

CHOICE LINEAR FUNDAMENTALS



Don't let the pricing of EssentialLEDs Choice Linear products fool you. You'll get the same great extrusions, lensing and accessories - not to mention VLT's amazing service - all at a fraction of the regular price.

EssentialLEDs® Choice Linear products provide bright, even linear lighting for a variety of interior applications, including architectural accents, coves, niches, millwork, task and display lighting. EssentialLEDs® Choice fixtures can be specified using any of the 7 LED board options shown on the next page, broken down into two categories:

1. Narrow Pitch Boards - Our best value LED boards also have nearly no spacing between LEDs, creating a near seamless line of light.
2. Standard Pitch Boards - These LED boards boast Nichia LEDs with 95 CRI and CCTs up to 5000°K.
3. Dim-to-Warm Boards - Offers single channel Dim-to-Warm, 3000°K to 1800°K, when using a HELD-5n1 Driver.

The LED boards above can be used in any of 15 linear extrusions, with standard fixture sizes ranging from 1 inch up to approximately 12 feet (finished length options vary based on extrusion and LED board choices; see Fixture Length & Wattage Table for exact lengths).

EssentialLEDs® Linear products are fully dimmable and available in multiple standard and custom finishes; lensed extrusions can include diffusing lenses. Visit www.vltcorp.com for application photos and the most recent IES files.

LENSING	Lensed and unlensed options available; lens options include clear or three levels of Opal. Focusing lenses available for 7SL, 8SL, 8CL, 8FL, 9SL, 2RL, 3RL, 1QL and 2QL extrusions.
FINISH	All fixtures available in silver or black anodized finish; custom finishes upon request.
LENGTHS	See Length & Wattage Tables for all standard length options; Standard lengths up to 12ft.
ELECTRICAL	<p>Driver Type: Constant Voltage, Class 2 UL Listed</p> <p>Input Voltage: 24vDC </p> <p>Dimming: MLV, ELV, 0-10V, DALI, DMX</p> <p>Feed Wire: 96" [2.44m] of 20 AWG Wire [1.02mm²], Male Connector</p> <p>Operating Ambient Temperature: -22° to 104° F [-30° to 40° C]</p> <p>Humidity: 90% RH Non-Condensing</p> <p>Electrostatic Sensitive Device: VLT Recommends using additional surge protection with this unit (supplied by others). Surge damage is not covered by warranty </p>
LIFE & WARRANTY	50,000 HR lifetime (T _a = -20°C to 60°C; T _c max 67°C); 5 year limited warranty
MOUNTING	Mounting options differ according to extrusion; may include fixed and/or adjustable clips, mounting end caps, bushings, free-standing mount, recessed options; up to IP67
LISTINGS & TESTS	<p>cUL_{us} (UL 2108 & 8750); CE Marked; LM79, LM80; Title 24, JA8-2016¹; Dry/Damp. (IP Ratings for reference purposes only)</p> <p>1R and 1S NOT UL Listed for closet space; All extrusions UL Listed for closet space when using 1435 board.</p> <p>The EU's Restriction of Hazardous Substances Directive (RoHS) restricts the use of six hazardous substances* in electrical and electronic equipment (* Lead (Pb), Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls and Polybrominated diphenyl ether (PBDE)).</p> <p>¹ Please consult factory for JA8-2016 compliant driver selection.</p>

VLT reserves the right to change specifications without notice. Please visit www.vltcorp.com for current cut sheets. **MADE IN USA** 

NARROW PITCH LED BOARDS

LED BOARD	1435	2435	3435	4435
LUMEN OUTPUT ¹	288 lm/ft [945 lm/m]	384 lm/ft [1260 lm/m]	478 lm/ft [1568 lm/m]	610 lm/ft [2000 lm/m]
POWER CONSUMPTION	2.74 w/ft [9 w/m]	3.66 w/ft [12 w/m]	5.52 w/ft [18 w/m]	5.79 w/ft [19 w/m]
COUPON LENGTH	0.98" [25mm]	0.98" [25mm]	0.98" [25mm]	0.98" [25mm]
LED PITCH	3.57mm	3.57mm	3.57mm	3.57mm
CRI / TM30	90+ / Rf 84, Rg 90			
CCT OPTIONS	2300K, 2700K, 3000K, 3500K, 4000K			
BINNING	3 Step MacAdam Ellipse			
LED EFFICACY ¹	105 lm/w	105 lm/w	105 lm/w	105 lm/w

Pitch is the term used to describe the spacing between LEDs on a circuit board. Our Narrow Pitch LED Boards have LEDs spaced very closely together, resulting in almost no "dot" pattern when diffused by our Opal lenses - even in our smallest extrusions.

