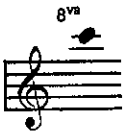
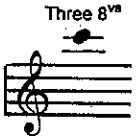
From: Musical Instrument Design: Practical Information for Instrument Making
By Bart Hopkin, 1996 Sharp Press; Tuscon

FREQUENCY, PITCH, AND WAVELENGTH

Pitch Name (ASA)	Pitch Name (Helm.)	Frequency	Wave-length (cm)	Wave-length (inches)	
C_0	C"	16.352	2100.71	827 1/16	C_0: Bottom of the organ's 32' octave; lowest definite pitch on any standard instrument.
D_0	D"	18.354	1871.52	736 13/16	
E_0	E"	20.602	1667.34	656 7/16	20Hz: Approximate bottom of hearing range for someone with good hearing.
F_0	F"	21.827	1573.76	619 19/32	
G_0	G"	24.500	1402.06	551	
A_0	A"	27.500	1249.09	491 25/32	A_0: Standard piano's lowest note
B_0	B"	30.868	1112.81	438 1/8	
C_1	C'	32.703	1050.36	413 17/32	
D_1	D'	36.708	935.76	368 13/32	
E_1	E'	41.203	833.67	328 7/32	String bass low E
F_1	F'	43.654	786.88	309 25/32	
G_1	G'	48.999	701.03	275	
A_1	A'	55.000	624.55	245 7/8	
B_1	B'	61.735	556.41	219 1/16	
C_2	C	65.406	525.18	206 3/4	
D_2	D	73.416	467.88	184 7/32	
E_2	E	82.407	416.83	164 3/32	Guitar low E
F_2	F	87.307	393.44	154 29/32	
G_2	G	97.999	350.51	137	
A_2	A	110.00	312.27	122 15/16	
B_2	B	123.47	278.20	109 17/32	
C_3	c	130.81	262.59	103 3/8	
D_3	d	146.83	233.94	92 3/32	
E_3	e	164.81	208.42	82 1/16	
F_3	f	174.61	196.72	77 7/16	
G_3	g	196.00	175.26	68	
A_3	a	220.00	156.14	61 15/32	
B_3	b	246.94	139.1	54 3/4	
C_4	c'	261.63	131.3	51 11/16	**MIDDLE C**
D_4	d'	293.66	117.0	46 1/16	
E_4	e'	329.63	104.2	41 1/32	
F_4	f'	349.23	98.4	38 23/32	
G_4	g'	392.00	87.6	34 1/2	
A_4	a'	440.00	78.1	30 3/4	**A-440**
B_4	b'	493.88	69.6	27 3/8	
C_5	c"	523.25	65.7	25 27/32	
D_5	d"	587.33	58.5	23 1/32	
E_5	e"	659.26	52.1	20 1/2	
F_5	f"	698.46	49.2	19 3/8	
G_5	g"	783.99	43.8	17 1/4	
A_5	a"	880.00	39.0	15 3/8	
B_5	b"	987.77	34.8	13 11/16	

in 12-Tone Equal Temperament





Pitch Name (ASA)	Pitch Name (Helm.)	Frequency	Wave-length (cm)	Wave-length (inches)	
C_6	c'''	1046.5	32.8	12 15/16	C_6: Highest normal note for trumpet
D_6	d'''	1174.7	29.2	11 1/2	
E_6	e'''	1318.5	26.1	10 1/4	
F_6	f'''	1396.9	24.6	9 11/16	
G_6	g'''	1568.0	21.9	8 5/8	
A_6	a'''	1760.0	19.5	7 11/16	
B_6	b'''	1975.5	17.4	6 27/32	$B\flat_6$: Bb sop. clarinet's highest note
C_7	c''''	2093.0	16.4	6 15/32	
D_7	d''''	2349.3	14.6	5 3/4	
E_7	e''''	2637.0	13.0	5 1/8	
F_7	f''''	2793.8	12.3	4 27/32	
G_7	g''''	3136.0	11.0	4 5/16	
A_7	a''''	3520.0	9.8	3 27/32	
B_7	b''''	3951.1	8.7	3 7/16	
C_8	c'''''	4186.0	8.2	3 7/32	C_8: Standard piano's top note
D_8	d'''''	4698.6	7.3	2 7/8	D_8: Piccolo's top note
E_8	e'''''	5274.0	6.5	2 9/16	
F_8	f'''''	5587.7	6.2	2 13/32	
G_8	g'''''	6271.9	5.5	2 5/32	
A_8	a'''''	7040.0	4.9	1 29/32	
B_8	b'''''	7902.1	4.4	1 23/32	
C_9	c''''''	8372.0	4.1	1 5/8	
D_9	d''''''	9397.3	3.7	1 7/16	
E_9	e''''''	10548.1	3.3	1 9/32	
F_9	f''''''	11175.3	3.1	1 7/32	
G_9	g''''''	12543.9	2.7	1 1/16	
A_9	a''''''	14080.0	2.4	0 31/32	
B_9	b''''''	15804.3	2.2	0 27/32	20,000Hz: Approximate upper limit of hearing range for one with good hearing.
C_{10}	c'''''''	16744.1	2.1	0 13/16	

ADDITIONAL NOTES FOR THIS CHART

This chart contains data for natural notes only. To find the frequency of a sharp or flat, multiply the frequency of the pitch a semitone below by the 12-equal scale factor of 1.05946. To find the wavelength, divide the wavelength of the pitch a semitone below by the same factor.

The wavelengths given in this chart are based on a sound speed of 343.5 meters per second, which corresponds to typical atmospheric conditions at a temperature of 68 degrees Fahrenheit. At warmer temperatures the wavelength for any given pitch will be slightly longer, and at cooler temperatures it will be slightly shorter.

Temperatures within breath-blown wind instrument tubes are typically slightly higher. For such applications, multiply the wavelength values on this chart by 1%, for results corresponding to a temperature of 83 degrees Fahrenheit and a sound speed of 347 meters per second.