



PRODUCT DESCRIPTION

Recessed metal halide MR16 downlight luminaire with 3 1/4" square aperture die cast reflector. Low profile non-IC housing is for use in non-insulated areas, or where insulation is spaced at least 3" from housing. Supplied with vertically adjustable mounting brackets that accept 1/2" conduit, "C" channel bar hangers, linear bar hangers or telescoping Real Nail bar hangers.

PRODUCT SPECIFICATIONS

Reflector Die cast, parabolic reflector maintains low glare and tight corners • Available in haze, black haze, wheat haze, or white finishes.

Trims Style Self Flanged and Flush Mount reflectors utilize precision wound double torsion springs for tight, secure fit to ceiling • Flange is same finish as reflector unless optional painted white flange is specified • For flush mount installations in drywall ceilings use the FMSQ4 flush mount adapter • For flush mount installations in wood, stone, or tile ceilings the FMASQ4-SC*** must be used (specify ceiling thickness and adapter finish).

Lens Lampholder accommodates up to two (2) 2" captive accessory lenses.

Socket GX10 twist lock socket with quick disconnect for simplified maintenance.

Lamp One 20W or 39W CMH MR16 lamp.

Ballast High Power Factor, electronic solid state ballast with less than 10% THD • Features transient and short circuit protection • Available in 120V or 277V.

Codes/Labels UL and cUL listed for through branch wiring, damp locations • Product thermally protected • Union made.

Mounting Bracket Rough-in section equipped with vertically adjustable mounting brackets that accept 1/2" conduit, "C" channels (HB-26 or HB-50), linear flat bars (LB-27) or 26" telescoping Real Nail bar hangers (HB-1).

Junction Box Rated for 8 No. 12 AWG 90° C through branch circuit conductors and includes (5) 1/2", (1) 3/4", and (4) Non-metallic sheathed cable knock-outs • Push-In electrical connectors for field connections.

Housing/Mounting Frame Black steel plaster frame and housing painted for visually dark interior • V-Notch in plaster frame aids fixture alignment during installation • Patent Pending Tru-Line™ Adjustment Mechanism featuring +/- 1/2" translation and +/- 45° aperture rotation aids fixture alignment after installation, prior to drywall.

Ceiling Thickness 1/2" – 7/8" ceiling standard • For thicker ceilings, order CTA4SQ-125 (7/8"-1 1/4"), CTA4SQ-163 (1 1/4"-1 5/8") or CTA4SQ-200 (1 5/8" – 2") • CTA4SQ not required for wood, stone, or tile flush mount applications.

RECESSED DOWNLIGHT

3-1/4" OPEN APERTURE

Non-IC Rated, 20W, 39W CMH MR16

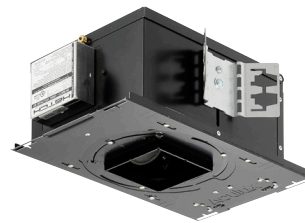
TC943MSQ, 437SQ TRIM

Project: _____

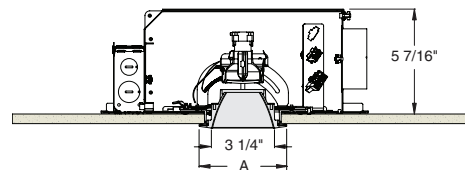
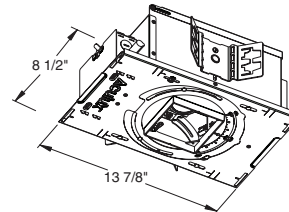
Fixture Type: _____

Location: _____

Contact/Phone: _____



DIMENSIONS



4 1/8" CEILING CUTOUT
(REFER TO INSTRUCTION SHEET FOR
FLUSH MOUNT CEILING CUTOUT)

	A
Self Flanged	4 1/2"
Flush Mount	3 5/8"

RECESSED DOWNLIGHT

3-1/4" OPEN APERTURE

Non-IC Rated, 20W, 39W CMH MR16

TC943MSQ, 437SQ TRIM

Ordering Information

Housing, trim and accessories each ordered separately

Example: **TC943MSQ-MR16-20E1**

Housing	Wattage	Voltage	Options
TC943MSQ-MR16	20 20W 39 39W	E1 120V E2 277V	CP Chicago Plenum

Example: **437SQW-SF**

Trim/Description



Self Flanged ¹	Flush Mount ²	Description
437SQBHZ-SF	437SQBHZ-FM	Black Haze Reflector
437SQHZ-SF	437SQHZ-FM	Clear Reflector
437SQW-SF	437SQW-FM	White Reflector
437SQWHZ-SF	437SQWHZ-FM	Wheat Haze Reflector

¹For self flanged reflector with optional white painted flange, replace "-SF" suffix with "-SFWH".

