

## RigidLam<sup>®</sup> LVL Stair Stringers



## Step Up To RigidLam<sup>®</sup> LVL Stair Stringers

- Straight and Consistent
- Predictable Performance
- Cut From Standard Inventory
- Minimize Waste
- Fewer Call Backs
- Build Longer, Stronger, Solid Stairs
- Product and Performance Warranty



# RIGIDLAM® LVL STAIR STRINGERS - Maximum Horizontal Stair Stringer Run

1.3E RigidLam LVL					
1½" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-10"	5'-5"	5'-2"	5'-1"	5'-0"
11⅞"	8'-8"	9'-10"	9'-4"	9'-3"	9'-0"
14"	12'-2"	13'-9"	13'-1"	12'-11"	12'-7"
16"	15'-5"	17'-5"	16'-7"	16'-5"	15'-11"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-3"	4'-9"	4'-7"	4'-6"	4'-5"
11⅞"	7'-3"	8'-2"	7'-9"	7'-8"	7'-6"
14"	9'-11"	11'-2"	10'-8"	10'-6"	10'-3"
16"	12'-5"	14'-0"	13'-5"	13'-3"	12'-11"

1.5E RigidLam LVL					
1½" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-0"	5'-8"	5'-5"	5'-4"	5'-2"
11⅞"	9'-1"	10'-3"	9'-9"	9'-8"	9'-5"
14"	12'-8"	14'-4"	13'-8"	13'-6"	13'-2"
16"	16'-1"	18'-2"	17'-4"	17'-1"	16'-8"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-5"	5'-0"	4'-9"	4'-8"	4'-7"
11⅞"	7'-7"	8'-6"	8'-2"	8'-0"	7'-10"
14"	10'-4"	11'-8"	11'-2"	11'-0"	10'-8"
16"	13'-0"	14'-8"	14'-0"	13'-9"	13'-5"

2.0E RigidLam LVL					
1½" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-6"	6'-2"	5'-11"	5'-10"	5'-8"
11⅞"	9'-11"	11'-3"	10'-8"	10'-6"	10'-3"
14"	13'-10"	15'-8"	15'-0"	14'-9"	14'-4"
16"	17'-7"	19'-10"	19'-0"	18'-9"	18'-3"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-10"	5'-5"	5'-2"	5'-1"	5'-0"
11⅞"	8'-3"	9'-3"	8'-10"	8'-9"	8'-6"
14"	11'-3"	12'-9"	12'-2"	12'-0"	11'-8"
16"	14'-2"	15'-11"	15'-3"	15'-0"	14'-8"

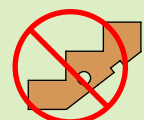
## How To Use Chart

- Determine **grade** and **thickness** of Roseburg RigidLam LVL
- Locate appropriate table
- Locate appropriate load (**40** or **100** psf live load)

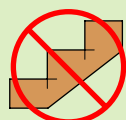
## General Notes

- For 40/12 loading (residential), stringer runs are based on a rise of 7-3/4" (maximum per 2006 IRC) and a run of 11" (1" longer than minimum run of 10" per 2006 IRC).
- For 100/12 loading (commercial), stringer runs are based on a rise of 7" (maximum per 2006 IBC) and a run of 11" (minimum per 2006 IBC).
- Consult a design professional for allowable stringer run if above rise and/or run values are exceeded.
- Stringer runs are based on deflection criteria of L/360 Live Load and L/240 Total Load.
- All stringer runs are based on a 100% duration of load.
- Stringer runs account for self-weight of member.

