UM-SJTU Joint Institute
Physics Laboratory
Data Sheet (Exercise 4)

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NOTICE. Please remember to show the data sheet to your instructor before leaving the laboratory. The data sheet will not be accepted if the data are recorded with a pencil or modified with a correction fluid/tape. If a mistake is made in recording a datum item, cancel the wrong value by drawing a fine line through it, record the correct value legibly, and ask your instructor to confirm the correction. Please remember to take a record of the precision of the instruments used. You are required to hand in the original data with your lab report, so please keep the data sheet properly.

Frequency of the sound wave $f =$ 38.957 [kHz] $\pm$ 0.001 [kHz]

Temperature $T =$ 23 [°C] $\pm$ 1 [°C]

L_i [mm] $\pm$ 0.001 [mm]		L_i [mm] $\pm$ 0.001 [mm]	
1	12.340	7	39.390
2	16.886	8	43.984
3	21.365	9	48.413
4	25.957	10	52.986
5	30.360	11	57.430
6	34.940	12	61.991

Table 1. Data table for the resonance method.

L_i [mm] $\pm$ 0.001 [mm]		L_i [mm] $\pm$ 0.001 [mm]	
1	21.330	7	75.298
2	30.321	8	84.236
3	39.323	9	93.229
4	48.350	10	102.210
5	57.318	11	111.133
6	66.321	12	120.139

Table 2. Data table for the phase comparison method.

$v = \lambda f$ — uncertainty propagation

error bar.

Instructor's signature: Y.Y.

	t_i [μs] ± 0.4 [μs]	L_i [mm] ± 0.001 [mm]
1	81.6	110.000
2	87.6	120.000
3	94.4	130.000
4	101.8	140.000
5	108.0	150.000
6	114.4	160.000
7	121.2	170.000
8	128.0	180.000
9	134.8	190.000
10	141.2	200.000
11	148.0	210.000
12	154.8	220.000

Table 3. Data table for the time difference method (liquid).

⚠ t-l
not l-t !
set Δl same
slope
$\frac{1}{v}$: uncertainty propagation
error bar: ##

Instructor's signature: Y.Y.