Our Narrow Pitch LED Boards come in three lumen packages with all LEDs binned to 3 MacAdam Ellipses. These boards have a CRI of 90 or higher to meet California's Title 24 requirements.

STANDARD PITCH LED BOARDS

LED BOARD	1320	2320	4320
LUMEN OUTPUT ¹	222 lm/ft [728 lm/m]	335 lm/ft [1098 lm/m]	590 lm/ft [1935 lm/m]
POWER CONSUMPTION	2.0 w/ft [6.6 w/m]	2.8 w/ft [9.2 w/m]	5.9 w/ft [19.4 w/m]
COUPON LENGTH	3.28" [83.3mm]	3.28" [83.3mm]	3.28" [83.3mm]
LED PITCH	11.9mm	11.9mm	11.9mm
CRI / TM30	95+ / Rf84, Rg93		
CCT OPTIONS	2700K, 3000K, 3500K, 4000K, 4500K		
APPLIED LED	Nichia 3030 SMD	Nichia 3030 SMD	Nichia 3030 SMD
BINNING	2 Step MacAdam Ellipse		
LED EFFICACY ¹	111 lm/w	119 lm/w	100 lm/w

This series of LED Boards offers Nichia LEDs with an amazing 95 CRI (or higher). Lumen output ranges from 222 lm/ft to 590 lm/ft to satisfy the needs of many different interior lighting applications.

Our Standard Pitch LED Boards are all binned to 2 MacAdam Ellipses, matching our premium EssentialLEDs Linear offerings at a fraction of the price.

¹ Based on 3500K CCT

FIXTURE LENGTH & WATTAGE TABLE

Use Code numbers below to specify fixture lengths for ML1, 1S, 4SL, 1R, 2RL, 1EL, 1QL and 5SLW extrusions.

A finished fixture length that differs from these lengths would be considered a Custom Length. Custom length fixtures have a finished length (including end caps) exactly as specified; an LED board that is the next size down is centered in the custom length fixture. Narrow Pitch LED Boards can be cut into increments as small as 25mm [1"]. Standard Pitch LED Boards are cuttable in increments of 83.3mm [3.28"]. Please contact factory for more information.

LED fixtures have a generous field angle, so a fixture does not need to extend the full length of a cabinet, shelf or display case for the area to be fully lit. Custom fixtures are most often used where the fixture is visible and an exact length is desired for aesthetic reasons. (Field Angle may be affected by lensing choice).

Narrow Pitch				
CODE	ML1, 1S, 4SL, 1R, 2RL, 1EL, 1QL, 5SLW ¹	1435	2435	3435
4	4.72" [120mm]	0.9w	1.2w	1.8w
8	8.66" [220mm]	1.80w	2.47w	3.68w
12	12.60" [320mm]	2.7w	3.7w	5.5w
16	16.54" [420mm]	3.6w	4.9w	7.3w
20	20.47" [520mm]	4.5w	6.1w	9.2w
24	24.41" [620mm]	5.4w	7.4w	11.0w
28	28.35" [720mm]	6.3w	8.6w	12.8w
32	32.28" [820mm]	7.2w	9.8w	14.7w
36	36.22" [920mm]	8.1w	11.1w	16.5w
40	40.16" [1020mm]	9.0w	12.3w	18.4w
44	44.09" [1120mm]	9.9w	13.5w	20.2w
48	48.03" [1220mm]	10.8w	14.8w	22.0w
52	51.97" [1320mm]	11.7w	16.0w	23.9w
56	55.91" [1420mm]	12.6w	17.2w	25.7w
60	59.84" [1520mm]	13.5w	18.5w	27.6w
64	63.78" [1620mm]	14.4w	19.7w	29.4w
68	67.72" [1720mm]	15.3w	20.9w	31.2w
72	71.65" [1820mm]	16.2w	22.2w	33.1w
76	75.59" [1920mm]	17.1w	23.4w	34.9w
80	79.53" [2020mm]	18.0w	24.6w	36.8w
84	83.46" [2120mm]	18.9w	25.9w	38.6w
88	87.40" [2220mm]	19.8w	27.1w	40.4w
92	91.34" [2320mm]	20.7w	28.3w	42.3w
96	95.28" [2420mm]	21.6w	29.6w	44.1w

¹ 5SLW adds 0.63" [16mm] to length. 5SLW only available up to 72.29" [1836mm]

FIXTURE LENGTH & WATTAGE TABLE

Use Code numbers below to specify fixture lengths for 7SL, 8SL, 8CL, 8FL, 9SL, 3RL and 2QL extrusions.