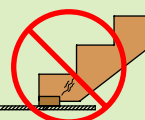
## Installation Guidelines



**DO NOT** notch or drill holes in stringer



**DO NOT** overcut stringer. Use hand saw to finish cut



**DO NOT** support stringer on nailer only



**DO NOT** walk on stringers until treads are attached

1.3E RigidLam LVL					
1¾" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-0"	5'-8"	5'-5"	5'-4"	5'-3"
11⅞"	9'-1"	10'-3"	9'-10"	9'-8"	9'-5"
14"	12'-9"	14'-4"	13'-9"	13'-6"	13'-2"
16"	16'-2"	18'-2"	17'-5"	17'-2"	16'-9"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-5"	5'-0"	4'-9"	4'-9"	4'-7"
11⅞"	7'-7"	8'-6"	8'-2"	8'-1"	7'-10"
14"	10'-5"	11'-8"	11'-2"	11'-0"	10'-9"
16"	13'-0"	14'-8"	14'-0"	13'-10"	13'-6"

1.5E RigidLam LVL					
1¾" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-3"	5'-11"	5'-8"	5'-7"	5'-5"
11⅞"	9'-6"	10'-9"	10'-3"	10'-1"	9'-10"
14"	13'-3"	15'-0"	14'-4"	14'-2"	13'-9"
16"	16'-10"	18'-11"	18'-2"	17'-11"	17'-6"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	4'-8"	5'-3"	5'-0"	4'-11"	4'-10"
11⅞"	7'-11"	8'-11"	8'-6"	8'-5"	8'-2"
14"	10'-10"	12'-3"	11'-8"	11'-6"	11'-3"
16"	13'-7"	15'-4"	14'-8"	14'-5"	14'-1"

2.0E RigidLam LVL					
1¾" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
	2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
<b>40 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-9"	6'-6"	6'-2"	6'-1"	5'-11"
11⅞"	10'-4"	11'-9"	11'-3"	11'-1"	10'-9"
14"	14'-6"	16'-5"	15'-8"	15'-6"	15'-1"
16"	18'-5"	20'-9"	19'-10"	19'-7"	19'-1"
<b>100 PSF Live Load and 12 PSF Dead Load</b>					
9½"	5'-1"	5'-8"	5'-5"	5'-4"	5'-3"
11⅞"	8'-7"	9'-9"	9'-3"	9'-2"	8'-11"
14"	11'-10"	13'-4"	12'-9"	12'-7"	12'-3"
16"	14'-10"	16'-9"	15'-11"	15'-9"	15'-4"

- Locate appropriate gross depth of LVL (9-1/2", 11-7/8", 14" or 16")
- Determine maximum allowable horizontal stringer run based on tread width and number of stringers

- Stringers are unstable until connections at low and high ends are completed and treads are attached.
- Use subfloor adhesive to minimize squeaks and improve stair performance.
- When stringer is in direct contact with concrete, use moisture barrier.
- Refer to appropriate building code for story height restrictions.
- For loading and/or framing conditions outside the scope of this document, consult a design professional.
- Refer to Roseburg's EWP Design Guide for RigidLam LVL storage and handling information.

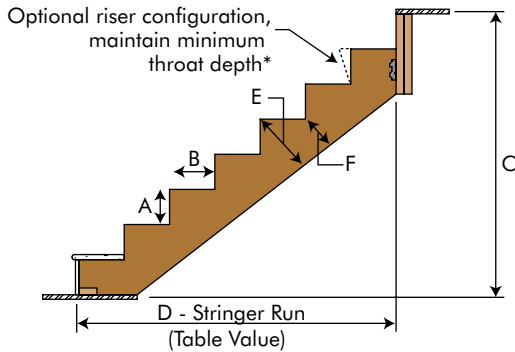
**RIGIDLAM LVL CODE EVALUATION**  
ICC ESR-1210

# RigidLam® LVL Allowable Design Stresses<sup>1</sup>

		1.3E RigidLam LVL	1.5E RigidLam LVL	2.0E RigidLam LVL
Modulus of Elasticity (MOE) <sup>2</sup> – Edgewise or Flatwise	E (psi) =	1,300,000	1,500,000	2,000,000
Bending – Edgewise <sup>3,4</sup>	F <sub>b</sub> edge (psi) =	2,250	2,250	3,100
Bending – Flatwise	F <sub>b</sub> flat (psi) =	2,250	2,250	3,100
Horizontal Shear - Edgewise	F <sub>v</sub> edge (psi) =	200	220	290
Horizontal Shear - Flatwise	F <sub>v</sub> flat (psi) =	130	130	130
Compression Perp. To Grain <sup>2</sup> - Edgewise	F <sub>c perp</sub> edge (psi) =	560	575	750
Compression Perp. To Grain <sup>2</sup> - Flatwise	F <sub>c perp</sub> flat (psi) =	500	500	500
Compression Parallel to Grain	F <sub>c para</sub> (psi) =	1,950	1,950	3,000
Tension Parallel to Grain <sup>5</sup>	F <sub>t</sub> (psi) =	1,500	1,500	2,100
MOE for stability calculations <sup>2</sup>	E <sub>min</sub> (psi) =	660,660	762,300	1,056,958

