

Project: \_\_\_\_\_

Fixture Type: \_\_\_\_\_

Location: \_\_\_\_\_

Contact/Phone: \_\_\_\_\_

# 4" IC AND TC 700 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT REMODEL

## IC4RAL, TC4RAL (07LM) RECESSED HOUSING SQUARE TRIMS



### PRODUCT DESCRIPTION

Patent pending dedicated LED, Air-Loc® remodel housing with integral internally adjustable light engine • IC4RAL series can be completely covered with insulation and installs in shallow 2 x 6 construction • TC4RAL series for use in non-insulated areas (If installed where insulation is present, the insulation must be pulled back 3" from all sides of the TC housing) • Remodel housing for remodel application where back side of ceiling is not accessible • Installs through an opening in the ceiling from below • Secured in place by factory installed remodel springs • LED housing is designed to provide 50,000 hours of life • 5 year limited warranty on LED components.

### ENVIRONMENTALLY FRIENDLY, ENERGY EFFICIENT

- No harmful ultraviolet or infrared wavelengths
- No lead or mercury, RoHS compliant
- Comparable light output to 65W incandescent

### PRODUCT SPECIFICATIONS

**LED Light Engine** LED array attached to cast aluminum sliding heatsink integrated directly with housing provides superior heat transfer to ensure long life of the LED • Replaceable light engine mounts directly to inner housing assembly and incorporates the latest generation, high lumen output LED array • LEDs are binned within a 3-step MacAdam Ellipse exceeding ENERGY STAR® requirements for superior fixture to fixture color uniformity • 2700K, 3000K, 3500K, or 4000K color temperatures available • 90 CRI minimum.

**Optics** Three field interchangeable, TIR optics available in 18°, 30° and 40° beam angles • Module can accommodate one 2-inch diameter beam control lens or filter • Adjustable light engine module provides up to 35° vertical adjustment and 360° rotation.

**Aesthetic Trim Selections** Die cast aluminum square angle cut downlight, downlight only and lensed trim options • Downlights feature black insert to minimize glare at the aperture • Lensed trim 41LSQ is wet location approved for covered ceiling applications.

**LED Driver** Choice of dedicated 120 volt (120) driver or universal voltage (MVOLT) driver that accommodates input voltages from 120-277 volts AC at 50/60Hz • Power factor > 0.9 at 120V input • 120 volt only driver is dimmable with the use of most incandescent, magnetic low voltage and electronic low voltage wall box dimmers • Universal voltage driver is dimmable with the use of most 0-10V wall box dimmers • For a list of compatible dimmers, see [JUNOCLED-DIM](#).

**Life** Rated for 50,000 hours at 70% lumen maintenance.

**Labels** ENERGY STAR® Certified • Certified to the high efficacy requirements of California T24 JA8-2016 • UL listed for U.S. and Canada for damp locations (41LSQ listed for wet locations, covered ceilings) • Union made • UL and cUL.

**Testing** All reports are based on published industry procedures; field performance may differ from laboratory performance.

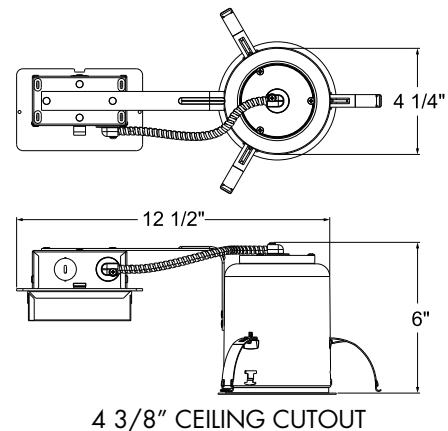
Specifications subject to change without notice.

### HOUSING FEATURES

**Housing** IC4RAL designed for use in IC (insulated ceiling) or non-IC construction • TC4RAL designed for use in non-IC construction • Aluminum housing sealed for Air-Loc® compliance • Housing is vertically adjustable to accommodate up to a 1 1/2" ceiling thickness.