Narrow Pitch					
CODE	7SL, 8CL, 8FL ² , 8SL, 9SL, 3RL & 2QL	1435	2435	3435	4435 ¹
4	4.29" [109mm]	0.9w	1.2w	1.8w	1.9w
8	8.23" [209mm]	1.8w	2.4w	3.6w	3.8w
12	12.17" [309mm]	2.7w	3.7w	5.5w	5.8w
16	16.10" [409mm]	3.6w	4.9w	7.3w	7.7w
20	20.04" [509mm]	4.5w	6.1w	9.2w	9.6w
24	23.98" [609mm]	5.4w	7.4w	11.0w	11.6w
28	27.91" [709mm]	6.3w	8.6w	12.8w	13.5w
32	31.85" [809mm]	7.2w	9.8w	14.7w	15.4w
36	35.79" [909mm]	8.1w	11.1w	16.5w	17.4w
40	39.72" [1009mm]	9.0w	12.33w	18.40w	19.33w
44	43.66" [1109mm]	9.90w	13.5w	20.2w	21.2w
48	47.60" [1209mm]	10.8w	14.8w	22.0w	23.2w
52	51.54" [1309mm]	11.7w	16.0w	23.9w	25.1w
56	55.47" [1409mm]	12.6w	17.2w	25.7w	27.0w
60	59.41" [1509mm]	13.5w	18.5w	27.6w	29.0w
64	63.35" [1609mm]	14.4w	19.7w	29.4w	30.9w
68	67.28" [1709mm]	15.3w	20.9w	31.2w	32.8w
72	71.22" [1809mm]	16.2w	22.2w	33.1w	34.8w
76	75.16" [1909mm]	17.1w	23.4w	34.9w	36.7w
80	79.09" [2009mm]	18.0w	24.6w	36.8w	38.6w
84	83.03" [2109mm]	18.9w	25.9w	38.6w	40.6w
88	86.97" [2209mm]	19.8w	27.1w	40.4w	42.5w
92	90.91" [2309mm]	20.7w	28.3w	42.3w	44.4w
96	94.84" [2409mm]	21.6w	29.6w	44.1w	46.4w
100	98.78" [2509mm]	22.5w	30.8w	46w	47.9w
104	102.72" [2609mm]	23.4w	32.0w	47.8w	49.8w
108	106.66" [2709mm]	24.3w	33.2w	49.6w	51.5w
112	110.60" [2809mm]	25.2w	34.5w	51.5w	53.2w
116	114.54" [2909mm]	26.1w	35.7w	53.3w	54.9w
120	118.48" [3009mm]	27w	36.9w	55.2w	56.7w
124	122.42" [3109mm]	27.9w	38.2w	57.0w	58.4w
128	126.36" [3209mm]	28.8w	39.4w	58.8w	60.1w
132	130.3" [3309mm]	29.7w	40.6w	60.7w	61.9w
136	134.24" [3409mm]	30.6w	41.9w	62.5w	63.6w
140	138.18" [3509mm]	31.5w	43.1w	64.4w	65.3w
144	142.12" [3609mm]	32.4w	44.3w	66.2w	67.0w

