked it to fit a more modern sensibility and outfitted it with fluorescent tubing to recreate the effect in the evening.

# Coves







Cove Channel

Series 1530 Series 1540 Series 1545 Series 1550 MINI-STAGGERED CHANNEL® T8 DOUBLE SIDE MINI-STRIP® T8 RIGHT ANGLE MINI-STRIP® T8 SIDE MINI-STRIP® T8 READ MORE READ MORE READ MORE READ MORE Series 1575 Series 1600 Series 1610 Series 1620

MICRO-CHANNEL® T5

Bare Lamp Channels

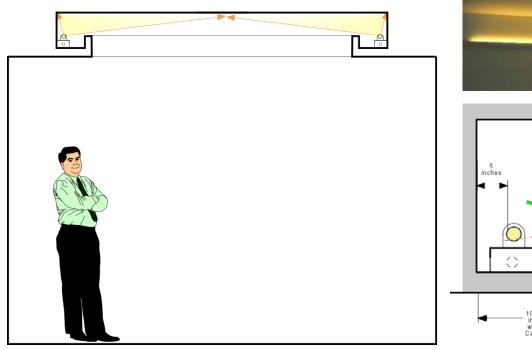
MULTI SIDE MINI-STRIP® T8

MICRO-STRIP® T5

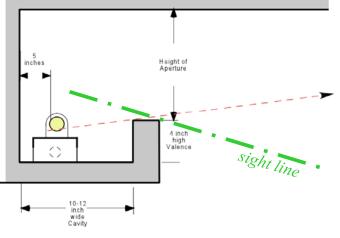
MICRO-STAGGERED CHANNEL® T5

3" Stagger

# Coves

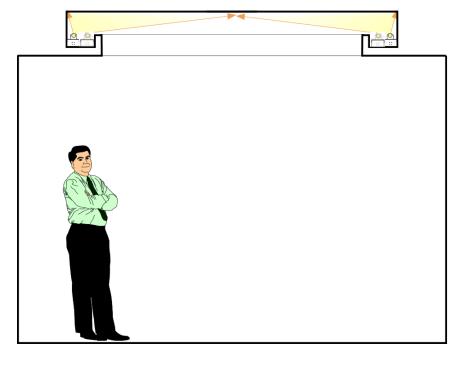


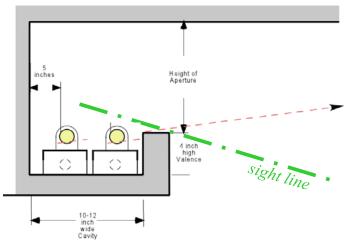




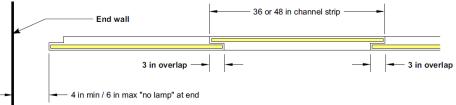
Single Bare Lamp Channel

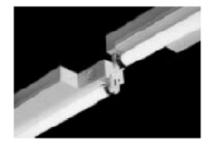
# Coves

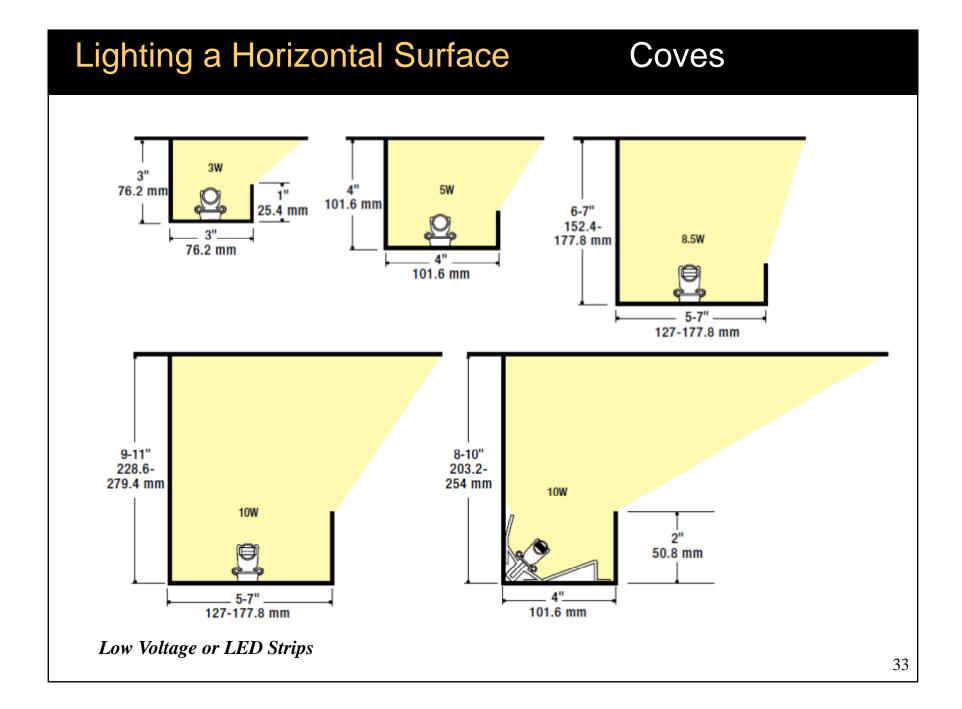