**Junction Box** Pre-wired junction box provided with (5) 1/2" knockouts, (4) knockouts for 12/2 or 14/2 NM cable and ground wire • Junction box provided with removable access plates • Knockouts equipped with pryout slots • Quick connect electrical connectors supplied as standard for fast, secure installation.

### DIMENSIONS



### ELECTRICAL DATA

#### Dedicated 120V Only Driver Option (120) 120V

Input Power	10.5W (+/-5%)
Input Current	0.10A
Frequency	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class B (Residential)
Minimum starting temp	-25°C (-13°F)

#### Universal Voltage Driver (MVOLT ZT)

	120V	277V
Input Power	10.0W (+/-5%)	10.0W (+/-5%)
Input Current	0.04A	0.09A
Frequency	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class A (Commercial)	FCC Title 47 CFR, Part 15, Class A (Commercial)
Minimum starting temp	-20°C (-4°F)	-20°C (-4°F)

#### Lutron Hi-Lume® LED Driver (MVOLT ECOD)

	120V	277V
Input Power	11.1W (+/-5%)	11.3W (+/-5%)
Input Current	0.10A	0.05A
Frequency	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class A (Commercial)	FCC Title 47 CFR, Part 15, Class A (Commercial)
Minimum starting temp	0°C (32°F)	0°C (32°F)

# 4" IC AND TC 700 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT REMODEL

## IC4RAL (07LM), TC4RAL (07LM) RECESSED HOUSING SQUARE TRIMS

**ORDERING INFORMATION** Housing and trim can be ordered together or separate, but will always ship separately.

**Example:** IC4RAL 07LM 30K 90CRI FL 120 FRPC

Series	Lumens	Color Temperature	CRI	Distribution	Voltage	Driver
<b>IC4RAL</b> 4" LED Internally Adjustable Remodel IC Downlight	<b>07LM</b> 700 Nominal Lumens	<b>27K</b> 2700K	<b>90CRI</b> 90+ CRI	<b>FL</b> Flood	<b>120</b> 120V <b>MVOLT</b> Multi-Volt (120-277V)	<b>FRPC</b> Forward/ Reverse Phase Cut
		<b>30K</b> 3000K		<b>NFL</b> Narrow Flood		<b>ZT</b> 0 - 10V Dimming Driver
		<b>35K</b> 3500K		<b>SP</b> Spot		
		<b>40K</b> 4000K				

Notes: 120 must be ordered with FRPC. MVOLT must be ordered with ZT

**Example:** TC4RAL 07LM 30K 90CRI FL MVOLT ECOD

Series	Lumens	Color Temperature	CRI	Distribution	Voltage	Driver
<b>TC4RAL</b> 4" LED Internally Adjustable Remodel Non IC Downlight	<b>07LM</b> 700 Nominal Lumens	<b>27K</b> 2700K	<b>90CRI</b> 90+ CRI	<b>FL</b> Flood	<b>MVOLT</b> Multi-Volt	<b>ECOD</b> Lutron Hi-Lume EcoSystem, 1% Dimming
		<b>30K</b> 3000K		<b>NFL</b> Narrow Flood		
		<b>35K</b> 3500K		<b>SP</b> Spot		
		<b>40K</b> 4000K				

### Trim/Description

	<b>47LSQ BWH</b>	4" Square Adjustable Angle Cut Reflector Trim - Black, White Trim Ring
	<b>47LSQ HZWH</b>	4" Square Adjustable Angle Cut Reflector Trim - Haze, White Trim Ring
	<b>47LSQ WHZWH</b>	4" Square Adjustable Angle Cut Reflector Trim - Wheat Haze, White Trim Ring
	<b>47LSQ WWH</b>	4" Square Adjustable Angle Cut Reflector Trim - White, White Trim Ring
	<b>42LSQ BWH</b>	4" Square Downlight Reflector Trim - Black, White Trim Ring
	<b>42LSQ HZWH</b>	4" Square Downlight Reflector Trim - Haze, White Trim Ring
	<b>42LSQ WHZWH</b>	4" Square Downlight Reflector Trim - Wheat Haze, White Trim Ring
	<b>42LSQ WWH</b>	4" Square Downlight Reflector Trim - White, White Trim Ring
	<b>41LSQ WH*</b>	4" Square Adjustable Lens Shower Trim - White Trim Ring
		

Trim Size: 5" O.D.