¹ Available Only in 8CL, 8FL, 8SL, 9SL, 3RL & 2QL

² 8FL adds 0.22" [5.6mm] to length

Standard Pitch				
CODE	8CL, 8FL ² , 8SL, 9SL, 3RL & 2QL	1320	2320	4320
4	3.63" [92mm]	0.5w	0.7w	1.6w
7	6.91" [176mm]	1.0w	1.5w	3.2w
10	10.19" [259mm]	1.6w	2.2w	4.8w
14	13.47" [342mm]	2.1w	3.0w	6.4w
17	16.75" [426mm]	2.7w	3.8w	8.0w
20	20.03" [509mm]	3.2w	4.5w	9.6w
23	23.31" [592mm]	3.8w	5.3w	11.2w
27	26.59" [675mm]	4.3w	6.1w	12.8w
30	29.87" [759mm]	4.9w	6.8w	14.4w
33	33.15" [842mm]	5.4w	7.6w	16.0w
36	36.43" [925mm]	6.0w	8.4w	17.7w
40	39.71" [1009mm]	6.5w	9.1w	19.3w
43	42.99" [1092mm]	7.0w	9.9w	20.9w
46	46.27" [1175mm]	7.6w	10.6w	22.5w
50	49.55" [1259mm]	8.1w	11.4w	24.1w
53	52.83" [1342mm]	8.7w	12.2w	25.7w
56	56.11" [1425mm]	9.2w	12.9w	27.3w
59	59.39" [1508mm]	9.8w	13.7w	28.9w
63	62.67" [1592mm]	10.3w	14.5w	30.5w
66	65.94" [1675mm]	10.9w	15.2w	32.1w
70	69.22" [1758mm]	11.4w	16.0w	33.7w
73	72.50" [1842mm]	12.0w	16.8w	35.4w
76	75.78" [1925mm]	12.5w	17.5w	37.0w
79	79.06" [2008mm]	13.09w	18.33w	38.62w
82	82.34" [2092mm]	13.6w	19.0w	40.2w
86	85.62" [2175mm]	14.1w	19.8w	41.8w
89	88.90" [2258mm]	14.7w	20.6w	43.4w
92	92.18" [2341mm]	15.2w	21.3w	45.0w
95	95.46" [2425mm]	15.8w	22.1w	46.6w
99	98.74" [2508mm]	16.3w	22.9w	48.2w
102	102.02" [2591mm]	16.9w	23.6w	49.8w
105	105.30" [2675mm]	17.4w	24.4w	51.4w
109	108.58" [2758mm]	18.0w	25.2w	53.1w
112	111.86" [2841mm]	18.5w	26.0w	54.7w
115	115.14" [2924mm]	19.1w	26.7w	56.3w
118	118.42" [3008mm]	19.6w	27.5w	57.9w
122	121.70" [3091mm]	20.2w	28.3w	59.5w
125	124.98" [3174mm]	20.7w	29.0w	61.1w
128	128.26" [3258mm]	21.3w	29.8w	62.7w
132	131.54" [3341mm]	21.8w	30.6w	64.3w
135	134.82" [3424mm]	22.4w	31.3w	65.9w
138	138.10" [3506mm]	22.9w	32.1w	67.5w
141	141.38" [3591mm]	23.5w	32.9w	69.2w

DIM TO WARM LED BOARD

This LED Series offer a simple option for Dim-to-Warm. Featuring an intelligent circuit, the Dim-to-Warm board automatically changes the Color Temp from 3000° K to 1800° K when dimmed using a single HELD-5n1 or Lutron Driver. Smooth dimming is easily achieved from 3000°K to 1800°K to set the mood of the environment. Intelligent Circuit means no extra control equipment is needed besides a single HELD-5n1 or Lutron Driver and a Lutron Dimmer.

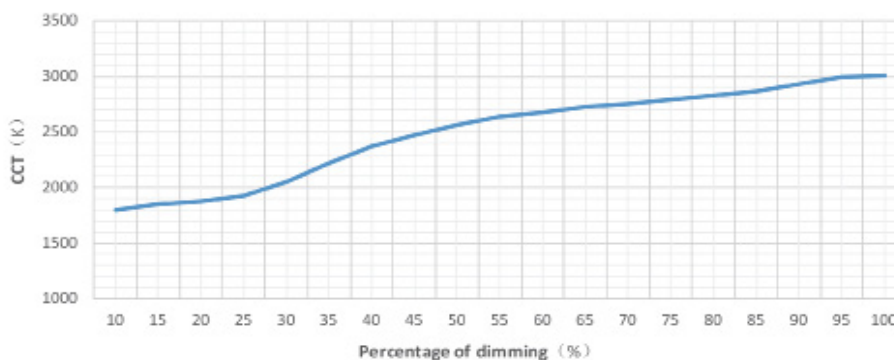
Our Dim-to-Warm LED board come in a single lumen package with all the LED binned to 3 MacAdam Ellipses. These boards have a CRI of 90 or higher to meet California Title 24 requirements.

