SPECIFICATION SHEET

RAIL 2 RM2DU (Formerly RM2DI)

LED . WALL . DIRECT / INDIRECT

DAMP | DROP LENS | RISE LENS | bios ILLUMINATED INTELLIGENT

PART #:	
PREP BY:	DATE:
PROJECT:	
NOTES:	
APPROVAL SIGNATURE:	DATE (DD/MM/YYYY):

PERFORMANCE SUMMARY @ 3500K		MBMB	MBMD	MM
		L3	L3	L3
Lumens (lm) per foot	80 CRI	1252	1272	1404
	90 CRI	1096	1113	1229
Distribution (Up / Down %)		52 / 48	55 / 45	53 / 47
Wattage (W) per foot		12.1		
Efficacy (lm/W)	80 CRI	104	105	116
	90 CRI	91	92	102
L70 Estimate (h)		≥ 60,000 hrs		

See page 2 for the complete Light Level Performance chart.

FEATURES

- Efficacy up to 123 lm/W
- Continuous Rows and 90 degree corners available
- Optional Illuminated by BIOS version for Healthy Lighting and Well Building Applications

ORDERING LOGIC

Example Part Number: RM2DU-2L35K-12-MBMB-W-L3L31-W-1-D-90

RM2DU							W				
1	2	3	4	5	6	7	8	9	10	11	12

1. SERIES
RM2DU

2. COLOR TEMP
2L30K 3000K
2L35K 3500K
2L40K 4000K

90 CRI is available under OPTIONS.

BIOS is available under OPTIONS. See p2 for BIOS Naming Convention Reference

3. LENGTH
2 2 ft
3 3 ft
4 4 ft
5 5 ft
6 6 ft
7 7 ft
8 8 ft
9 9 ft
10 10 ft
11 11 ft
12 12 ft
RA Continuous Rows
Replace "A" with lengthin feet.
C Custom Length*

4. OPTICS (UP / DOWN) and ACCENTS
MBMB Meta Blanc / Meta Blanc
MBMD Meta Blanc / Drop Lens
MRMB Rise Lens / Meta Blanc
MRMD Rise Lens / Drop Lens
MM Meta Ice / Meta Ice

Meta Blanc, Rise & Drop Lens: Opal Diffuse Lens
Meta Ice: High-Output Semi Diffuse Lens

5. FINISH
SA Satin Aluminum
W White
B Black
C Custom Finish
Specify RAL:

6 . LIGHT LEVEL (LL) / DRIVER
CODES
L1LX[1]
L2LX
L3LX
L4LX

"X" represents Standard Direct Light Level

Replace "X" with:
1 = Light Level 1
2 = Light Level 2
3 = Light Level 3
4 = Light Level 4

L3 L2
Indirect Light Level 3 | Direct Light Level 2

Select Driver below.
See Light Level Performance chart on p2.

7. CIRCUITRY
1 1 Circuit
UD Up / Down Switching
EM Emergency / Night Light
B Emergency Battery Pack[2]

8. MOUNTING
W Wall

9. VOLTAGE
1 120 V
2 277 V
3 347 V
4 UNV (120 - 277V)

10. SENSORS / 11. CONTROLS
Please see last page for fixture integrated SENSORS and CONTROLS Order Logic codes

12. OPTIONS
90 90 CRI, High R9
BS BIOS Static*,[3]
BD BIOS Dynamic*,[3]
_ None (leave space empty)

* Consult factory. | [1] Not available with BIOS.| [2] Battery operates 4ft direct sections only. | [3] BIOS is only available on standard lengths (standard lengths include: 2-12 ft in 1ft increments)

Select Driver:
- ☐ Factory option 0-10V, 1% Dimming
- ☐ **LHE** Lutron H-Series Hi-lume 1% EcoSystem LED Driver
- ☐ **LA2** Lutron A-Series Hi-lume 1% 2-wire LED Driver
- ☐ **L5E** Lutron 5-Series EcoSystem LED Driver