²Flush Mount trims must be used with Flush Mount Adapter, ordered separately.

Product specifications subject to change without notice.

Flush Mount Adapters

FMSQ4	Drywall Ceiling Adapter
FMASQ4-SC100-WH	Wood, Stone, Tile, 1/2"-1" Thick Ceiling, Adapter, White
FMASQ4-SC100-BL	Wood, Stone, Tile, 1/2"-1" Thick Ceiling, Adapter, Black
FMASQ4-SC138-WH	Wood, Stone, Tile, 1"-1 3/8" Thick Ceiling, Adapter, White
FMASQ4-SC138-BL	Wood, Stone, Tile, 1"-1 3/8" Thick Ceiling, Adapter, Black
FMASQ4-SC175-WH	Wood, Stone, Tile, 1 3/8"-1 3/4" Thick Ceiling, Adapter, White
FMASQ4-SC175-BL	Wood, Stone, Tile, 1 3/8"-1 3/4" Thick Ceiling, Adapter, Black

Optical Accessories

Cat. #	Description	Cat. #	Description
T741	Med. Pink Color Filter	T7405	Yellow Dichroic Lens
T742	Warm Red Color Filter	T7406	Magenta Dichroic Lens
T743	Daylight Blue Color Filter	T7411	Blue Green Dichroic Lens
T744	Med. Blue Color Filter	T7416	Daylight Blue Correction Lens
T745	Med. Amber Color Filter	T7420	Diffuse Spread Lens
T746	Med. Green Color Filter	T7422	UV Filter Lens
T7401	Red Dichroic Lens	T7477	Prismatic Lens
T7403	Med. Green Dichroic Lens	T7478	Linear Spread Lens
T7404	Med. Blue Dichroic Lens	T7459BL	Hexcell Louver

Misc. Accessories

CTA45Q-125	1 1/4" Thick Ceiling Adapter
CTA45Q-163	1 5/8" Thick Ceiling Adapter
CTA45Q-200	2" Thick Ceiling Adapter
HB-1	(2) Real Nail 3 Bar Hangers
HB-26	(2) 26" C-Channel Bar Hangers
HB-50	(2) 50" C-Channel Bar Hangers
LB-27	(2) 27" Linear Bar Hangers

To order, specify catalog number.



PHOTOMETRIC REPORT

Catalog Number: TC943MSQ (437SQHZ-SF)

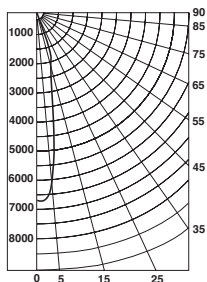
Test Number: P101100701

Total Luminaire Efficiency: 79.9%

Luminaire Spacing Criteria: 0.43

Luminaire: Haze finish, square downlight trim. Open aperture.

Lamps: One CMH39MR16/930/FL, rated at 2200 total lumens.



Candlepower Distribution (Candelas)

Angle	Candela	Lumens
0°	6702	
5°	6164	588
15°	2446	693
25°	677	313
35°	162	102
45°	59	46
55°	9	8
65°	5	5
75°	2	3
85°	0	0

Initial Footcandles

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Footcandles Beam Edge	Beam Diameter
6'	186.2	87.2	2.5'
7'	136.8	64.0	3.0'
8'	104.7	49.0	3.4'
9'	82.7	38.7	3.8'
10'	67.0	31.4	4.2'
11'	55.4	25.9	4.6'
12'	46.5	21.8	5.1'
13'	39.7	18.6	5.5'
14'	34.2	16.0	5.9'
15'	29.8	13.9	6.3'

Luminance Data

Ang in Deg	Footlamberts	Candela/M ²
45	3580	12266
55	706	2418
65	467	1601
75	411	1409
85	0	0

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30°	1595	72.5	90.7
0-40°	1697	77.1	96.5
0-60°	1751	79.6	99.6
0-90°	1758	79.9	100.0
90-180°	0	0.0	0.0
0-180°	1758	79.9	100.0

AVERAGE INITIAL FOOTCANDLES

Reflectances: 80% Ceiling, 50% Walls, 20% Floors

Luminaire Spacing	Room Cavity Ratio		
	RCR1	RCR3	RCR5
4' x 4'	124	111	103
5' x 5'	79	71	66
6' x 6'	55	50	46
7' x 7'	45	40	37
8' x 8'	35	32	29
9' x 9'	27	24	22
10' x 10'	20	18	17
12' x 12'	14	12	11

