

Consistency of Calibration Data for the Probe Batch

A consistency of the calibration data was checked for 8 125/40/4 probes, which were taken from the same wafer. The following dynamic parameters were obtained for these probes:

| | ω , kHz | Q | k , N/m | IOS, nm/V |
|---|----------------|--------------------|------------------|-------------------|
| 1 | 267.0 | 438.18 \pm 12.15 | 25.15 \pm 0.70 | 96.77 \pm 2.06 |
| 2 | 271.2 | 434.90 \pm 11.69 | 25.51 \pm 0.69 | 105.06 \pm 0.94 |
| 3 | 275.2 | 477.01 \pm 6.18 | 28.65 \pm 0.37 | 102.96 \pm 0.69 |
| 4 | 280.6 | 419.83 \pm 7.41 | 25.96 \pm 0.46 | 110.89 \pm 0.60 |
| 5 | 285.1 | 461.27 \pm 9.72 | 29.21 \pm 0.61 | 97.72 \pm 0.55 |
| 6 | 285.4 | 368.10 \pm 20.03 | 23.34 \pm 1.27 | 105.63 \pm 2.19 |
| 7 | 296.4 | 443.86 \pm 7.76 | 29.77 \pm 0.52 | 108.94 \pm 0.96 |
| 8 | 286.0 | 469.31 \pm 11.12 | 29.85 \pm 0.71 | 93.27 \pm 1.44 |

For each probe 7-10 measurements were performed and the averaged data are presented above. The average spring constant for these 8 probes is 27.18 ± 2.49 N/m. In other words, for the probes of the same wafer the variations of their spring constant are within the 10% range. The IOS values for each probe are determined with high accuracy (variations are with 2% range), and the IOS changes reported for different probes reflect slightly different laser positioning on these probes. The IOS measurements are specific for a particular microscope, and our data were obtained with a MultiMode device.