Light Level Performance

3500K, 80 CRI, 0-10V Dimming (Standard)

		MBMB (UP: Meta Blanc / DOWN: Meta Blanc)			MBMD (UP: Meta Blanc / DOWN: Drop Lens)			MM (UP: Meta Ice / DOWN: Meta Ice)		
		Lumens per foot	Wattage per foot	Efficacy (lm/W)	Lumens per foot	Wattage per foot	Efficacy (lm/W)	Lumens per foot	Wattage per foot	Efficacy (lm/W)
Distribution % (Up/Down)		52 / 48			55 / 45			53 / 47		
L1		736	6.9	107	748	7.0	106	852	6.9	123
L2		920	8.8	104	936	8.9	105	1051	8.8	119
L3		1252	12.1	104	1272	12.1	105	1404	12.1	116
L4		2321	25.0	93	2359	25.0	94	2585	24.2	107

Standard Lumen Adjustment Factor

Color Temp	80 CRI	90 CRI
3000K	0.984	0.880
3500K	1.000	0.875
4000K	1.032	0.879

BIOS 3500K

		MBMB (UP: Meta Blanc / DOWN: Meta Blanc)			MBMD (UP: Meta Blanc / DOWN: Drop Lens)			MM (UP: Meta Ice / DOWN: Meta Ice)		
		Lumens per foot	Wattage per foot	Efficacy (lm/W)	Lumens per foot	Wattage per foot	Efficacy (lm/W)	Lumens per foot	Wattage per foot	Efficacy (lm/W)
Distribution % (Up/Down)		52 / 48			55 / 45			53 / 47		
Static	L2	1256	18.9	66.6	1322	18.9	70.1	1395	18.9	74.0
	L3	1735	27.6	63.0	1827	27.6	66.3	1928	27.6	70.0
Dynamic	L2	1130	18.9	59.9	1190	18.9	63.1	1256	18.9	66.6
	L3	1562	27.6	56.7	1644	27.6	59.6	1735	27.6	63.0
R9		≥ 90								
COI**		< 3.3								
EML or M/P*		0.8								

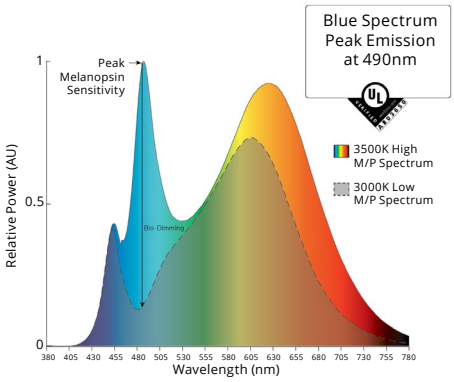
* EML or M/P is a ratio that describes the relative melanopic lux (M) versus the photopic lux (P). BIOS provides the following m/p values: 3000K = 0.7, 3500K = 0.8, 4000K = 0.9. ** COI - Cyanosis Observation Index.

BIOS Lumen Adjustment Factor (LAF)

Color Temp	LAF
3500K	1.00
4000K	1.05

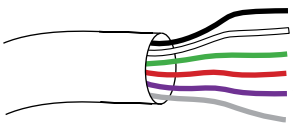
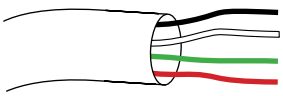
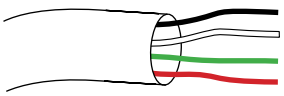
BIOS Naming Convention Reference

BIOS Static	3500K	35BIOSST
	4000K	40BIOSST
BIOS Dynamic	3500K	35BIOSDY
	4000K	40BIOSDY

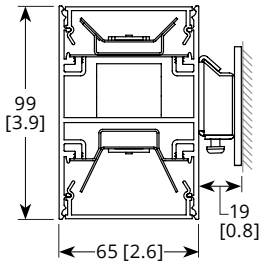


Metalumen's light level performance metrics are subject to manufacturers component tolerances.