- These allowable design stresses apply to dry service conditions.
- No increase is allowed for duration of load.
- For depths other than 12" multiply F<sub>b</sub> edge by (12/d)<sup>1/8</sup> where d = depth of member (in).
- A factor of 1.04 may be applied for repetitive members as defined in the National Design Specification for Wood Construction.
- Tabulated F<sub>b</sub> flat values are based on a thickness of 1 3/4". For other thicknesses, when loaded flatwise, multiply F<sub>b</sub> flat by (1.75/t)<sup>1/5</sup>, where t is the LVL thickness in inches. For thicknesses less than 1 3/4", use the tabulated value.
- Tensile stress is based on a 4-foot gage length. For greater lengths, multiply F<sub>t</sub> by (4/L)<sup>1/9</sup> where L=length in feet. For lengths less than 4 feet, use the tabulated value.

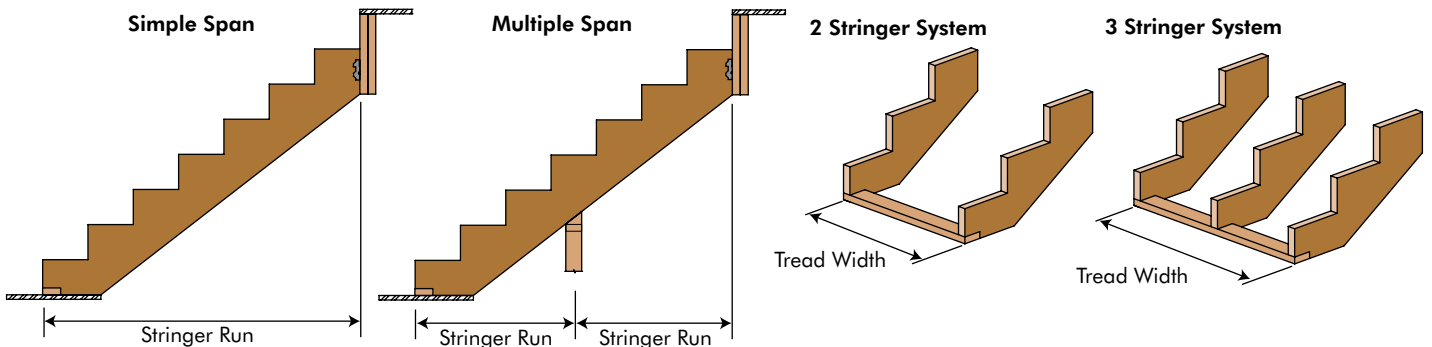
## Stair Stringer Terms and Definitions



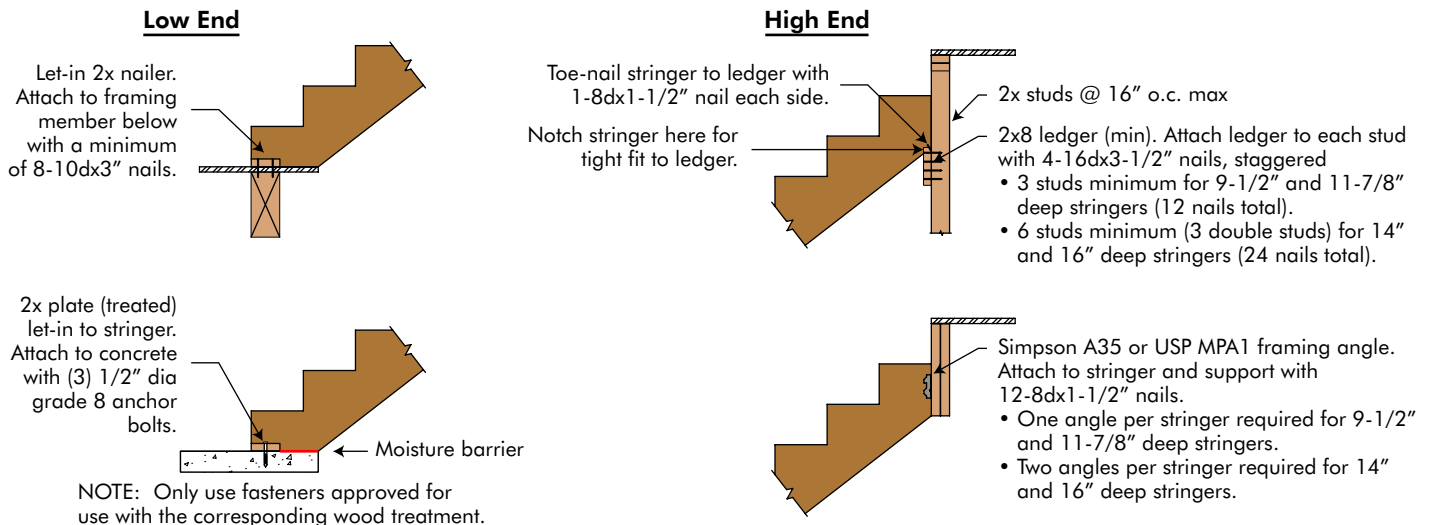
- A - Step Rise: Vertical rise of a single step
- B - Step Run: Horizontal length of a single step
- C - Total Rise: Vertical distance from top of finished framing on low end to top of finished framing on high end