Note: In Canada when insulation is present, Type IC fixtures must be used.

\* Wet Location

### Accessories (ordered separately)

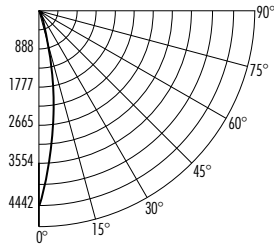
Catalog Number	Description
<b>CGF 200 MPINK</b>	Color Glass Filter - 2" Diameter - Medium Pink
<b>CGF 200 WRED</b>	Color Glass Filter - 2" Diameter - Warm Red
<b>CGF 200 DLBLUE</b>	Color Glass Filter - 2" Diameter - Daylight Blue
<b>CGF 200 MBLU</b>	Color Glass Filter - 2" Diameter - Medium Blue
<b>CGF 200 MAMB</b>	Color Glass Filter - 2" Diameter - Medium Amber
<b>CGF 200 MGRN</b>	Color Glass Filter - 2" Diameter - Medium Green
<b>DGF 200 DRED</b>	Dichroic Glass Filter - 2" Diameter Red
<b>DGF 200 MGRN</b>	Dichroic Glass Filter - 2" Diameter Medium Green
<b>DGF 200 MBLU</b>	Dichroic Glass Filter - 2" Diameter Medium Blue
<b>DGF 200 DYEL</b>	Dichroic Glass Filter - 2" Diameter Yellow (Dichroic)
<b>DGF 200 MAGEN</b>	Dichroic Glass Filter - 2" Diameter Magenta
<b>DGF 200 CYAN</b>	Dichroic Glass Filter - 2" Diameter Cyan
<b>DCCF 200 HL4250</b>	Dichroic Color Correction Filter - 2" Diameter - Halogen - to - Daylight
<b>DIFF 200</b>	Diffusion Glass Lens - 2" Diameter
<b>UVF 200</b>	UV Filter Lens - 2" Diameter
<b>HCLBL 200</b>	Hexagonal Cell Louver - Black - 2" Diameter
<b>LSPREAD 200</b>	Linear Spread Glass Lens - 2" Diameter
<b>PRISM 200</b>	Prismatic Glass Lens - 2" Diameter
<b>TIR2 SPT</b>	TIR Optic - Spot
<b>TIR2 NFLD</b>	TIR Optic - Narrow Flood
<b>TIR2 FLD</b>	TIR Optic - Flood

# 4" IC AND TC 700 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT REMODEL

## IC4RAL (07LM), TC4RAL (07LM) RECESSED HOUSING SQUARE TRIMS

### PHOTOMETRIC REPORT

Test Report#: PT09152802R  
 Catalog No: IC4AL 07LM 30K 90CRI SP 120  
 FRPC with 42LSQ HZWH, Downlight Cone Haze  
 Finish Square Trim and Spot Optic  
 Luminaire Spacing Criteria: 0.30  
 Luminaire LPW: 64



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	4442
5	3387
15	922
25	164
35	23
45	3
55	0
65	0
75	0
85	0
90	0

Multipliers:  
 27K - 0.93 35K - 1.00  
 30K - 0.96 40K - 1.03

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
 Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	48	44	41
5.0'	31	28	26
6.0'	21	20	18
7.0'	17	16	15
8.0'	14	13	12
9.0'	10	10	9
10.0'	8	7	6

### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	650	N/A	96.0
0-40°	672	N/A	99.4
0-60°	677	N/A	100.0
0-90°	677	N/A	100.0

### INITIAL FOOTCANDLES

(One Unit, 10.5W, 17.0° Beam)

