

LeeP™ Plastic Composite Spring Series

**Non-Magnetic Material • High Corrosion Resistance
• High Strength to Weight Ratio**



LeeP™ Plastic Composite Springs are an innovative compression spring designed to have properties unavailable in a metal spring. The LeeP™ Plastic Composite Spring Series offers a wide range of sizes and strength combinations. This unique non-magnetic spring offers high corrosion resistance, excellent strength to weight ratio and designed to perform under load with minimal side thrust.

Made of a unique formulation using Ultem* PEI resins, the LeeP™ Series is designed for optimal performance in a wide range of applications.

The LeeP™ Series is available in color coded strengths for ease of identification (weakest to strongest):

- Red
- Orange
- Yellow
- Green
- Violet

LeeP™ Plastic Compression Springs offer many advantages including:

- Unique patented designs to maximize spring rates and cycle life, while minimizing solid height (US Patent No. 8,939,438 B2).
- High strength to weight ratios that optimize performance while reducing mass.
- Excellent stability of physical and mechanical properties at temperatures up to 340°F (171° C).
- High corrosion resistance and generally compatible with many chemicals including strong acids, weak bases, aromatics, and ketones.
- Non-magnetic material does not interfere with imaging and other Ferro-sensitive technologies.
- Dielectric insulating material suitable for non-conductive applications.
- Low flammability and toxicity ensuring environmental safety.
- Recyclable and compliant with most Global regulations including RoHS and REACH.

Typical properties of Ultem*

Tensile Strength [ASTM D638]	15,000 psi minimum
Ultimate Shear Strength [ASTM D732]	Approx. 15,000 psi
Thermal Conductivity	0.85 BTU-in/hr-ft ² -°F
Max. Working Temperature [or Relative Thermal Index (Continuous, air)]	340 °F (171°C)
Dielectric Constant [1 MHz; ASTM D150(2)]	3.15
Dielectric Strength [Short Term; ASTM D149(2)]	830 V/mil
Flammability UL94 Low	(V-0)
Outgassing Total Mass Loss	0.40%
Non-magnetic	YES
Recyclable	YES
Chemical Resistance	
Strong Acids	Excellent Resistance ¹
Weak Bases	Excellent Resistance ¹
Alcohols	Excellent Resistance ¹
Ethers	Excellent Resistance ¹
Inorganic Salt Solutions	Excellent Resistance ¹
Steam	Excellent Resistance ¹
Weak Alkalis	Excellent Resistance ¹

NOTE: This information represents typical values intended for reference only. Environmental Stress Cracking Resistance [ESCR] to Chemicals at 73°F (23°C) and at 0.25-0.5% strain under immersion unless otherwise specified.



Lee Spring can manufacture custom LeeP™ plastic springs to your specifications. Contact us today!

LeeP™ Plastic Composite Spring Series

Guide to using tables

Lee Stock Number:
Lee Spring Part Number.

Hole Diameter:
Suggested minimum hole size for spring containment.

Rod Diameter:
Suggested maximum rod size to guide the inside of the spring.

Approx. Load @ Solid Height:
The load or force required to bring all coils into contact.

Spring Rate:
The change in load per unit of deflection.

Price Group:
Reference for price list.

