# 0-45˚ accent – pinhole
# id ®

CMH



Patent Pending

**id** The Intelligent Downlight®

**FOCAL POINT®**

## features

Trims available in Overlap flange or Flush mud-in for a seamless appearance.

**Gloves Off™** hot aiming made simple with gear drive for both 45° vertical and 363° horizontal adjustment; Self locking.

**Auto Memory** remembers original lamp position after relamping. Lenses are independent of lamp, and remain undisturbed during relamping.

**Perfect Fit™** installation process provides seamless integration in plaster, drywall and acoustical tiles, while maintaining optics in any ceiling thickness.

Adjustment mechanism provides for:
- easy relamping
- locking of both vertical and horizontal aiming
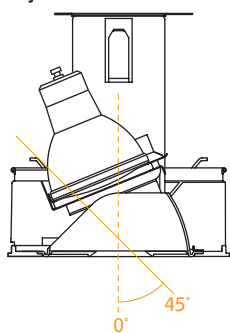- lowers for easy lamp and lens access.

**Smart Lock™** ring allows quick removal and re–assembly of trim components for field painting.

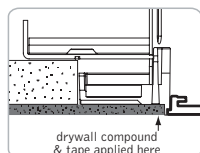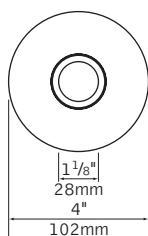Standard white finish is field paintable.

Interchangeable lamp and trim mechanisms allow for maximum flexibility, even after luminaire is installed.

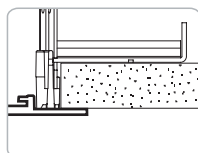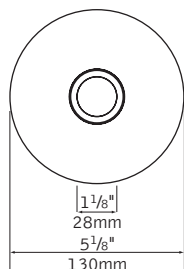## trim assembly

### trim with adjustment mechanism



45°
0°

### flush trim
(drywall only)



1 1/8"
28mm
4"
102mm



drywall compound & tape applied here

ceiling cutout dimensions: 6 3/16"

### overlap trim



1 1/8"
28mm
5 1/8"
130mm



ceiling cutout dimensions: 4 11/16"
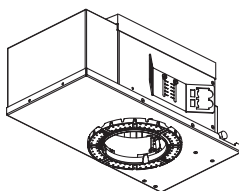
### trim option



trim without black bevel

### lens accessories



hex louver | linear | prismatic | sand blasted

## housing

### T/IC
14" x 7.625" x 6"h



## performance

Accent Pinhole with Black Bevel
CMH20MR16/830/SP12
2171 cd @ 30° (30° tilt)



**everGreen** idea™

Use 20W Ceramic Metal Halide in place of 50W Halogen.

Visit focalpointlights.com for complete photometric data.

july 2009

## housing specifications

### lamp

Ceramic Metal Halide 20W or 39W MR16 Lamp provides a crisp white light source, 3000K and 80CRI, with UV stop. It is a protected lamp for use in open fixture designs.
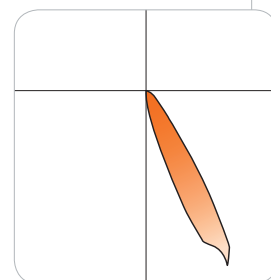
### construction

**(T)** Thermally protected housing for new construction applications without direct contact with insulation. Unit is enclosed in a 20ga black painted CRS housing, which eliminates stray light into the plenum,. on a 20Ga CRS frame. T housing ships standard with butterfly brackets which mount to ½ emt or channel, vertically adjusts 2 inches. Bar hangers are an option and must be specified when ordering thermally protected housing. Transformer is accessible from below ceiling. Unit may be relamped from above. Fixture will not exceed 7.5 lbs.

**(IC)** Thermally protected for Insulated Ceiling housing for new construction applications with direct insulation contact. Unit is enclosed in a 20ga black painted CRS housing, which eliminates stray light into the plenum,. on a 20Ga CRS frame. IC housing ships standard with butterfly brackets which mount to ½ emt or channel, vertically adjusts 2 inches. Bar hangers are an option and must be specified when ordering thermally protected housing. Transformer is accessible from below ceiling. Unit may be relamped from above. Fixture will not exceed 7.5 lbs.

