FULL-BRIDGE THIN-BEAM LOAD CELLS
FOR LOADS 0-113 g to 0-18 kgf

LCL Series

✓ Measures Force or Displacement
✓ Thermally Matched, Fully Active, Full-Bridge Gage for Optimal Temperature Tracking

When frequent small-load measurements are required, OMEGA® LCL Series thin-beam load cells are the answer. The LCL Series is designed to measure many different parameters found in medical instrumentation, home appliances, process control, robotics, automotive, and other high-volume applications. A specially developed integrated strain gage includes all balancing, compensating, and conductive elements and is laminated to the beam to provide excellent stability and reliability.

SPECIFICATIONS

Excitation: 5 Vdc, 12V max
Rated Output: 2 mV/V ±20% (to minimize ±20% tolerance, end user must calibrate with a known weight)
Zero Balance: ±0.3 mV/V
Combined Error: 0.25% FS
Operating Temperature: -54 to 93°C (-65 to 200°F)
Compensated Temperature: -7 to 49°C (20 to 120°F)
Temperature Effects: Zero balance 0.02% FS/°F; output 0.02%/°F
Resistance (Input and Output): 1200 ±300 Ω
Insulation Resistance: 1000 @ 50 Vdc
Seal: Urethane coated
Safe Overload: 150% FS
Full Scale Deflection: 0.25 to 1.27 mm (0.010 to 0.050")
Lead Wire: 9" shielded PVC 4-conductor 30 AWG
Material:
>816 gf (2 lb): 301 SS
≤816 gf (2 lb): Beryllium copper

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To Order Visit omega.com/lcl for Pricing and Details

CAPACITY MODEL NO. COMPATIBLE METERS
113 gf 0.25 lb LCL-113G DP2000S5, DP25B-S, DPiS
227 gf 0.5 lb LCL-227G DP2000S5, DP25B-S, DPiS
454 gf 1 lb LCL-454G DP2000S5, DP25B-S, DPiS
816 gf 2 lb LCL-816G DP2000S5, DP25B-S, DPiS
2.27 kgf 5 lb LCL-005 DP2000S5, DP25B-S, DPiS
4.54 kgf 10 lb LCL-010 DP2000S5, DP25B-S, DPiS

MOUNTING HARDWARE

MODEL NO. MOUNTING BRACKETS
LCL-CL1 For LCL-113G through LCL-816G
LCM-CL1 For LCL-005 through LCL-040
Ordering Examples: LCL-113G, beam and LCL-CL1, mounting bracket.
LCL-020, beam lead cell and LCM-CL1, mounting bracket.

Shown actual size.
Careful design considerations must be taken into account when mounting OMEGA’s LCL Series thin-beam load cells. The sensor’s performance depends on the mechanical interface. All thin-beam load cells require mounting clamps to create a “double bend” during loading, as shown in Figure A. This illustration is exaggerated to show the clamp’s effectiveness in producing opposing moments that create the double bend. An electrical output is generated as the double bend causes tension and compression on the sensor strain gage.

Two typical mounting arrangements are shown below. For high-accuracy applications, reinforcement plates should be slightly harder than the beam material, and the interfacing corners should be sharp. Because of low loads and sensor construction associated with the LCL113G through LCL-816G, in-line loading (Type 2) is not recommended.