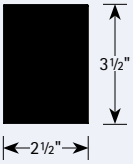
MM, MMA SURFACE MOUNT

1-Lamp, T5, T5HO, Direct Symmetric or Asymmetric

FEATURES

- 2½" x 3½" surface mount minimalist form is ultra-slim and attractive
- 1 T5 or 1 T5HO
- Extensive aesthetic options
- Symmetric downlight with lens, baffle or louvers
- Asymmetric downlight louvers allow continuous rows that remain within the product housing
- Available with optional light modules and corners
- Full family including cable mount, wall mount, surface mount and recessed
- Companion fixtures include the 3½" x 3½" Microlyne and 3½" x 5" Microlyne® Direct-Indirect
- Aesthetic continuity across family, shielding and options

SHAPE AND DIMENSIONS



PROJECT INFORMATION

Project Name | Type

Catalog No. | Date

CONSTRUCTION

Extruded aluminum housing includes typical recycled content of 25-30%.

END CAPS

Die cast flat end caps for standard lamp configuration. Both end caps feature silicone gasket to eliminate light leak, see Light Seal. Ships installed on fixture.

LIGHT SEAL

Housing unions between all joints include upper formed light seal and aligner connectors to block light. End of row and single units feature unique optimized V-0 closed cell silicone gasket light seal at joints between extruded housing and die cast end cap.

CONNECTIONS

Secure, simple housing connections ensure row continuity without light leak. Standard lamp configuration features patent pending Ready Connect system for end cap connections.

MOUNTING

Microlyne® Surface Mount is low profile and attractive with a full complement of shielding options. Installs to T-Bar, beam or hard ceilings.

REFLECTOR

High reflectance formed white reflector.

SHIELDING

Shielding is provided for single or continuous row. Options match across entire Microlyne® family.

OA - Opal Acrylic lens emphasizes the narrow rectilinear shape by creating a pleasant glow of white along the underside of the housing. Symmetric distribution.

WCB – White Cross Baffle emphasizes linearity with a crisp, clean bladed appearance. Symmetric distribution.

MA - Matte anodized louvers incorporate an attractive but subtle grain pattern which minimizes the visibility of fingerprints and construction dust without sacrifice to aesthetic qualities. Symmetric distribution.

M4R - 95% Reflective Specular Aluminum louver combines glare control and performance with a high tech appearance. Symmetric or asymmetric distribution.

HEP - High efficiency parabolic specular louver maximizes downlight for enhanced efficiency where maximum light output is the primary concern. Symmetric or asymmetric distribution.

DISTRIBUTION

Symmetric or asymmetric distribution available. Asymmetric uses louver system which does not extend below housing and allows continuous rows and appears to be the same as symmetric visually.

ELECTRICAL

Fixtures are pre-wired with electronic ballasts in 120V, 277V or 120V-277V (U). 347V available on some models; contact factory. Tandem and row configurations use quick-connect single or multi-circuit wiring between luminaires. Power feed locations as indicated on Technical Installation Data pages or project specific layouts. Night light, emergency circuits or factory installed battery packs must be specified as option.

FINISH

Matte White powder coat standard for end caps and housing. Zet Silver and additional colors and finishes optional.

CERTIFICATION

All fixtures bear appropriate UL or C UL US labels.

Name:	MM-1T5-HEP-EP
Test #:	14936
Efficiency:	83.5%
LER:	68

ORDERING INFORMATION

EXAMPLE: MM-16-1DT5-SM-OA-EPU-MW

MM - __ - __ - SM - __ - __ - __ - __ - __

MODEL
- **MM** Microlyne® Mini

ROW LENGTH
- **4** 4' Single
- **8** 8' Single
- **12** 12' Single
- **__** Indicate row length in 4' increments.[1,2]

SYM / ASYM
- **Blank** Symmetric
- **A** Asymmetric Louver[4]

LAMP TYPE AND PROFILE
- **1DT5** One T5 Lamp[3]
- **1DT5HO** One T5HO Lamp[3]

ROW PATTERN
- **Blank** Straight
- **P** Pattern (specify)

Pattern layouts require factory approval drawings.

