

NEW AND IMPROVED!



LeeP™ PLASTIC SPRINGS

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.

Background

The properties of the spring material in many critical applications frequently include specific requirements beyond load bearing capability. Material specifications may require chemical resistance, non-magnetism, physical stability at elevated temperatures, lightness (weight), non-conductivity, and recyclability. A variety of metal alloys have been used to meet these secondary requirements with varying degrees of success.

Customers have increasingly requested springs meeting one or more of these requirements, citing specifications most often found in 'space age' inert materials. This led Lee Spring's technical team to research designs and materials that combine the strength of metal with the special characteristics of high performance plastics.

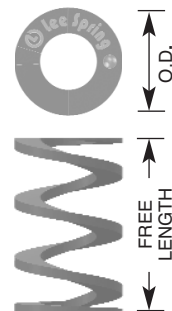
Why LeeP™ Springs?

LeeP™ Plastic Composite compression springs are designed to perform under load with minimum side thrust. The innovative design results in a high strength to weight ratio through efficient use of material; they are manufactured efficiently by means of injection molding. LeeP springs are fabricated in distinctive formulations of Ultem* PEI resins in six increasing color coded strengths: Red, Orange, Yellow, Green, Blue and Violet, with Violet being the strongest. Ultem resins were selected as Lee's material of choice meeting LeeP performance criteria.

Offering:

- Six color coded strengths for ease of identification: Red, Orange, Yellow, Green, Blue and Violet (weakest to strongest).
- Designs to fit in standard hole sizes from 0.375" to 1.000" with free lengths from 0.375" to 1.250".
- Different sizes can be stacked and/or nested to get varied lengths and spring rates.

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



Price Code	10-19 Ea	20-49 Ea	50-99 Ea	100-199 Ea
L1	9.78	7.82	6.65	5.99
L2	10.57	8.46	7.19	6.47
L3	11.43	9.14	7.77	7.00
L4	12.36	9.89	8.40	7.56
L5	13.36	10.69	9.08	8.18

*Trademark of SABIC Innovative Plastics IP BV. ¹Excellent resistance equals greater than 90% retention of mechanical properties.



LeeP™ Plastic Composite Springs Color Code: ■ R= Red, ■ O= Orange, ■ Y= Yellow, ■ G= Green, ■ B= Blue, ■ V= Violet