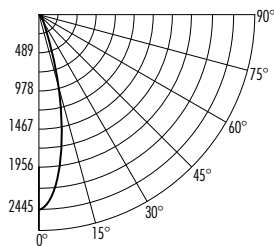
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	277.6	1.2
6	123.4	1.8
8	69.4	2.4
10	44.4	3.0

### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	631
55	0
65	0
75	0
85	0

### PHOTOMETRIC REPORT

Test Report#: PT09152804R  
 Catalog No: IC4AL 07LM 30K 90CRI NFL 120  
 FRPC with 42LSQ HZWH, Downlight Cone Haze  
 Finish Square Trim and Narrow Flood Optic  
 Luminaire Spacing Criteria: 0.48  
 Luminaire LPW: 61



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	2445
5	2302
15	1089
25	158
35	43
45	5
55	0
65	0
75	0
85	0
90	0

Multipliers:  
 27K - 0.93 35K - 1.00  
 30K - 0.96 40K - 1.03

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
 Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	45	41	38
5.0'	29	27	24
6.0'	20	18	17
7.0'	16	15	14
8.0'	13	12	11
9.0'	10	9	8
10.0'	7	7	6

### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	604	N/A	93.8
0-40°	637	N/A	98.9
0-60°	644	N/A	100.0
0-90°	644	N/A	100.0

### INITIAL FOOTCANDLES

(One Unit, 10.5W, 27.7° Beam)

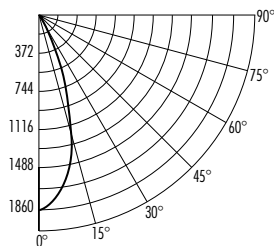
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	152.8	2.0
6	67.9	3.0
8	38.2	3.9
10	24.5	4.9

### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	939
55	0
65	0
75	0
85	0

### PHOTOMETRIC REPORT

Test Report#: PT09152806R  
 Catalog No: IC4AL 07LM 30K 90CRI FL 120  
 FRPC with 42LSQ HZWH, Downlight Cone Haze  
 Finish Square Trim and Flood Optic  
 Luminaire Spacing Criteria: 0.60  
 Luminaire LPW: 71



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1860
5	1788
15	1186
25	370
35	79
45	7
55	0
65	0
75	0
85	0
90	0

Multipliers:  
 27K - 0.93 35K - 1.00  
 30K - 0.96 40K - 1.03

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
 Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	52	47	42
5.0'	33	30	27
6.0'	23	21	19
7.0'	19	17	15
8.0'	15	13	12
9.0'	11	10	9
10.0'	8	8	7

### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	673	N/A	90.6
0-40°	732	N/A	98.6
0-60°	743	N/A	100.0
0-90°	743	N/A	100.0

### INITIAL FOOTCANDLES

(One Unit, 10.5W, 34.7° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	116.3	2.5
6	51.7	3.7
8	29.1	5.0
10	18.6	6.2

### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	1376
55	0
65	0
75	0
85	0

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field.

# 4" IC AND TC 700 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT REMODEL

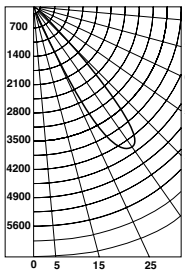
## IC4RAL (07LM), TC4RAL (07LM) RECESSED HOUSING SQUARE TRIMS

### PHOTOMETRIC REPORT

**Test Report:** PT09153002R  
**Catalog No:** IC4AL 07LM 35K 90CRI  
 SP 120 FRPC with 47LSQ HZWH and Spot Optic  
**Watts:** 10.5  
**Lumens:** 730  
**Luminaire LPW:** 69

### Candlepower Distribution (Candelas)

Degrees Vertical	Candela
0°	63
5°	122
10°	271
15°	527
20°	913
25°	1746
30°	3337
35°	4499
40°	3473
45°	1794
50°	841
55°	275
60°	71
65°	23
70°	10
75°	3
80°	0
85°	0
90°	0

