STEP LAB

LOW FORCE ACQUISITION

Premise

STEP Lab systems are compliant with ISO 7500-1 class 0.5, the top-quality class proposed in the ISO 7500-1 Standard.

Table 2 — Characteristic values of the force-measuring system

Class of machine range	Maximum permissible value %				
	Relative error of				Relative resolution
	Indication q	Repeatability b	Reversibility[a] v	Zero f_0	a
0,5	±0,5	0,5	±0,75	±0,05	0,25
1	±1,0	1,0	±1,5	±0,1	0,5
2	±2,0	2,0	±3,0	±0,2	1,0
3	±3,0	3,0	±4,5	±0,3	1,5

[a] According to 6.4.8, the relative reversibility error is only determined when required.

Actual values of the current case

Load cell model	FS Load value		Accuracy		Minimum measuring value (resolution)		Load range	
	kN	N	%	N	%	N	Max [N]	Min [N]
Interface 1216	1,11	1110	0,05%	0,56	0,005%	0,056	1110	0,056
Interface 2816	16,00	16000	0,05%	8,00	0,005%	0,800	16000	0,800

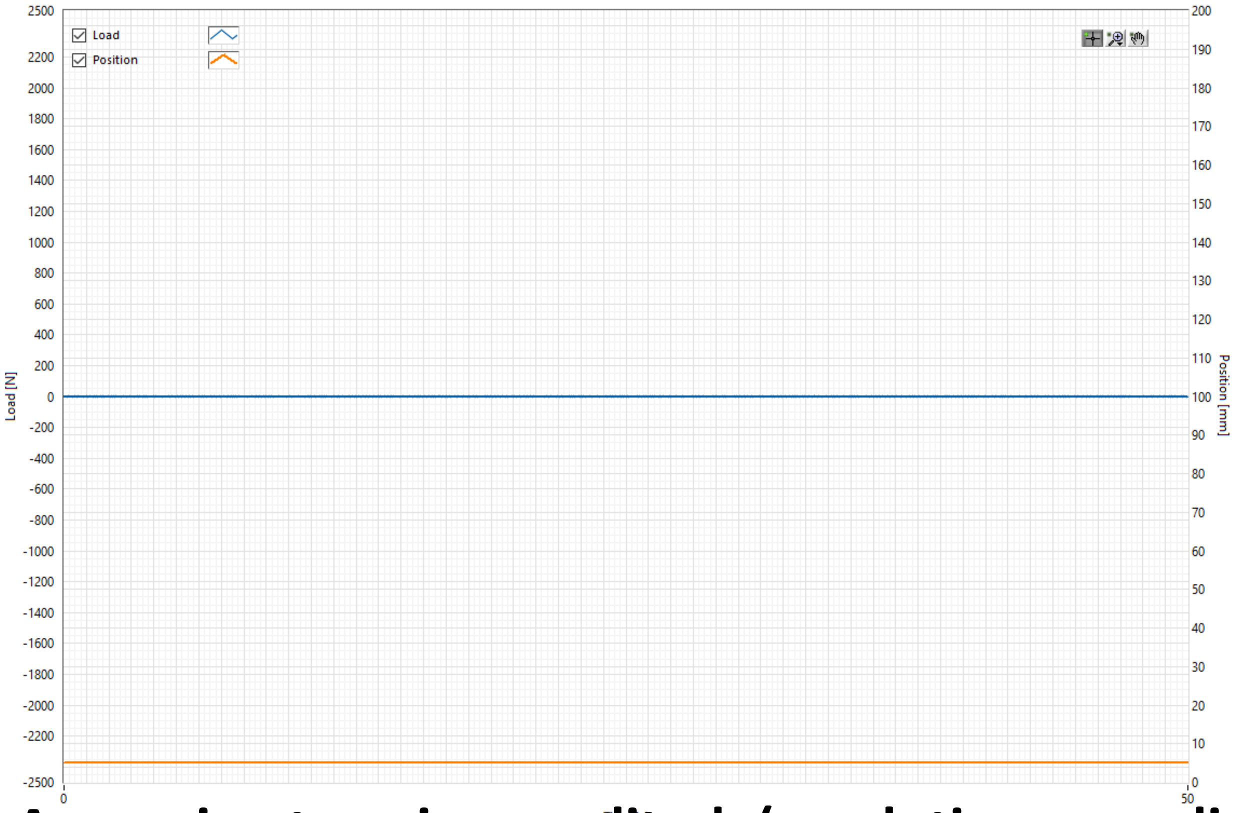
Example: low force acquisition with load cell 2500N

Filters:

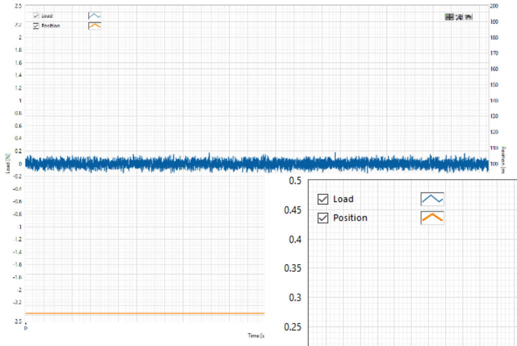
Moving average: 50

Bessel: Low-pass, 5, 150Hz

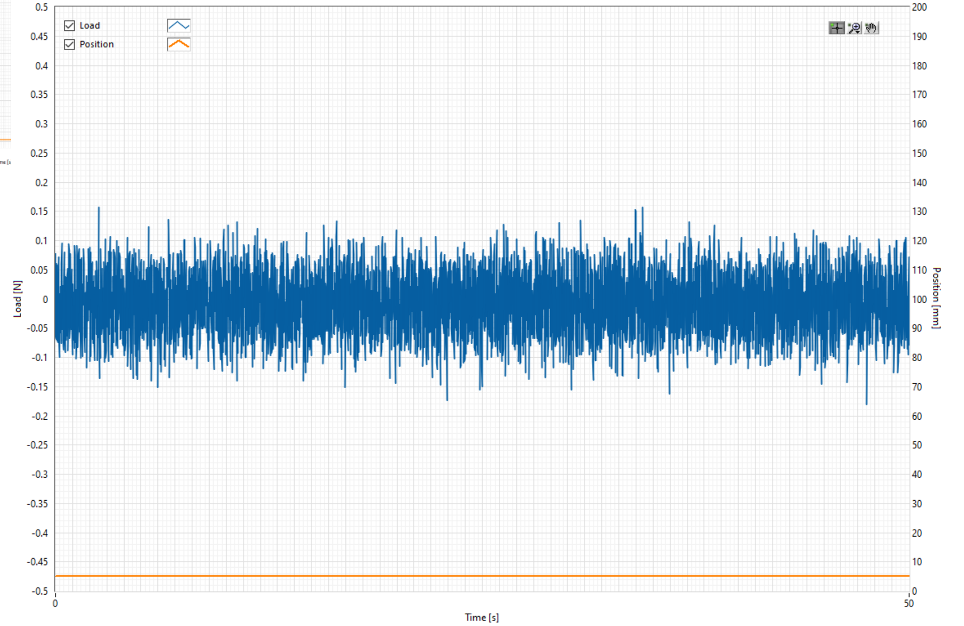
Graph with FS (±2500N)



Graph with zoom 1000x (±2.5N)



Graph with zoom 5000x (±0.5N)



Approximate noise amplitude(resolution according ISO 7500-1): ±0.125N

Relative noise amplitude: 0.0050% of FS