COEFFICIENTS OF UTILIZATION - % (Zonal Cavity Method)

Effective Floor Reflectance 20%

PCC	80		70		50		30		10		0							
PW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0			
0	95	95	95	95	93	93	93	93	89	89	89	85	85	85	82	82	82	80
1	92	90	88	87	90	88	87	86	85	84	83	82	81	80	79	79	78	77
2	88	85	83	81	87	84	82	80	82	80	78	79	78	77	77	76	75	74
3	85	81	78	76	84	80	78	75	78	76	74	77	75	73	75	73	72	71
4	83	78	75	72	81	77	74	72	75	73	71	74	72	70	73	71	69	68
5	80	75	71	69	79	74	71	68	73	70	68	72	69	67	70	68	67	66
6	77	72	68	66	76	71	68	66	70	67	65	69	67	65	68	66	64	64
7	75	69	66	63	74	69	66	63	68	65	63	67	65	63	66	64	62	61
8	73	67	64	61	72	67	63	61	66	63	61	65	63	61	65	62	60	60
9	71	65	61	59	70	65	61	59	64	61	59	63	61	59	63	60	59	58
10	69	63	60	57	68	63	59	57	62	59	57	62	59	57	61	59	57	56

PHOTOMETRIC REPORT

Catalog Number: TC943MSQ (437SQHZ-SF)

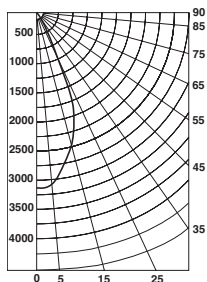
Test Number: P101101103

Total Luminaire Efficiency: 77.1%

Luminaire Spacing Criteria: 0.68

Luminaire: Haze finish, square downlight trim. Open aperture.

Lamps: One CMH39MR16/930/WFL, rated at 2200 total lumens.



Candlepower Distribution (Candelas)

Angle	Candela	Lumens
0°	3193	
5°	3102	296
15°	2448	694
25°	1123	520
35°	211	133
45°	48	37
55°	11	9
65°	5	5
75°	3	3
85°	0	0

Initial Footcandles

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Footcandles Beam Edge	Beam Diameter
6'	88.7	35.0	5.0'
7'	65.2	25.7	5.8'
8'	49.9	19.7	6.6'
9'	39.4	15.6	7.4'
10'	31.9	12.6	8.3'
11'	26.4	10.4	9.1'
12'	22.2	8.8	9.9'
13'	18.9	7.5	10.7'
14'	16.3	6.4	11.6'
15'	14.2	5.6	12.4'

Luminance Data

Ang in Deg	Footlamberts	Candela/M ²
45	2917	9995
55	787	2695
65	531	1820
75	470	1610
85	0	0

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30°	1510	68.6	89.0
0-40°	1642	74.6	96.8
0-60°	1689	76.8	99.5
0-90°	1697	77.1	100.0
90-180°	0	0.0	0.0
0-180°	1697	77.1	100.0

AVERAGE INITIAL FOOTCANDLES

Reflectances: 80% Ceiling, 50% Walls, 20% Floors

Luminaire Spacing	Room Cavity Ratio		
	RCR1	RCR3	RCR5
4' x 4'	118	106	95
5' x 5'	76	68	61
6' x 6'	53	47	42
7' x 7'	43	38	34
8' x 8'	34	30	27
9' x 9'	26	23	21
10' x 10'	19	17	15
12' x 12'	13	12	11

COEFFICIENTS OF UTILIZATION - % (Zonal Cavity Method)

Effective Floor Reflectance 20%

PCC	80		70		50		30		10		0							
PW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0			
0	92	92	92	92	90	90	90	90	86	86	86	82	82	82	79	79	79	77
1	88	86	85	83	86	85	83	82	81	80	79	79	78	77	76	75	75	73
2	85	81	79	76	83	80	77	75	77	75	74	75	74	72	73	72	71	70
3	81	77	73	71	80	76	73	70	74	71	69	72	70	68	70	69	67	66
4	78	73	69	66	76	72	69	66	70	67	65	69	66	64	67	65	64	63
5	75	69	65	62	73	68	65	62	67	64	62	66	63	61	65	62	61	60
6	72	66	62	59	71	65	62	59	64	61	58	63	60	58	62	60	58	57
7	69	63	59	56	68	62	59	56	61	58	56	61	58	55	60	57	55	54
8	66	60	56	53	65	60	56	53	59	55	53	58	55	53	57	55	53	52
9	64	57	54	51	63	57	53	51	56	53	51	56	53	51	55	52	50	49
10	61	55	51	49	61	55	51	49	54	51	49	54	51	48	53	50	48	47