- D - Stringer Run: Out-to-out horizontal span of stringer (table value)
- E - Gross Stringer Depth: Depth of stringer before steps are cut
- F - Throat Depth\*: Net stringer depth after steps are cut (measured perpendicular to bottom edge of stringer)

Stringer Depth	*Minimum Throat Depth	
	Residential - 7-3/4" rise & 11" run	Commercial - 7" rise & 11" run
9-1/2" LVL	3-1/8"	3-9/16"
11-7/8" LVL	5-1/2"	5-15/16"
14" LVL	7-5/8"	8-1/16"
16" LVL	9-5/8"	10-1/16"

## Stair Stringer Configurations



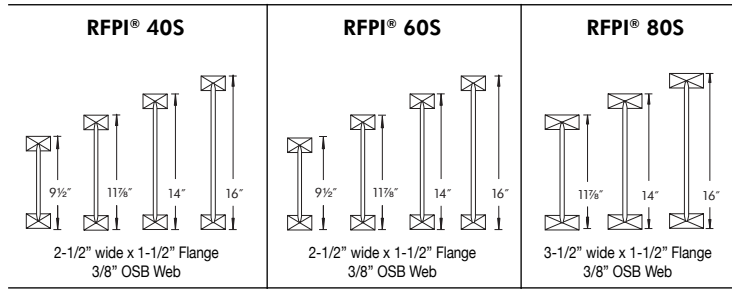
## Connection Details - 40 psf live load & 12 psf dead load (for higher loading, consult design professional)



# The Roseburg Framing System®

The Roseburg Framing System® consists of: RFPI® Joists used in floor and roof construction; RigidLam® LVL which is used for headers, beams, columns, studs and stair stringers; and RigidRim® Rim Board. All of the components are engineered to the industry's highest standards to help contractors build solid, durable, and better performing framing systems compared to ordinary dimension lumber.

