Parameter name	Value
$W_q^{/}2\pi$	2.0687 GHz
$/2\pi$	7.294 GHz
$/2\pi$	6.502 GHz
$/2\pi$	−81.4 MHz
$\chi_{qc}/2\pi$	−2.02 MHz
$\kappa_c/2\pi$	17.2 MHz
$EC_q^{/}h$	0.0734 GHz
$/h$	0.0335 GHz
E_J/h	3.96 GHz
L_a	4.24 nH
$/2\pi$	7.23 GHz
$g_{ac}/2\pi$	215 MHz
$/2\pi$	6.59 GHz
$/2\pi$	−1.64 MHz
$/2\pi$	−0.0143 MHz
$/2\pi$	−1.20 MHz
$\chi_{qa}/2\pi$	−20.6 MHz
θ	0.298 rad
T_1	124.5 µs
T_2^*	10.6 µs
T_2^E	22.6 µs

Table 1: *Main parameters of the measured sample and cavity.* The first group, from W_q to κ_c, consists of parameters which were measured directly. The second group, from C_s to g_{ac}, is devoted to parameters fitted using the model eq:Htot, as discussed in apx:fit. In the third group, from to θ, the parameters were derived from the previous quantities. The last group contains measured coherence times.