### electrical

Ceramic Socket GX10 for Metal Halide lamp, with permanently joined socket wires. Lamp is held by twist and lock 5KVA socket, ensuring simple lamp insertion and removal.

Large junction box 2x4x5.5" with ½" and ¾" pryouts. UL listed for thru branch wiring, 4#12 90°C conductors.

Thermally isolated electronic ballast, replaceable from below, is mounted outside of the housing to ensure cool operation. Wiring compartment mounting provides additional thermal break from the lamp. 120 or 277V, M130 or M156 ANSI spec ballast consumes 26 or 45 watts and provides >90% PF, 20% THD and end of life shut down circuitry. 39W dimming ballast is available.

### installation

Adjustable throat allows infinite adjustment for ½" to 1⅝" thick ceilings. Shipped in ½" ceiling position. For thicker ceilings consult factory.

Ceiling thickness adjustment sleeve locks with supplied ⁵⁄₆₄" hex driver.

Sleeve allows fine tuning of the housing for a perfect fit. Comes with laser/string alignment guides.

Housing ships with dust cover.

## trim specifications

### aesthetics

Diminutive black knife edge baffle minimizes brightness. Truncated Specular black reflector cone above ensures glare free optics. Reflector is .040" spun aluminum. Matte white finish may be used as a primer coat for field painting. Smart Lock™ ring allows disassembly for custom field painting.

### adjustment mechanism

Auto Memory for relamping, lamp returns to preset aiming position.

Mechanism is matte black finish and holds lamp and lenses independently.

Hot aiming with Philips screwdriver allows for 45° vertical tilt, and 363° rotation and locks into position. Mechanism pulls down for quick and easy relamping. Vertical angle and horizontal rotation indicators display positioning.

Tempered soft focus lens supplied as standard.

Lens tray can hold up to two accessories, up to ¼" thick. Lenses remain undisturbed during relamping.

### optics

50° cutoff to the lamp and lamp image.

### construction

Trim stays captive to housing during relamping via torsion springs.

Torsion springs pull trim tight to the ceiling.

No visible fasteners within the trim.

Mechanical light traps eliminate light leaks.

Warp free die–cast aluminum faceplate, .040" thick flange on overlap versions.

### labels

UL listed, Damp label standard.

No visible labels when trim is installed.

## housing ordering

| | | |
|---|---|---|
| **housing series** | | __FM4__ |
| Metal Halide Housing | FM4 | |
| **lamp** | | __MR__ |
| 20W or 39W CMH MR16 | MR | |
| **ballast type** | | _____ |
| M156 20W Electronic (120V and 277V) | M156U | |
| M130 39W Electronic (120V) | M1301 | |
| M130 39W Electronic (277V) | M1302 | |
| M130 39W Electronic Dimming (120V) | M1301D | |
| M130 39W Electronic Dimming (277V) | M1302D | |
| **faceplate type** | | _____ |
| Round Flush | RF | |
| Round Overlap | RO | |
| **housing type** | | _____ |
| Thermally Protected, Non-IC (39W only) | T | |
| Combined T and IC Rated (20W only) | IC | |
| **factory options** | | |
| Bar Hangers | BH | _____ |
| Chicago Plenum | CP | _____ |
| 3000K Lamp 12˚ Spot | LSP | _____ |
| 3000K Lamp 25˚ Spot | LFL | _____ |
| 3000K Lamp 40K Wide Flood | LWF | _____ |

## trim ordering

| | | |
|---|---|---|
| **trim aperture** | | __D1__ |
| 1⅛" Aperture | D1 | |
| **faceplate type** | | _____ |
| Round Flush (drywall only) | RF | |
| Round Overlap | RO | |
| **optic** | | _____ |
| Pinhole with Black Bevel | PIN | |
| Pinhole without Black Bevel | PINX | |
| **faceplate finish** | | _____ |
| White | WH | |
| Black | BK | |
| Titanium Silver | TS | |
| Aluminum Raw | AL | |
| **lens accessories** (soft focus lens supplied as standard) | | |
| Hex Louver | HL | _____ |
| Linear Spread Lens | LSL | _____ |
| Prismatic Spread Lens | PSL | _____ |
| Sand Blasted Lens | SBL | _____ |
| Clear Lens | CL | _____ |
| UV Lens | UVL | _____ |