## SOLID SAWN FLANGE RFPI® JOISTS

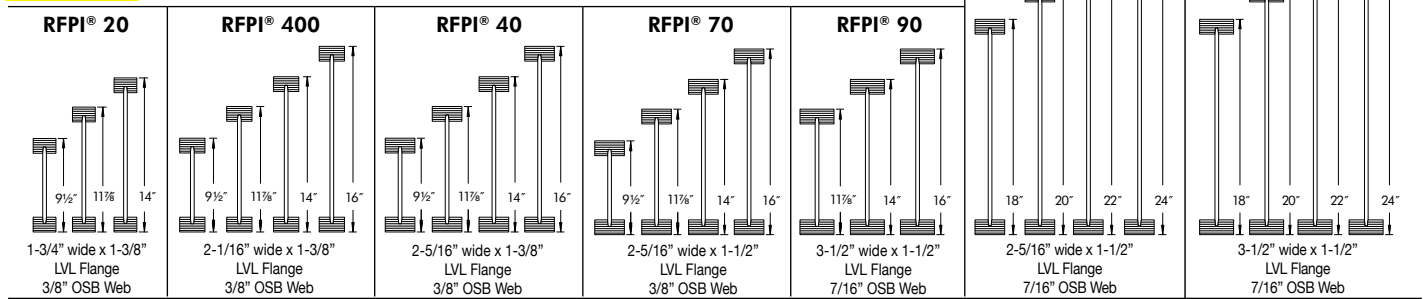


## RIGIDRIM® RIM BOARD DESIGN PROPERTIES

	Thickness	Horizontal Load (PLF)	Vertical Load (PLF)	Lag Screw (1/2") (lbs)	Post Load (lbs)
<b>RigidRim® OSB</b>	1-1/8"	180 (8d box or common)	4400 <sup>1</sup> /3000 <sup>2</sup>	350	3500
<b>RigidRim® Plus OSB</b>	1-1/8" or 1-1/4"	200 (8d box or common)	4850 <sup>1</sup> /3200 <sup>2</sup>	350	3500
<b>RigidRim® Seismic OSB</b>	1-1/4"	240 (8d common)	5700 <sup>1</sup> /3500 <sup>2</sup>	400	5900
<b>1.3E RigidRim® LVL</b>	1-1/2"	215 (8d box or common)	4900 <sup>1</sup> /NA <sup>2</sup>	400	3500

1 - Depth ≤ 16"  
2 - 16" < Depth ≤ 24"