LEE STOCK NUMBER	COLOR	HOLE DIAMETER		OUTSIDE DIAMETER		ROD DIAMETER		MATERIAL THICKNESS X RADIAL WALL		APPROX. LOAD @ SOLID HGT		FREE LENGTH		SPRING RATE		SOLID HEIGHT		PRICE CODE
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	IN.	MM	LB/IN.	KG/MM	IN.	MM	
LL 038 038 U000	R	.375	9.525	.350	8.890	.150	3.810	.030	0.76	0.991	0.449	0.375	9.525	3.70	0.066	0.108	2.738	L1
LL 038 038 U10G	O									1.498	0.679	0.375	9.525	5.59	0.100	0.108	2.738	L1
LL 038 038 U20G	Y									1.636	0.742	0.375	9.525	6.11	0.109	0.108	2.738	L1
LL 038 038 U30G	G									1.811	0.822	0.375	9.525	6.76	0.121	0.108	2.738	L1
LL 038 038 U36G	B									1.941	0.880	0.375	9.525	7.25	0.129	0.108	2.738	L1
LL 038 038 U40G	V									2.041	0.926	0.375	9.525	7.62	0.136	0.108	2.738	L1
LL 038 050 U000	R	.375	9.525	.350	8.890	.150	3.810	.030	0.76	0.991	0.449	0.500	12.700	2.65	0.047	0.127	3.220	L2
LL 038 050 U10G	O									1.498	0.679	0.500	12.700	2.65	0.047	0.127	3.220	L2

Color:
Represents the strength of the spring.

Outside Diameter:
Spring outer diameter, parts listed in ascending order.

Material Thickness X Radial Wall:
The thickness and width of flat cross-section used to make the spring.

Free Length:
The overall height of the spring in the unloaded position.

Solid Height:
Length when fully compressed.

Additional Information

- LeeP™ Plastic Composite Springs can be stacked and/or nested to vary lengths and spring rates.
- Custom design capability to meet unique performance requirements.

(Note: A flat plastic washer could be used between springs while stacking for better performance.)

For additional information, pricing, availability, and technical support please contact Lee Spring by calling +91 80 49376666 or by email at india-sales@leespring.com