a complete unit consists of
two line items, housing and trim
example: FM4-MR-M156-RF-IC
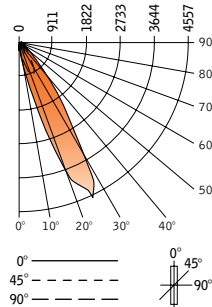D1-RF-PIN-WH

downlight

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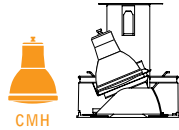
CMH

## CANDLEPOWER DISTRIBUTION - 0° TILT
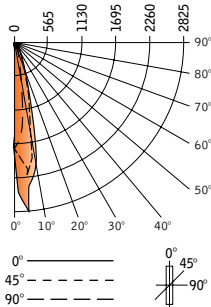


| Vertical Angle | 0° | Horizontal Angle 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 1753 | 1753 | 1753 | 1753 | 1753 |
| 5° | 2825 | 2672 | 2255 | 1796 | 1449 |
| 15° | 1070 | 979 | 849 | 555 | 330 |
| 25° | 169 | 166 | 148 | 102 | 58 |
| 35° | 45 | 43 | 42 | 36 | 31 |
| 45° | 2 | 1 | 0 | 0 | 0 |
| 55° | 0 | 0 | 0 | 0 | 0 |
| 65° | 0 | 0 | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 |

## CANDLEPOWER DISTRIBUTION - 30° TILT



| Vertical Angle | 0° | Horizontal Angle 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 92 | 92 | 92 | 92 | 92 |
| 5° | 178 | 164 | 133 | 103 | 85 |
| 15° | 931 | 730 | 281 | 98 | 60 |
| 25° | 2171 | 1314 | 259 | 52 | 40 |
| 35° | 770 | 586 | 100 | 33 | 14 |
| 45° | 114 | 108 | 37 | 12 | 0 |
| 55° | 30 | 24 | 3 | 0 | 0 |
| 65° | 0 | 0 | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 |

## FOOTCANDLE VALUES
### 0° aiming angle - horizontal surface

| D | C | FC | L | W |
|---|---|---|---|---|
| 6' | 0 | 49 | 1.3' | 1.3' |
| 8' | 0 | 27 | 1.7' | 1.7' |
| 10' | 0 | 18 | 2.1' | 2.1' |
| 12' | 0 | 12 | 2.5' | 2.5' |
| 14' | 0 | 9 | 2.9' | 2.9' |
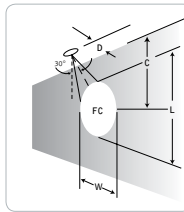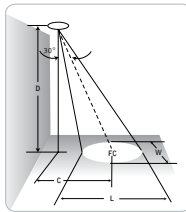


## FOOTCANDLE VALUES
### 30° aiming angle - horizontal surface

| D | C | FC | L | W |
|---|---|---|---|---|
| 6' | 3.5' | 25 | 1.7' | 1.5' |
| 8' | 4.6' | 15 | 2.3' | 1.9' |
| 10' | 5.8' | 9 | 2.8' | 2.4' |
| 12' | 6.9' | 7 | 3.2' | 2.9' |
| 14' | 8.1' | 5 | 3.9' | 3.4' |

## FOOTCANDLE VALUES
### 30° aiming angle - vertical surface

| D | C | FC | L | W |
|---|---|---|---|---|
| 2' | 3.5' | 79 | 1.7' | 0.8' |
| 3' | 5.2' | 35 | 1.6' | 1.3' |
| 4' | 6.9' | 20 | 3.5' | 1.7' |
| 5' | 8.7' | 13 | 4.3' | 2.1' |
| 6' | 10.4' | 9 | 5.2' | 2.5' |

Footcandle results based on AGI32; off the shelf lamp in fixture, with soft focus lens; Reflectances=0/0/0; LLF=1

Go to www.focalpointlights.com for additional photometric data.