

10kN Load Frame (GDSL10)

Overview: GDS' 10kN laboratory load frame with standalone keypad operation and USB interface for computer control comes in three sizes, standard, wide and wide and tall. Each base has the same self-contained stepper motor driven unit that can be controlled either manually using its Smart Keypad or from a PC using the USB interface. The only difference is the width and the height of the bars to allow different testing options.



Standard



Wide



Wide & Tall

Key Features:

Single connection built-in for load cell, with calibration set in firmware by the user:

Displacement measurement is built-in using measurement of motor movement (stepper motor steps):

GDSL10 allows for up to 2 RFM's to be connected (Remote Feedback Module) which allows connection of up to 2 additional external transducers:

Benefits to the User:

No additional acquisition required to make the GDSL10 a stand alone unit capable of load control via closed loop on board control.

No additional data acquisition required for displacement measurement of platen.

Any transducer connected by RFM is automatically capable of driving the GDSL10 platen under closed loop control. For example, a small strain axial transducer could be used to control the platen under displacement control from a transducer locally positioned on the sample or cell.

Technical Specification:

| | Standard | Wide | Wide & Tall |
|--|--|--|--|
| Dimensions of Frame (W/D/H): | 220mm, 260mm (including keypad), 656mm | 260mm, 260mm (including keypad), 668mm | 352mm, 260mm (including keypad), 956mm |
| Horizontal daylight between columns: | 184mm | 224mm | 299mm |
| Vertical daylight between top-beam and platen*: | 380mm | 395mm | 600mm |
| Vertical daylight between 10kN S-beam load cell button and the platen*: | 270mm | 285mm | 490mm |
| Axial Force Accuracy: | 0.1%FRO | | |
| Load Range (kN): | Max Load 10kN | | |
| Displacement range/travel: | Nominal 40mm | | |
| Displacement Accuracy: | 0.2% (Can be improved to 0.1% with an external transducer connected to an RFM) | | |
| Displacement Resolution: | 0.0001mm (0.1µm) | | |
| Power: | 110 to 240 AC Volt, 50/60Hz Input, 50 Watts | | |

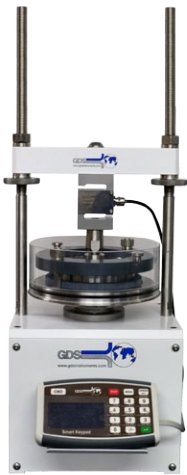
*Measurement taken when platen is at lowest point.

10kN Load Frame Options:

Each frame can be configured as a standard system type with the addition of a test cell from the GDS range as per the table below.



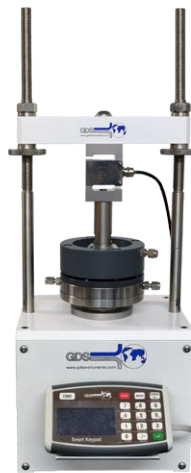
| Testing Options: | Standard | Wide | Wide and Tall |
|--|----------|------|---------------|
| Standard Oedometer Tests: | ✓ | ✓ | ✓ |
| Unconfined Compressive Strength: | ✓ | ✓ | ✓ |
| Constant Rate of Strain / Permeability (Open Top) Testing: | ✓ | ✓ | ✓ |
| Constant Rate of Strain (CRS) Testing, Elevated Back-pressure: | | ✓ | ✓ |
| Triaxial Testing (Max cell size 76mm): | | | ✓ |
| Frame Reference: | 004 | 001 | 003 |



Standard Oedometer Tests (Consolidation)



Unconfined Compressive Strength (UCS)



Constant Rate of Strain/Permeability (Open Top) Testing



Constant Rate of Strain (CRS) Testing, with Elevated Back-pressure



Triaxial Testing