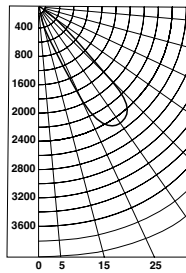


### PHOTOMETRIC REPORT

**Test Report:** PT09152922R  
**Catalog No:** IC4AL 07LM 35K 90CRI  
 NFL 120 FRPC with 47LSQ HZWH and Narrow Flood Optic  
**Watts:** 10.5  
**Lumens:** 735  
**Luminaire LPW:** 70

### Candlepower Distribution (Candelas)

Degrees Vertical	Candela
0°	63
5°	108
10°	208
15°	487
20°	1121
25°	1909
30°	2407
35°	2573
40°	2400
45°	1928
50°	1220
55°	448
60°	106
65°	54
70°	24
75°	6
80°	0
85°	0
90°	0

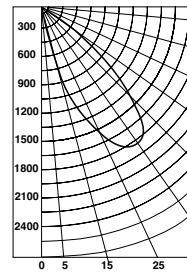


### PHOTOMETRIC REPORT

**Test Report:** PT09152902R  
**Catalog No:** IC4AL 07LM 35K 90CRI  
 FL 120 FRPC with 47LSQ HZWH and Flood Optic  
**Watts:** 10.5  
**Lumens:** 780  
**Luminaire LPW:** 74

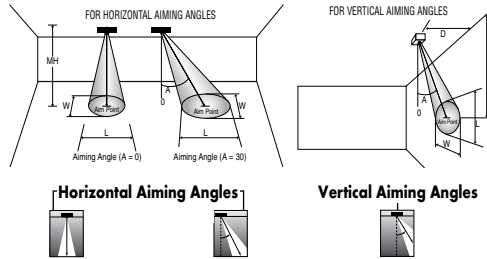
### Candlepower Distribution (Candelas)

Degrees Vertical	Candela
0°	118
5°	238
10°	467
15°	796
20°	1204
25°	1581
30°	1821
35°	1884
40°	1750
45°	1463
50°	1044
55°	541
60°	281
65°	140
70°	54
75°	9
80°	0
85°	0
90°	0



**CBCP** • Centerbeam candlepower  
**FC** • Footcandles at beam center (aim point)

In vertical aiming applications, aim point (X) is determined by dividing distance from the wall (D) by the tangent of the desired aim angle (A) (0.5774 for 30°, 1.0 for 45°).



FIXTURE	Beam Type	Beam Spread°	CBCP	0°		30°			30°						
				MH	FC	L	W	FC	L	W	D	FC	X	L	W
<b>IC4AL (07LM) LED, 3500K Spot</b>	SP	18°	4499	4	281	1.3	1.3	183	1.7	1.5	2	141	3.5	2.7	1.3
				6	125	1.9	1.9	81	2.6	2.2	3	62	5.2	4.1	1.9
				8	70	2.5	2.5	46	3.4	2.9	4	35	6.9	5.5	2.5
				10	45	3.2	3.2	29	4.3	3.7	5	22	8.7	6.9	3.2
<b>IC4AL (07LM) LED, 3500K Narrow Flood</b>	NFL	30°	2573	4	161	2.1	2.1	104	2.9	2.5	2	80	3.5	5.5	2.1
				6	71	3.2	3.2	46	4.4	3.7	3	36	5.2	8.2	3.2
				8	40	4.3	4.3	26	5.9	5.0	4	20	6.9	10.9	4.3
				10	26	5.4	5.4	17	7.3	6.2	5	13	8.7	13.7	5.4
<b>IC4AL (07LM) LED, 3500K Flood</b>	FL	40°	1884	4	118	2.9	2.9	76	4.1	3.4	2	59	3.5	9.7	2.9
				6	52	4.4	4.4	34	6.1	5.0	3	26	5.2	14.5	4.4
				8	29	5.8	5.8	19	8.1	6.7	4	15	6.9	19.3	5.8
				10	19	7.3	7.3	12	10.2	8.4	5	9	8.7	24.2	7.3
				12	13	8.7	8.7	8	12.2	10.1	6	7	10.4	29.0	8.7

Multipliers:  
 27K - 0.93    35K - 1.00  
 30K - 0.96    40K - 1.03

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field.