WIRING

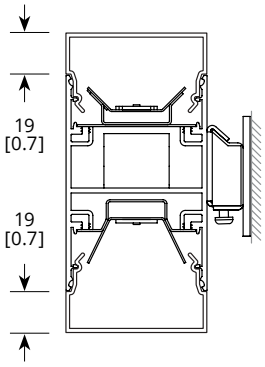
Standard Wiring	Emergency Wiring	Emergency Battery Pack Wiring
		
BLACK - LINE WHITE - NEUTRAL GREEN - GROUND RED - CAPPED/SW LEAD VIOLET - DIM(+) GREY - DIM(-)	BLACK - LINE WHITE - NEUTRAL GREEN - GROUND RED - CAP OFF	BLACK - LINE WHITE - NEUTRAL GREEN - GROUND RED - UNSWITCHED HOT

CROSS SECTIONS & DIMENSIONS

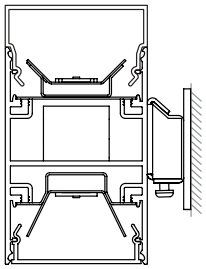


UP: Meta Blanc
DOWN: Meta Blanc

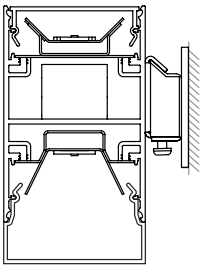
UP: Meta Ice
DOWN: Meta Ice



UP: Rise Lens
DOWN: Drop Lens



UP: Rise Lens
DOWN: Meta Blanc



UP: Meta Blanc
DOWN: Drop Lens

SPECIFICATIONS

Due to the Continuous Improvement Policy at Metalumen, we reserve the right to change our specifications without notice.

Housing: Rigid extruded aluminum body, 2.3mm [0.09"] nominal wall thickness. Aluminum end caps.
Optical System: Metalumen luminaires are designed to utilize leading edge LED technology combined with luminaire optimized reflectors and our custom diffusers, resulting in industry leading optical performance.
BIOS LED: BIOS SkyBlue® solutions have a peak wavelength at 490nm to provide an enhanced spectrum with high M/P (melanopic to photopic) ratios while also providing a low Cyanosis Observation Index (COI), making it ideally suited for Healthcare and Healthy Lighting projects. BIOS® SkyBlue® lighting solutions also contribute to satisfying Circadian Lighting Design Feature for WELL Building Standard v1 and v2.
CRI: 83+ for 3500K, 80 minimum for all CCTs in standard configurations.
Lumen Maintenance: Minimum 50,000h with TM-21 lumen maintenance of 85% @ 25°C ambient temperature (calculated based on IESNA LM-80-08 LED test data). L70: ≥60,000hrs.
Finish: Satin aluminum, white and black are standard finishes. For custom finish, contact factory. Accent finish comes in black only.
Mounting: Wall bracket provided.
Electrical: Factory prewired with easy wire quick connect sections.
Drivers: Metalumen offers 0-10V dimming* as a standard on our entire LED product offering. Dimming range is 1%-100%. Power factor is > 90%. Class 2 rating. Drivers are integral.
Approvals: All components are UL/CSA/QPS recognized or listed. RoHS compliant. cULus pending.
Environment: Suitable for dry or damp locations.

*Standard drivers compatible with passive/sinking dimmers. Please contact Metalumen if active/sourcing dimmer support is required.

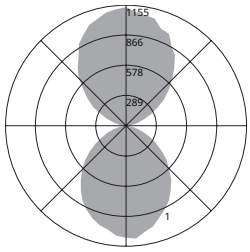
WARRANTY

Metalumen will warrant defective luminaires for 5 years from date of purchase. Warranty is valid if luminaire is installed and used according to specification. If defective, Metalumen will send replacement boards or drivers at no cost along with detailed replacement instructions and instructions on how to return defective components to Metalumen.