LED BOARD	7435
LUMEN OUTPUT¹	480 lm/ft [1575 lm/m]
POWER CONSUMPTION	5.5 w/ft [18 w/m]
COUPON LENGTH	2.46" [62.5mm]
LED PITCH	8.0mm
CRI / TM30	92 / Rf83, Rg 92
CCT OPTIONS	1800K / 3000K
BINNING	3 Step
LED EFFICACY¹	90 lm/w

¹ Based on full output

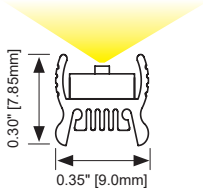
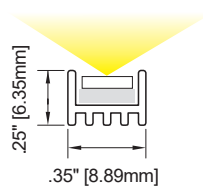
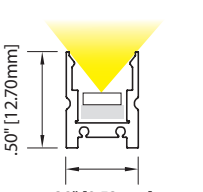
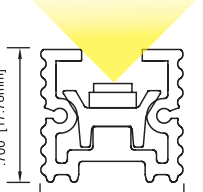
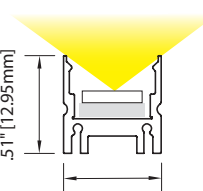
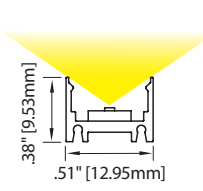
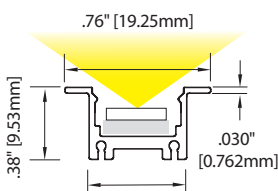
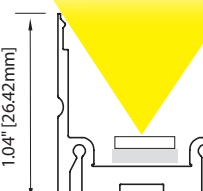
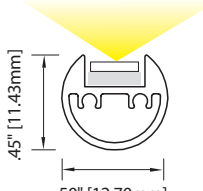
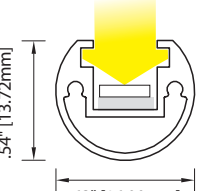
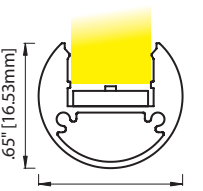
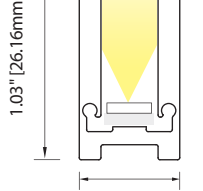
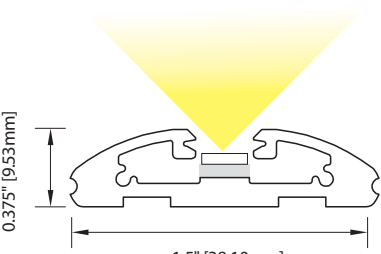
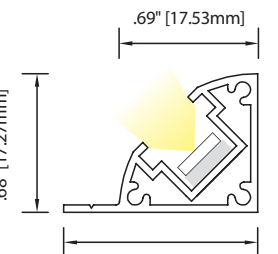
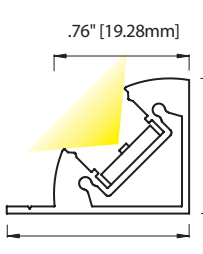
³ 8FL adds 0.22" [5.6mm] to length

