

UM-SJTU JOINT INSTITUTE
PHYSICS LABORATORY
DATA SHEET (EXERCISE 4)

Name: 曹致远

Student ID: 518370910030

Name: 政阳文林 Group 8

Student ID: 518021910945

Group: 14

Date: 2019/6/21

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 $f = \underline{36.638} \text{ [kHz]} \pm \underline{0.001} \text{ [kHz]}$
Temperature $T = \underline{22} \text{ [}^\circ\text{C]} \pm \underline{1} \text{ [}^\circ\text{C]}$

$L_i \text{ [mm]} \pm 0.001 \text{ [mm]}$	$L_i \text{ [mm]} \pm 0.001 \text{ [mm]}$
1 27.95 28.671	7 57.372
2 28.671 33.448	8 62.035
3 33.448 38.220	9 66.788
4 42.996	10 71.548
5 47.815	11 76.295
6 52.553	12 81.027

Table 1. Data table for the resonance method.

$L_i \text{ [mm]} \pm 0.001 \text{ [mm]}$	$L_i \text{ [mm]} \pm 0.001 \text{ [mm]}$
1 82.484 111.528	7 168.812
2 93.012 121.440	8 178.525
3 102.765 131.377	9 188.613
4 140.805	10 198.440
5 150.170	11 207.780
6 159.089	12 216.989

Table 2. Data table for the phase comparison method.

Instructor's signature: Y.Y.

	t_i [μs] ± 0.2 [μs]	L_i [mm] ± 0.00 [mm]
1	109.2	150.862
2	112.6	155.670
3	115.8	160.462
4	119.4	165.58 165.558
5	122.8	170.490
6	126.0 126.2	175.882
7	129.6	180.582
8	132.8	185.541
9	136.0	190.581
10	139.6	195.650
11	143.0	200.525
12	146.4	205.560

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

Instructor's signature: Y.Y.