PHOTOMETRIC DATA - 3500K, 80 CRI

Optics Up: **Meta Blanc**
Optics Down: **Meta Blanc**
IES File: **RM2DU-2L35K-4-MBMB-L3**
Lumens: **1252/ft** Wattage: **12.1/ft**
Efficacy: **104**

PHOTOMETRIC CURVE
52% Up
48% Down



ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-20	378	7.5
0-30	782	15.6
0-40	1241	24.7
0-60	2024	40.4
0-80	2370	47.3
0-90	2398	47.8
10-90	2299	45.8
20-40	863	17.2
20-50	1297	25.9
40-70	1015	20.2
60-80	347	6.9
70-80	114	2.3
80-90	28	0.6
90-110	147	2.9
90-120	405	8.1
90-130	792	15.8
90-150	1771	35.3
90-180	2616	52.2
110-180	2469	49.2
0-180	5015	100

COEFFICIENTS OF UTILIZATION
Zonal Cavity Method | Effective Floor Cavity Reflectance = .20

RC	80				70				50		
RW	70	50	30	10	70	50	30	10	50	30	10
RCR											
0	107	107	107	107	98	98	98	98	82	82	82
1	98	94	90	86	90	86	83	80	73	70	68
2	89	82	76	71	82	76	71	66	64	60	57
3	82	72	65	60	75	67	61	56	57	52	48
4	75	64	57	51	69	60	53	48	51	45	41
5	69	57	49	44	63	53	46	41	45	40	36
6	63	52	44	38	58	48	41	36	41	36	31
7	59	47	39	33	54	43	36	32	37	32	28
8	54	42	35	30	50	40	33	28	34	29	25
9	51	39	31	26	47	36	30	25	31	26	22
10	47	36	28	24	44	33	27	23	29	24	20

LUMINANCE DATA (CD/M²)

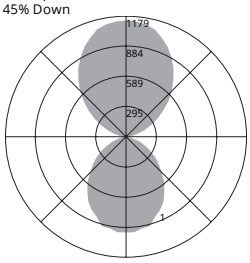
Vertical Angle	Horizontal Angle		
	0	45	90
45	9541	4598	3605
55	8174	3146	2432
65	6518	1946	1426
75	4336	954	670
85	1936	217	147

CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angle				
	0	30	60	90	90
0	1070	1070	1070	1070	1114
10	1030	1043	1022	1027	1099
20	931	950	935	930	985
30	823	812	798	794	819
40	673	659	627	624	643
50	508	491	452	440	451
60	331	319	298	282	286
70	180	173	158	147	145
80	63	58	53	48	50
90	4	3	4	4	3
100	60	60	55	51	42
110	187	184	172	168	151
120	347	347	337	329	313
130	531	531	516	518	486
140	717	722	701	707	685
150	874	889	880	866	882
160	986	1016	1025	1010	1033
170	1073	1089	1095	1105	1142
180	1136	1136	1136	1136	1245

Optics Up: **Meta Blanc**
Optics Down: **Drop Lens**
IES File: **RM2DU-2L35K-4-MBMD-L3**
Lumens: **1272/ft** Wattage: **12.1/ft**
Efficacy: **105**

PHOTOMETRIC CURVE
55% Up
45% Down



ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-20	335	6.6
0-30	691	13.6
0-40	1091	21.4
0-60	1805	35.4
0-80	2207	43.3
0-90	2292	45
10-90	2203	43.2
20-40	755	14.8
20-50	1140	22.4
40-70	961	18.9
60-80	402	7.9
70-80	155	3.1
80-90	85	1.7
90-110	242	4.8
90-120	533	10.5
90-130	946	18.6
90-150	1952	38.3
90-180	2804	55
110-180	2562	50.3
0-180	5095	100