LEE STOCK NUMBER	COLOR	HOLE DIAMETER		OUTSIDE DIAMETER		ROD DIAMETER		MATERIAL THICKNESS X RADIAL WALL		APPROX. LOAD @ SOLID HGT		FREE LENGTH		SPRING RATE		SOLID HEIGHT		PRICE CODE
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	IN.	MM	LB/IN.	KG/MM	IN.	MM	
LL 038 038 U000	R									0.991	0.449	0.375	9.525	3.70	0.066	0.108	2.738	L1
LL 038 038 U10G	O									1.498	0.679	0.375	9.525	5.59	0.100	0.108	2.738	L1
LL 038 038 U20G	Y	.375	9.525	.350	8.890	.150	3.810	x	x	1.636	0.742	0.375	9.525	6.11	0.109	0.108	2.738	L1
LL 038 038 U30G	G							.082	2.08	1.811	0.822	0.375	9.525	6.76	0.121	0.108	2.738	L1
LL 038 038 U40G	V									2.041	0.926	0.375	9.525	7.62	0.136	0.108	2.738	L1
LL 038 050 U000	R									0.991	0.449	0.500	12.700	2.65	0.047	0.127	3.220	L2
LL 038 050 U10G	O									1.498	0.679	0.500	12.700	4.00	0.071	0.127	3.220	L2
LL 038 050 U20G	Y	.375	9.525	.350	8.890	.150	3.810	x	x	1.636	0.742	0.500	12.700	4.37	0.078	0.127	3.220	L2
LL 038 050 U30G	G							.082	2.08	1.811	0.822	0.500	12.700	4.84	0.086	0.127	3.220	L2
LL 038 050 U40G	V									2.041	0.926	0.500	12.700	5.46	0.098	0.127	3.220	L2
LL 050 050 U000	R									1.905	0.864	0.500	12.700	5.40	0.096	0.148	3.753	L2
LL 050 050 U10G	O							.042	1.07	2.881	1.307	0.500	12.700	8.16	0.146	0.148	3.753	L2
LL 050 050 U20G	Y	.500	12.700	.485	12.319	.218	5.537	x	x	3.147	1.427	0.500	12.700	8.91	0.159	0.148	3.753	L2
LL 050 050 U30G	G							.112	2.84	3.484	1.580	0.500	12.700	9.87	0.176	0.148	3.753	L2
LL 050 050 U40G	V									3.925	1.780	0.500	12.700	11.12	0.199	0.148	3.753	L2
LL 050 075 U000	R									1.985	0.900	0.750	19.050	3.56	0.064	0.193	4.912	L3
LL 050 075 U10G	O							.042	1.07	3.002	1.362	0.750	19.050	5.38	0.096	0.193	4.912	L3
LL 050 075 U20G	Y	.500	12.700	.470	11.938	.218	5.537	x	x	3.278	1.487	0.750	19.050	5.88	0.105	0.193	4.912	L3
LL 050 075 U30G	G							.112	2.84	3.630	1.646	0.750	19.050	6.50	0.116	0.193	4.912	L3
LL 050 075 U40G	V									4.090	1.855	0.750	19.050	7.33	0.131	0.193	4.912	L3
LL 075 075 U000	R									4.340	1.969	0.750	19.050	8.18	0.146	0.221	5.607	L3
LL 075 075 U10G	O							.062	1.57	6.563	2.977	0.750	19.050	12.37	0.221	0.221	5.607	L3
LL 075 075 U20G	Y	.750	19.050	.720	18.288	.343	8.712	x	x	7.167	3.251	0.750	19.050	13.51	0.241	0.221	5.607	L3
LL 075 075 U30G	G							.172	4.37	7.935	3.599	0.750	19.050	14.96	0.267	0.221	5.607	L3
LL 075 075 U40G	V									8.941	4.056	0.750	19.050	16.85	0.301	0.221	5.607	L3
LL 075 100 U000	R									4.340	1.969	1.000	25.400	5.85	0.104	0.259	6.588	L4
LL 075 100 U10G	O							.062	1.57	6.563	2.977	1.000	25.400	8.84	0.158	0.259	6.588	L4
LL 075 100 U20G	Y	.750	19.050	.720	18.288	.343	8.712	x	x	7.167	3.251	1.000	25.400	9.65	0.172	0.259	6.588	L4
LL 075 100 U30G	G							.172	4.37	7.935	3.599	1.000	25.400	10.69	0.191	0.259	6.588	L4
LL 075 100 U40G	V									8.941	4.056	1.000	25.400	12.04	0.215	0.259	6.588	L4
LL 100 100 U000	R									8.133	3.689	1.000	25.400	11.64	0.208	0.303	7.699	L4
LL 100 100 U10G	O							.085	2.16	12.298	5.578	1.000	25.400	17.60	0.314	0.303	7.699	L4
LL 100 100 U20G	Y	1.000	25.400	.965	24.511	.469	11.913	x	x	13.431	6.092	1.000	25.400	19.23	0.343	0.303	7.699	L4
LL 100 100 U30G	G							.230	5.84	14.870	6.745	1.000	25.400	21.28	0.380	0.303	7.699	L4
LL 100 100 U40G	V									16.755	7.600	1.000	25.400	23.98	0.428	0.303	7.699	L4
LL 100 125 U000	R									8.133	3.689	1.250	31.750	8.95	0.160	0.343	8.717	L5
LL 100 125 U10G	O							.085	2.16	12.298	5.578	1.250	31.750	13.53	0.242	0.343	8.717	L5
LL 100 125 U20G	Y	1.000	25.400	.965	24.511	.469	11.913	x	x	13.431	6.092	1.250	31.750	14.77	0.264	0.343	8.717	L5
LL 100 125 U30G	G							.230	5.84	14.870	6.745	1.250	31.750	16.36	0.292	0.343	8.717	L5
LL 100 125 U40G	V									16.755	7.600	1.250	31.750	18.43	0.329	0.343	8.717	L5

SPECIAL INSTRUCTIONS FOR LEEP™ PLASTIC COMPOSITE SPRINGS SERIES

PRICING: See Price List or visit leespring.in for pricing.

CUSTOM DESIGNS: Custom LeeP Spring designs are available on request; see Custom Springs Section for LeeP specification form.