LeeP™ PLASTIC SPRINGS

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	3.699	0.066	0.108	2.738	L1
LL 038 038 U10G	O							.030	0.76	1.498	0.679	0.375	9.525	5.593	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	6.108	0.109	0.108	2.738	L1
LL 038 038 U30G	G							.082	2.08	1.811	0.822	0.375	9.525	6.762	0.121	0.108	2.738	L1
LL 038 038 U36G	B									1.941	0.880	0.375	9.525	7.247	0.129	0.108	2.738	L1
LL 038 038 U40G	V									2.041	0.926	0.375	9.525	7.620	0.136	0.108	2.738	L1
LL 038 050 U000	R									0.991	0.449	0.500	12.700	2.648	0.047	0.127	3.220	L2
LL 038 050 U10G	O							.030	0.76	1.498	0.679	0.500	12.700	4.004	0.072	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	4.373	0.078	0.127	3.220	L2
LL 038 050 U30G	G							.082	2.08	1.811	0.822	0.500	12.700	4.841	0.086	0.127	3.220	L2
LL 038 050 U36G	B									1.941	0.880	0.500	12.700	5.188	0.093	0.127	3.220	L2
LL 038 050 U40G	V									2.041	0.926	0.500	12.700	5.455	0.097	0.127	3.220	L2
LL 050 050 U000	R									1.905	0.864	0.500	12.700	5.396	0.096	0.148	3.753	L2
LL 050 050 U10G	O							.042	1.07	2.881	1.307	0.500	12.700	8.160	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	8.912	0.159	0.148	3.753	L2
LL 050 050 U30G	G							.112	2.84	3.484	1.580	0.500	12.700	9.867	0.176	0.148	3.753	L2
LL 050 050 U36G	B									3.733	1.693	0.500	12.700	10.573	0.189	0.148	3.753	L2
LL 050 050 U40G	V									3.925	1.780	0.500	12.700	11.118	0.199	0.148	3.753	L2
LL 050 075 U000	R									1.985	0.900	0.750	19.050	3.557	0.064	0.193	4.912	L4
LL 050 075 U10G	O							.042	1.07	3.002	1.362	0.750	19.050	5.379	0.096	0.193	4.912	L4
LL 050 075 U20G	Y	.500	12.700	.470	11.938	.218	5.537	x	x	3.278	1.487	0.750	19.050	5.875	0.105	0.193	4.912	L4
LL 050 075 U30G	G							.112	2.84	3.630	1.646	0.750	19.050	6.504	0.116	0.193	4.912	L4
LL 050 075 U36G	B									3.889	1.764	0.750	19.050	6.970	0.124	0.193	4.912	L4
LL 050 075 U40G	V									4.090	1.855	0.750	19.050	7.329	0.131	0.193	4.912	L4
LL 075 075 U000	R									4.340	1.969	0.750	19.050	8.180	0.146	0.221	5.607	L3
LL 075 075 U10G	O							.062	1.57	6.563	2.977	0.750	19.050	12.370	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	13.510	0.241	0.221	5.607	L3
LL 075 075 U30G	G							.172	4.37	7.935	3.599	0.750	19.050	14.957	0.267	0.221	5.607	L3
LL 075 075 U36G	B									8.503	3.857	0.750	19.050	16.028	0.286	0.221	5.607	L3
LL 075 075 U40G	V									8.941	4.056	0.750	19.050	16.853	0.301	0.221	5.607	L3
LL 075 100 U000	R									4.340	1.969	1.000	25.400	5.846	0.104	0.259	6.588	L4
LL 075 100 U10G	O							.062	1.57	6.563	2.977	1.000	25.400	8.840	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	9.655	0.172	0.259	6.588	L4
LL 075 100 U30G	G							.172	4.37	7.935	3.599	1.000	25.400	10.689	0.191	0.259	6.588	L4
LL 075 100 U36G	B									8.503	3.857	1.000	25.400	11.454	0.205	0.259	6.588	L4
LL 075 100 U40G	V									8.941	4.056	1.000	25.400	12.044	0.215	0.259	6.588	L4
LL 100 100 U000	R									8.133	3.689	1.000	25.400	11.641	0.208	0.303	7.699	L4
LL 100 100 U10G	O							.085	2.16	12.298	5.578	1.000	25.400	17.602	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	19.225	0.343	0.303	7.699	L4
LL 100 100 U30G	G							.230	5.84	14.870	6.745	1.000	25.400	21.284	0.380	0.303	7.699	L4
LL 100 100 U36G	B									15.934	7.228	1.000	25.400	22.808	0.407	0.303	7.699	L4
LL 100 100 U40G	V									16.755	7.600	1.000	25.400	23.982	0.428	0.303	7.699	L4
LL 100 125 U000	R									8.133	3.689	1.250	31.750	8.946	0.160	0.343	8.717	L5
LL 100 125 U10G	O							.085	2.16	12.298	5.578	1.250	31.750	13.528	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	14.775	0.264	0.343	8.717	L5
LL 100 125 U30G	G							.230	5.84	14.870	6.745	1.250	31.750	16.357	0.292	0.343	8.717	L5
LL 100 125 U36G	B									15.934	7.228	1.250	31.750	17.528	0.313	0.343	8.717	L5
LL 100 125 U40G	V									16.755	7.600	1.250	31.750	18.431	0.329	0.343	8.717	L5

SPECIAL INSTRUCTIONS FOR LeeP™ PLASTIC COMPOSITE SPRINGS SERIES

PRICING: See page 5 for 10 -199 pricing. To price or order up to 599 pieces, visit leespring.com; 600+ pieces, contact Lee Spring.
CUSTOM DESIGNS: Custom LeeP Spring designs are available on request; see Custom Springs Section for LeeP RFQ form.