COEFFICIENTS OF UTILIZATION
Zonal Cavity Method | Effective Floor Cavity Reflectance = .20

RC	80				70				50		
RW	70	50	30	10	70	50	30	10	50	30	10
RCR											
0	106	106	106	106	97	97	97	97	81	81	81
1	96	92	88	84	88	84	81	78	70	68	65
2	88	80	74	69	80	74	68	64	61	58	54
3	80	71	63	57	73	65	59	53	54	50	46
4	73	63	55	49	67	58	51	45	48	43	39
5	67	56	48	42	61	51	44	39	43	38	34
6	62	50	42	36	57	46	39	34	39	34	29
7	57	45	37	32	52	42	35	30	35	30	26
8	53	41	33	28	49	38	31	26	32	27	23
9	50	37	30	25	45	35	28	24	30	24	21
10	46	34	27	22	42	32	26	21	27	22	19

LUMINANCE DATA (CD/M²)

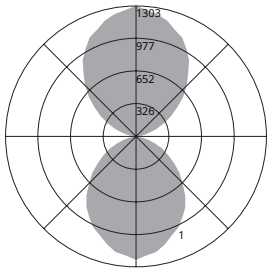
Vertical Angle	Horizontal Angle		
	0	45	90
45	7978	3639	3026
55	6725	2691	2264
65	5152	1856	1578
75	3288	1211	1056
85	1595	704	665

CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	932	932	932	932	932
10	906	915	924	908	912
20	829	834	828	813	831
30	731	722	711	697	683
40	582	582	567	560	563
50	424	426	429	434	448
60	277	292	309	328	322
70	147	167	200	223	223
80	50	78	114	130	137
90	8	33	67	82	87
100	62	82	108	116	117
110	193	203	226	224	227
120	356	365	378	386	379
130	539	547	555	556	553
140	719	728	732	733	738
150	889	890	892	903	892
160	1025	1009	1011	1021	1027
170	1114	1111	1092	1111	1112
180	1136	1136	1136	1136	1136

Optics Up: **Meta Ice**
Optics Down: **Meta Ice**
IES File: **RM2DU-2L35K-4-MM-L3**
Lumens: **1404/ft** Wattage: **12.1/ft**
Efficacy: **116**

PHOTOMETRIC CURVE
53% Up
47% Down



ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-20	426	7.6
0-30	880	15.6
0-40	1392	24.7
0-60	2263	40.2
0-80	2645	47
0-90	2675	47.5
10-90	2562	45.5
20-40	966	17.2
20-50	1450	25.8
40-70	1128	20.1
60-80	381	6.8
70-80	125	2.2
80-90	30	0.5
90-110	165	2.9
90-120	454	8.1
90-130	892	15.9
90-150	1995	35.5
90-180	2951	52.5
110-180	2786	49.5
0-180	5626	100

COEFFICIENTS OF UTILIZATION
Zonal Cavity Method | Effective Floor Cavity Reflectance = .20

RC	80				70				50		
RW	70	50	30	10	70	50	30	10	50	30	10
RCR											
0	107	107	107	107	98	98	98	98	82	82	82
1	98	93	90	86	90	86	83	80	72	70	68
2	89	82	76	71	82	76	71	66	64	60	57
3	82	72	65	60	75	67	61	56	57	52	48
4	75	64	57	51	69	60	53	48	51	45	41
5	69	57	50	44	63	53	46	41	45	40	36
6	63	52	44	38	58	48	41	36	41	36	31
7	59	47	39	33	54	43	36	32	37	32	28
8	54	42	35	30	50	40	33	28	34	29	25
9	51	39	31	26	47	36	30	25	31	26	22
10	47	36	29	24	44	33	27	23	29	24	20

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal Angle		
	0	45	90
45	10770	5143	4055
55	9140	3541	2644
65	7341	2174	1534
75	4852	1025	719
85	2039	237	159

CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	1229	1229	1229	1229	1229
10	1167	1153	1198	1137	1182
20	1047	1063	1055	1046	1055
30	928	917	910	886	884
40	767	750	727	703	680
50	570	552	529	496	487
60	374	364	342	315	309
70	199	199	182	164	161
80	70	69	60	54	52
90	5	4	3	4	4
100	67	67	65	61	56
110	214	210	201	197	190
120	403	400	389	378	370
130	612	601	592	584	579
140	810	811	807	803	798
150	1006	1006	997	979	989
160	1132	1137	1136	1155	1144
170	1238	1277	1241	1244	1250
180	1303	1303	1303	1303	1303

SENSORS AND CONTROLS

Metalumen offers intelligent standalone and/or connected luminaires with various integrated sensing and control system* connectivity options. The table below outlines some of the more common combinations and solutions offered. If you do not see the controls solution or the type of sensing technology you require for your project please contact us and we will work with you to try and identify a solution to meet your needs.

*Control system, installation and commissioning provided by others.

Examples:
WattStopper Daylight Sensor Standalone Luminaire: RM4D-1L35K-12-MB-W-L31-PA18-1-**DW**-90
Occupancy Sensor with Casambi Wireless Bluetooth Mesh Control Capability: RM4D-1L35K-12-MB-W-L31-PA18-1-**O-CAB**-90

ORDER LOGIC FIELDS			SENSOR FEATURE / BEHAVIOR		LUMINAIRE CONTROL / CONNECTIVITY	DESCRIPTION
11. SENSORS		12. CONTROLS	OCCUPANCY (PIR)	DAYLIGHT HARVESTING		
OF	-			None	Standalone	Factory Sensor - Occupancy Behaviors configured via BLE App
OW	-			None	Standalone (WattStopper)	Wattstopper Standalone Occupancy Sensor
DW	-		None		Standalone (WattStopper)	Wattstopper Standalone Daylight Harvesting Sensor
ODW	-				Standalone (WattStopper)	Wattstopper Standalone Occupancy and Daylight Harvesting Sensors
O	-	**CAB**		None	Casambi Bluetooth Mesh	Casambi Bluetooth Mesh Connectivity with Occupancy Sensing
OD	-	**CAB**			Casambi Bluetooth Mesh	Casambi Bluetooth Mesh Connectivity with Daylight Harvesting and Occupancy Sensing
	-	**CAB**	None	None	Casambi Bluetooth Mesh	Casambi Bluetooth Mesh Connectivity (no sensors)
O	-	**SLVR**		None	Silvair Bluetooth Mesh	Open Standard Bluetooth Mesh Connectivity with Occupancy Sensing
OD	-	**SLVR**			Silvair Bluetooth Mesh	Open Standard Bluetooth Mesh Connectivity with Daylight Harvesting and Occupancy Sensing
	-	**SLVR**	None	None	Silvair Bluetooth Mesh	Open Standard Bluetooth Mesh Connectivity (no sensors)
	-	**OSRM**	None	None	Osram Encelium	Osram Encelium connectivity
OD	-	**OSRM**			Osram Encelium	Osram SensiLum Connectivity for Enclelium with Occupancy and Daylight Harvesting
OD	-	**ENL**			Enlighted ONE	Occupancy and Daylight Harvesting Capable Supports EnlightedONE room control as well and upgrade path for Enlighted Connected and Enlighted IoT offering advanced applications, analytics and insights for Space Utilization/Optimization, Asset Tracking, Energy Monitoring, HVAC Integration etc..
	-	**DALI**	None	None	DALI addressable wired Luminaire	Generic DALI addressable luminaire
	-	**ECOS**	None	None	Lutron Ecosystem	Lutron Ecosystem addressable wired luminaire NOTE: See Driver Selection options for specific driver