CCT Curve



Dim to Warm		
CODE	8CL, 8FL ³ , 8SL, 9SL, 3RL & 2QL	7435
3	2.81" [72mm]	1.1w
6	5.28" [134mm]	2.2w
8	7.74" [197mm]	3.3w
11	10.20" [259mm]	4.5w
13	12.66" [322mm]	5.6w
16	15.12" [384mm]	6.7w
18	17.58" [447mm]	7.8w
20	20.04" [509mm]	9.0w
23	22.50" [572mm]	10.1w
25	24.96" [634mm]	11.2w
28	27.42" [697mm]	12.4w
30	29.88" [759mm]	13.5w
33	32.34" [822mm]	14.6w
35	34.80" [884mm]	15.7w
38	37.26" [947mm]	16.9w
40	39.72" [1009mm]	18.0w
43	42.19" [1072mm]	19.1w
45	44.65" [1134mm]	20.2w
48	47.11" [1197mm]	21.4w
50	49.57" [1259mm]	22.5w
52	52.03" [1322mm]	23.6w
55	54.49" [1384mm]	24.7w
57	56.95" [1447mm]	25.9w
60	59.41" [1509mm]	27.0w
62	61.87" [1572mm]	28.1w
65	64.33" [1634mm]	29.3w
67	66.79" [1697mm]	30.4w
70	69.25" [1759mm]	31.5w
72	71.71" [1822mm]	32.6w
75	74.17" [1884mm]	33.8w
77	76.63" [1947mm]	34.9w
80	79.09" [2009mm]	36.0w
82	81.56" [2072mm]	37.1w
84	84.02" [2134mm]	38.3w
87	86.48" [2197mm]	39.4w
89	88.94" [2259mm]	40.5w
92	91.40" [2322mm]	41.7w
94	93.86" [2384mm]	42.8w
97	96.32" [2447mm]	43.9w
99	98.78" [2509mm]	45.0w
102	101.24" [2572mm]	46.2w
104	103.70" [2634mm]	47.3w
107	106.16" [2697mm]	48.4w
109	108.62" [2759mm]	49.6w
112	111.08" [2822mm]	50.7w
114	113.54" [2884mm]	51.8w
116	116.00" [2947mm]	52.9w
119	118.46" [3009mm]	54.1w
121	120.92" [3072mm]	55.2w
124	123.38" [3134mm]	56.3w
126	125.84" [3197mm]	57.5w
129	128.30" [3259mm]	58.6w
131	130.76" [3322mm]	59.7w
134	133.22" [3384mm]	60.9w
136	135.68" [3447mm]	62.0w
139	138.14" [3509mm]	63.1w
141	140.60" [3572mm]	64.2w
144	143.06" [3634mm]	65.4w

CHOICE LINEAR FIXTURE EXTRUSIONS

<p>ML1 - Mini Designer (0.042 lb/ft [0.0625 kg/m])</p>  <p>0.30" [7.85mm] 0.35" [9.0mm]</p>	<p>1S - Small Square (0.0534 lb/ft [0.0795 kg/m])</p>  <p>0.25" [6.35mm] .35" [8.89mm]</p>	<p>7SL - Small Square/Lensed (0.0675 lb/ft [0.1003 kg/m])</p>  <p>0.50" [12.70mm] .38" [9.53mm]</p>	<p>5SLW - Square Extrusion (0.3300 lb [0.4911 kg/m] per foot)</p>  <p>0.700" [17.78mm] .750" [19.05mm]</p>
<p>8SL - Medium Square/Lensed (0.0925 lb/ft [0.1376 kg/m])</p>  <p>0.51" [12.95mm] 0.51" [12.95mm]</p>	<p>8CL - Medium Square/Lensed (0.0600 lb/ft [0.0893 kg/m])</p>  <p>0.38" [9.53mm] 0.51" [12.95mm]</p>	<p>8FL - Medium Flanged/Lensed (0.0925 lb/ft [0.1376 kg/m])</p>  <p>0.76" [19.25mm] 0.38" [9.53mm] 0.030" [0.762mm] 0.51" [12.95mm]</p>	<p>9SL - Large Square/Lensed (0.2750 lb/ft [0.4091 kg/m])</p>  <p>1.04" [26.42mm] 0.98" [24.89mm]</p>
<p>1R - Small Round (0.1026 lb/ft [0.1527 kg/m])</p>  <p>0.45" [11.43mm] 0.50" [12.70mm]</p>	<p>2RL - Large Round/Lensed (0.1623 lb/ft [0.2415 kg/m])</p>  <p>0.54" [13.72mm] 0.63" [16.00mm]</p>	<p>3RL - Large Round/Lensed (0.1700 lb/ft [0.2530 kg/m])</p>  <p>0.65" [16.53mm] 0.75" [19.05mm]</p>	<p>4SL - Medium Square Tall/Lensed (0.2955 lb/ft [0.4398 kg/m])</p>  <p>1.03" [26.16mm] 0.51" [12.95mm]</p>
<p>1EL - Demi Ellipse/Lensed (0.3300 lb/ft [0.4911 kg/m])</p>  <p>0.375" [9.53mm] 1.5" [38.10mm]</p>		<p>1QL - Quarter Round/Lensed (0.1899 lb/ft [0.2826 kg/m])</p>  <p>0.69" [17.53mm] 0.68" [17.27mm] 0.95" [24.13mm]</p>	<p>2QL - Quarter Round/Lensed (0.2300 lb/ft [0.3423 kg/m])</p>  <p>0.76" [19.28mm] 0.76" [19.28mm] 1.02" [25.96mm]</p>