MOUNTING METHOD
- **SM** Surface Mount

DOWNLIGHT SHIELDING
- **OA** Opal Acrylic Lens
- **WCB** White Cross Baffle
- **MA** Matte Anodized Low Iridescent Semi-Specular Aluminum (24 Cell)[4]
- **M4R** 95% Reflective Specular Aluminum Louver (24 Cell)[4]
- **HEP** High Efficiency Parabolic Specular Louver (15 Cell)[4]

VOLTAGE
- **U** 120V-277V
- **120** 120V
- **277** 277V
- **347** 347V

FINISH
- **MW** Matte White (Std.)
- **ZT** ZET Metallic Silver

See MTX-1 for other color selections.

BALLAST
- **EP** Electronic, Programmed Start (Std. for T5 & T5HO)
- **ED** Electronic, Dimming, (Must Specify)[5]
- **ESD** Electronic, Step Dimming[5]

OPTIONS
- **EL** One Emergency Battery Pack Per Row[5,6,8]
- **EMC** One Emergency Circuit[5,6,7,8]
- **NL** Night Light Circuit[5,6,7,8]
- **GLR** Fast Blow Fuse
- **GMF** Slow Blow Fuse
- **CSA** UL listed or CSA certified for Canada
- **DL** Damp Label (Available on most models)

90° CORNER[6]
- **90** One Unlit 90°

One corner per row. Square equals 4 rows with one corner each.

[1] Rows over 12' will be configured by Alera. Example: 16' will be (2) 8'. For alternate configurations, contact factory.
[2] Shorter increments are available–contact factory.
[3] T5/T5HO lamps are shorter than nominal housing lengths listed. Socket shadow will occur in continuous run applications. (This can be minimized with custom length housings–contact factory.)
[4] Asymmetric options are limited to M4R, HEP, and MA only.
[5] Specify dedicated voltage.
[6] Not available with all configurations; some limitations apply. Contact factory for details.
[7] One extra feed drop per row with through wiring. (Standard is one 4ft lamp per circuit.)
[8] For additional, specify quantity before nomenclature (Example: 2EL120, EMC277).

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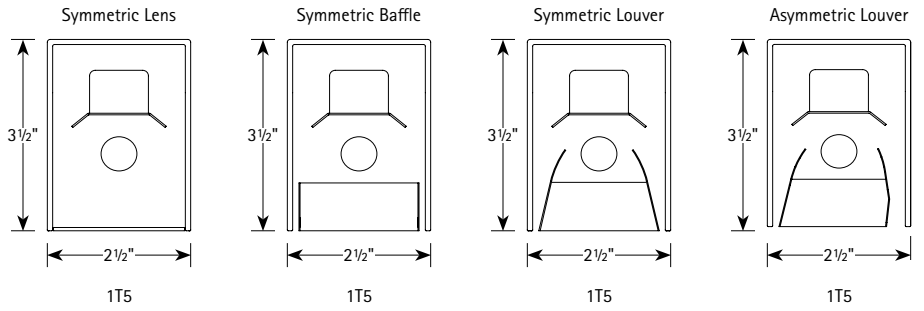
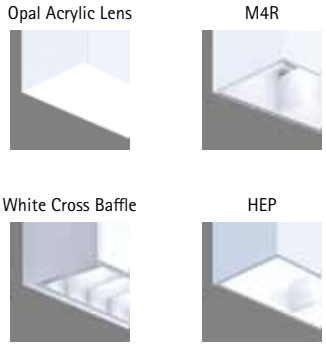
CROSS SECTION





PHOTOMETRIC DATA

LUMINAIRE DATA Test 14936

Luminaire	MM-1T5-HEP-EP Microlyne® Beams 48 x 2.5 1-Lamp with 15 Cell Louver
Ballast	ICN-2S28
Ballast Factor	1.04
Lamp	F28T5
Lumens per Lamp	2600
Watts	33
Shielding Angle	0° = 19 90° = 36

ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	558	21.5	25.7
0-40	1022	39.3	47.0
0-60	1984	76.3	91.4
0-90	2172	83.5	100.0
0-180	2172	83.5	100.0

ENERGY DATA

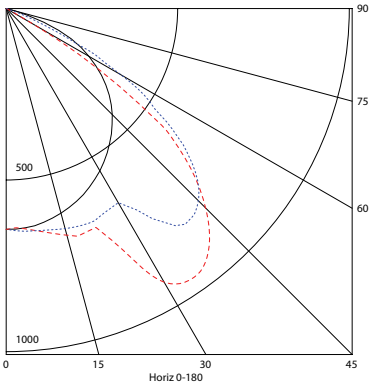
Total Luminaire Efficiency	83.5%
Luminaire Efficacy Rating (LER)	68
IESNA RP-1-1993 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	$3.53 based on 3000 hrs. and $0.08 per KWH

COEFFICIENTS OF UTILIZATION (%)

RCR	RC	80				70				50			0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
	1	92	89	86	83	90	87	84	82	84	82	79	73
	2	85	79	74	70	83	77	73	69	74	70	67	62
	3	78	70	63	58	76	68	63	58	66	61	57	53
	4	71	62	55	50	69	61	54	49	59	53	49	46
	5	65	55	48	42	64	54	47	42	52	46	42	39
	6	60	49	42	37	58	48	42	37	47	41	36	34
	7	55	44	37	32	54	44	37	32	42	36	32	30
	8	51	40	33	28	50	40	33	28	39	33	28	26
	9	48	37	30	25	47	36	30	25	35	29	25	23
	10	45	34	27	23	44	33	27	23	32	27	23	21

RCR = Room Cavity Ratio
RC = Effective Ceiling Cavity Reflectance **RW** = Wall Reflectance

INDOOR CANDELA PLOT

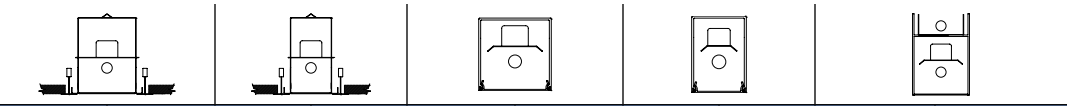


AVERAGE LUMINANCE (Candela/Sq. M.)

Angle	0.0	22.5	45.0	67.5	90.0
0	9107	9107	9107	9107	9107
30	8929	9714	10679	14015	15046
40	8819	10169	15105	16621	17009
45	8753	10435	15863	16464	16464
50	8637	11590	15732	15225	15049
55	8371	13062	14050	12544	10964
60	7875	12633	11047	5609	3541
65	7004	10590	5731	972	235
70	4845	6626	1491	124	83
75	1532	1532	109	0	0
80	82	82	0	0	0
85	0	0	0	0	0

Test Date 3/19/08

MICROLYNE® FAMILY QUICK REFERENCE PAGE FINDER



	MR	MRA	MMR	MMRA	M	MA	MM	MMA	MDI	MDIA
SYMMETRIC	X		X		X		X		X	
ASYMMETRIC		X		X		X		X		X
GRID/SLOT GRID GRID FLANGE/ SLOT GRID FLANGE	MRG MRSTGG	MRAG MRASTGG	MMR, MMRAG							
FLANGE	MRF MRSTGF	MRAF MRASTGF	MMR, MMRAF							
PLASTER	MRP MRSTGP	MRAP MRASTGP	MMR, MMRAP							
CABLE					MCM MSTGCM	MACM MASTGCM	MM, MMACM		MDICM MDISTGCM	MDIACM MDIASTGCM
SURFACE					MSM MSTGSM	MASM MASTGSM	MM, MMASM			
WALL					MWM MSTGWM	MAWM MASTGWM	MM, MMAWM		MDIWM MDISTGWM	MDIAWM MDIASTGWM