Single Bare Lamp Staggered Channel







# Coves

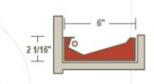


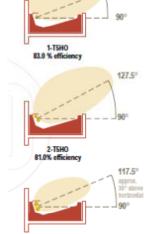












Compact Fluorescent 74.5.% efficiency

Peak Output Angle

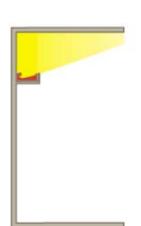
Cove-30

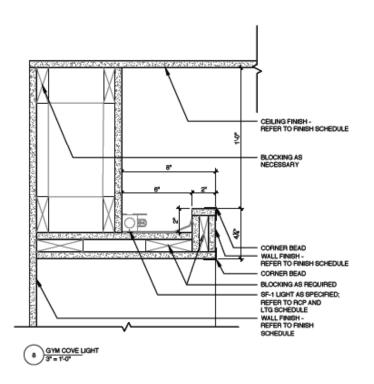
1-T8 79.5.% efficiency

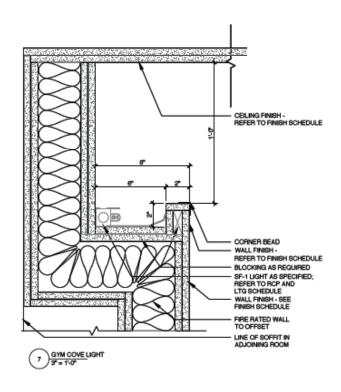
2-T8 63.2% efficiency

122.5





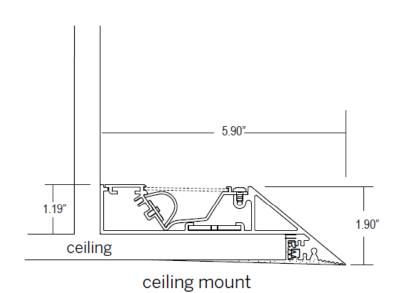


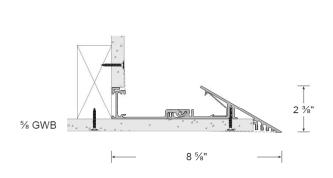








































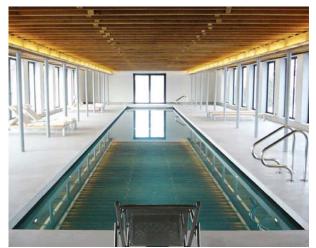


















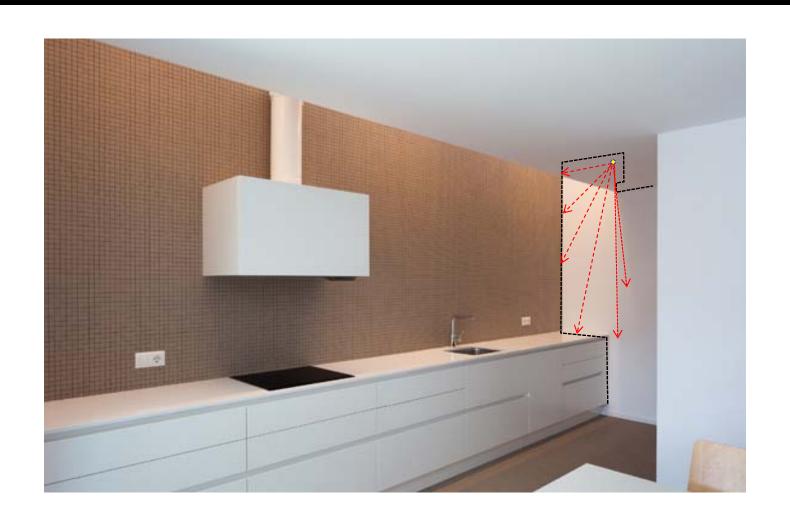




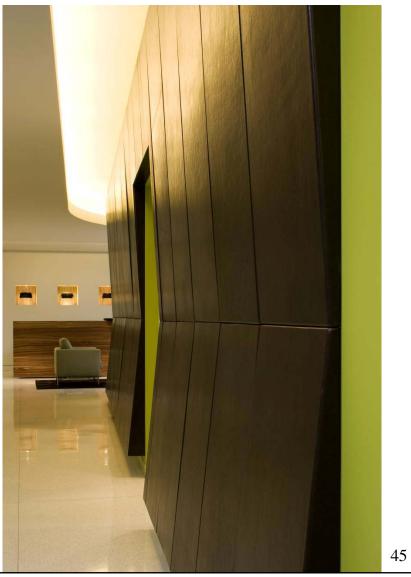


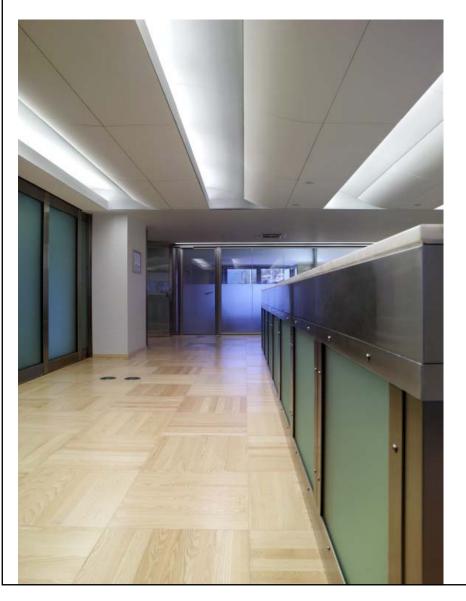


#### Reverse Coves

















#### Cove above millwork







Wall Section - Option C