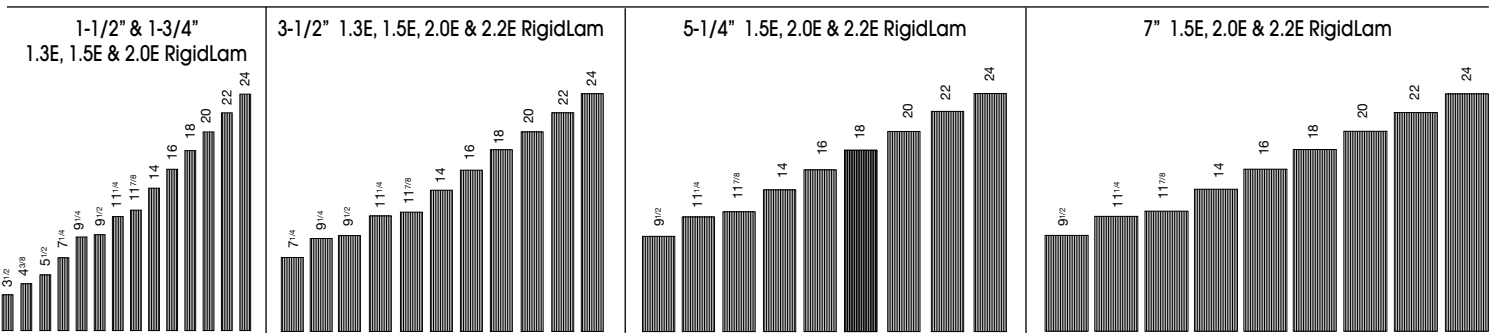
## LVL FLANGE RFPI® JOISTS



## RFPI® JOIST ALLOWABLE SPANS - 40 PSF LIVE LOAD AND 10 PSF DEAD LOAD

Joist Depth	Joist Series	40/10 SIMPLE SPAN				40/10 MULTIPLE SPAN				Joist Depth	Joist Series	40/10 SIMPLE SPAN				40/10 MULTIPLE SPAN			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.			12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9-1/2"	RFPI® 20	17' - 2"	15' - 9"	14' - 10"	13' - 10"	18' - 9"	17' - 1"	16' - 2"	14' - 0"	14"	RFPI® 20	23' - 4"	21' - 4"	20' - 2"	18' - 6"	25' - 5"	22' - 7"	19' - 2"	15' - 3"
	RFPI® 40S	18' - 0"	16' - 5"	15' - 6"	14' - 6"	19' - 7"	17' - 11"	16' - 4"	14' - 7"		RFPI® 40S	24' - 4"	22' - 3"	20' - 6"	18' - 4"	25' - 11"	22' - 5"	20' - 5"	18' - 3"
	RFPI® 400	18' - 0"	16' - 5"	15' - 6"	14' - 6"	19' - 7"	17' - 10"	16' - 10"	15' - 9"		RFPI® 400	24' - 4"	22' - 3"	21' - 0"	19' - 7"	26' - 7"	24' - 3"	22' - 3"	17' - 9"
	RFPI® 40	18' - 7"	16' - 11"	16' - 0"	14' - 11"	20' - 2"	18' - 5"	17' - 5"	16' - 2"		RFPI® 40	25' - 2"	22' - 11"	21' - 8"	20' - 2"	27' - 5"	25' - 0"	23' - 7"	19' - 9"
	RFPI® 60S	18' - 11"	17' - 4"	16' - 4"	15' - 3"	20' - 8"	18' - 10"	17' - 9"	16' - 6"		RFPI® 60S	25' - 9"	23' - 6"	22' - 2"	20' - 10"	28' - 0"	25' - 7"	24' - 1"	19' - 9"
	RFPI® 70	19' - 9"	18' - 0"	17' - 0"	15' - 10"	21' - 6"	19' - 7"	18' - 5"	17' - 2"		RFPI® 70	26' - 10"	24' - 5"	23' - 0"	21' - 5"	29' - 3"	26' - 7"	24' - 9"	19' - 9"
11-7/8"	RFPI® 20	20' - 6"	18' - 9"	17' - 9"	16' - 6"	22' - 4"	20' - 5"	18' - 10"	15' - 3"	16"	RFPI® 40S	26' - 11"	24' - 3"	22' - 1"	19' - 9"	27' - 11"	24' - 2"	22' - 0"	19' - 8"
	RFPI® 40S	21' - 5"	19' - 7"	18' - 6"	16' - 8"	23' - 5"	20' - 5"	18' - 7"	16' - 7"		RFPI® 400	27' - 0"	24' - 8"	23' - 4"	20' - 10"	29' - 6"	26' - 4"	22' - 3"	17' - 9"
	RFPI® 400	21' - 5"	19' - 7"	18' - 6"	17' - 3"	23' - 4"	21' - 4"	20' - 1"	17' - 9"		RFPI® 40	27' - 10"	25' - 5"	24' - 0"	22' - 4"	30' - 4"	27' - 8"	24' - 9"	19' - 9"
	RFPI® 40	22' - 1"	20' - 2"	19' - 0"	17' - 9"	24' - 1"	22' - 0"	20' - 8"	19' - 3"		RFPI® 60S	28' - 6"	26' - 0"	24' - 7"	22' - 11"	31' - 1"	28' - 4"	24' - 9"	19' - 9"
	RFPI® 60S	22' - 7"	20' - 8"	19' - 6"	18' - 2"	24' - 8"	22' - 6"	21' - 2"	19' - 7"		RFPI® 70	29' - 9"	27' - 1"	25' - 6"	23' - 9"	32' - 5"	29' - 6"	24' - 9"	19' - 9"
	RFPI® 70	23' - 7"	21' - 6"	20' - 3"	18' - 10"	25' - 8"	23' - 5"	22' - 0"	19' - 9"		RFPI® 90	33' - 4"	30' - 4"	28' - 7"	26' - 7"	36' - 5"	33' - 1"	31' - 1"	26' - 7"

## AVAILABLE RIGIDLAM® LVL GRADES & SIZES



Not all grades and sizes are available in all markets. Contact your Roseburg representative for availability. The location and contact information for your regional EWP representative can be found on our company website [www.roseburg.com](http://www.roseburg.com) or by calling (800) 347-7260.



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