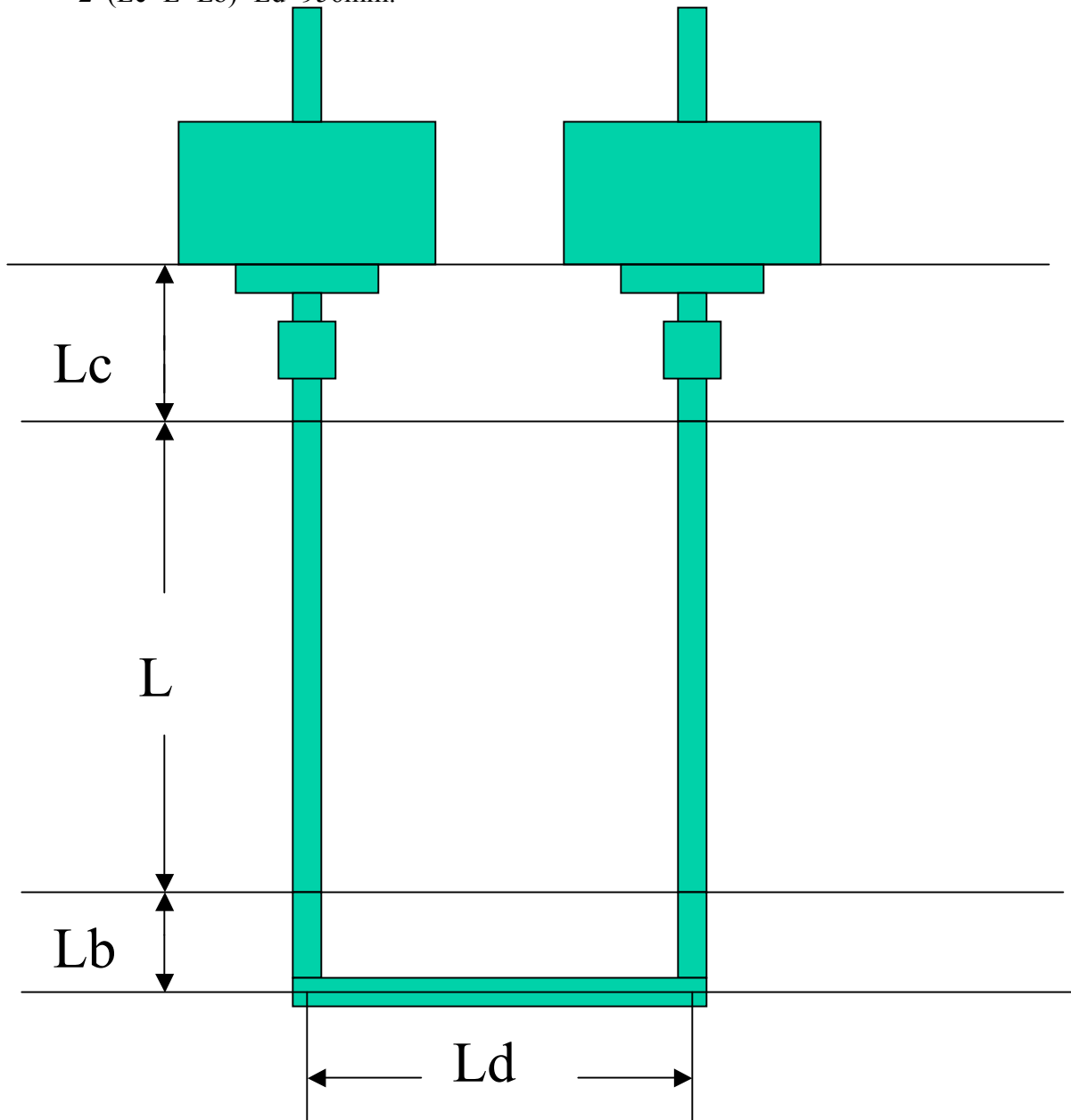


## The configuration of coupled cavities and some basic data

1. The coupled cavities is showed in the figure1. The total cable length is  $2*(L_c+L+L_b)+L_d=956\text{mm}$ .



## 2. The phase deviation between two cavities

Table 1 shows the phase deviation between two cavities. The present beam test set up is 956mm. The results obtained from HFSS simulation.

Table 1 phase deviation between two cavities

Cable length	942mm	950mm	956mm
$\Delta\phi$	0.4°	3.3°	5.8°

## 3. The displacement dependence on power and $\Delta\phi$

Table 2 and 3 show the dependence of displacement of chopped beam at the position of scraper on the input power and  $\Delta\phi$ . The results are obtained from Trace3d simulation with  $Q_4=120A$  and  $Q_4=135A$  respectively. In the simulation, an assumption is that the reference particles always meet the peak field at cavity 1, and the deviation  $\Delta\phi$  is the phase shift from peak field of cavity 2.

Table 2 The dependence of displacement on power and  $\Delta\phi$ ,  $Q_4=120A$

Displacement(mm)		$\Delta\phi$				
		0°	5.8°	10°	20°	30°
Input power	10kW	12.36	12.34	12.29	12.07	11.71
	20kW	17.53	17.50	17.44	17.12	16.60
	30kW	21.47	21.43	21.35	20.96	20.33
	36kW	23.49	23.45	23.36	22.94	22.24

Table 3 The dependence of displacement on power and  $\Delta\phi$ ,  $Q_4=135A$

Displacement(mm)		$\Delta\phi$				
		0°	5.8°	10°	20°	30°
Input power	10kW	12.96	12.94	12.89	12.66	12.28
	20kW	18.38	18.35	18.28	17.96	17.41
	30kW	22.51	22.47	22.38	21.98	21.32
	36kW	24.63	24.59	24.49	24.06	23.33