

» Fractional Octave Band Filter

The following tables contain the exact frequencies of a filter by octave, third octave, sixth octave and twelfth octave bands. All specifications refer to base 10, in accordance with IEC 61260-1:2014.

Octave-band filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
1	1.0	0.7	1.4	0.70
2	2.0	1.4	2.8	1.41
4	4.0	2.8	5.6	2.81
8	7.9	5.6	11.2	5.60
16	15.8	11.2	22.4	11.2
31.5	31.6	22.4	44.7	22.3
63	63.1	44.7	89.1	44.5
125	125.9	89.1	177.8	88.7
250	251.2	177.8	354.8	177.0
500	501.2	354.8	707.9	353.1
1000	1000.0	707.9	1412.5	704.6
2000	1995.3	1412.5	2818.4	1405.8
4000	3981.1	2818.4	5623.4	2805.0
8000	7943.3	5623.4	11220.2	5596.8
16000	15848.9	11220.2	22387.2	11167.0

1/3-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
0.8	0.79	0.71	0.89	0.18
1	1.00	0.89	1.12	0.23
1.25	1.26	1.12	1.41	0.29
1.6	1.58	1.41	1.78	0.37
2	2.00	1.78	2.24	0.46
2.5	2.51	2.24	2.82	0.58
3.15	3.16	2.82	3.55	0.73
4	3.98	3.55	4.47	0.92
5	5.01	4.47	5.62	1.16
6.3	6.31	5.62	7.08	1.46

1/3-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
8	7.94	7.08	8.91	1.83
10	10.0	8.91	11.2	2.31
12.5	12.6	11.2	14.1	2.91
16	15.8	14.1	17.8	3.66
20	20.0	17.8	22.4	4.60
25	25.1	22.4	28.2	5.80
31.5	31.6	28.2	35.5	7.30
40	39.8	35.5	44.7	9.19
50	50.1	44.7	56.2	11.6
63	63.1	56.2	70.8	14.6
80	79.4	70.8	89.1	18.3
100	100.0	89.1	112.2	23.1
125	125.9	112.2	141.3	29.1
160	158.5	141.3	177.8	36.6
200	199.5	177.8	223.9	46.0
250	251.2	223.9	281.8	58.0
315	316.2	281.8	354.8	73.0
400	398.1	354.8	446.7	91.9
500	501.2	446.7	562.3	115.7
630	631.0	562.3	707.9	145.6
800	794.3	707.9	891.3	183.3
1000	1000.0	891.3	1122.0	230.8
1250	1258.9	1122.0	1412.5	290.5
1600	1584.9	1412.5	1778.3	365.7
2000	1995.3	1778.3	2238.7	460.4
2500	2511.9	2238.7	2818.4	579.7
3150	3162.3	2818.4	3548.1	729.8
4000	3981.1	3548.1	4466.8	918.7
5000	5011.9	4466.8	5623.4	1156.6
6300	6309.6	5623.4	7079.5	1456.0
8000	7943.3	7079.5	8912.5	1833.1
10000	10000.0	8912.5	11220.2	2307.7
12500	12589.3	11220.2	14125.4	2905.2
16000	15848.9	14125.4	17782.8	3657.4
20000	19952.6	17782.8	22387.2	4604.4

1/6-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
0.75	0.75	0.71	0.79	0.09
0.84	0.84	0.79	0.89	0.10
0.94	0.94	0.89	1.00	0.11
1.06	1.06	1.00	1.12	0.12
1.19	1.19	1.12	1.26	0.14
1.33	1.33	1.26	1.41	0.15
1.50	1.50	1.41	1.58	0.17
1.68	1.68	1.58	1.78	0.19
1.88	1.88	1.78	2.00	0.22
2.11	2.11	2.00	2.24	0.24
2.37	2.37	2.24	2.51	0.27
2.66	2.66	2.51	2.82	0.31
2.99	2.99	2.82	3.16	0.34
3.35	3.35	3.16	3.55	0.39
3.76	3.76	3.55	3.98	0.43
4.22	4.22	3.98	4.47	0.49
4.73	4.73	4.47	5.01	0.55
5.3	5.31	5.01	5.62	0.61
6	5.96	5.62	6.31	0.69
6.7	6.68	6.31	7.08	0.77
7.5	7.50	7.08	7.94	0.86
8.4	8.41	7.94	8.91	0.97
9.4	9.44	8.91	10.0	1.09
10.6	10.6	10.0	11.2	1.22
11.9	11.9	11.2	12.6	1.37
13.3	13.3	12.6	14.1	1.54
15	15.0	14.1	15.8	1.72
16.8	16.8	15.8	17.8	1.93
18.8	18.8	17.8	20.0	2.17
21.1	21.1	20.0	22.4	2.43
23.7	23.7	22.4	25.1	2.73
26.6	26.6	25.1	28.2	3.06
29.9	29.9	28.2	31.6	3.44
33.5	33.5	31.6	35.5	3.86
37.6	37.6	35.5	39.8	4.33
42.2	42.2	39.8	44.7	4.86

1/6-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
47.3	47.3	44.7	50.1	5.45
53	53.1	50.1	56.2	6.12
60	59.6	56.2	63.1	6.86
67	66.8	63.1	70.8	7.70
75	75.0	70.8	79.4	8.64
84	84.1	79.4	89.1	9.69
94	94.4	89.1	100.0	10.9
106	105.9	100.0	112.2	12.2
119	118.9	112.2	125.9	13.7
133	133.4	125.9	141.3	15.4
150	149.6	141.3	158.5	17.2
168	167.9	158.5	177.8	19.3
188	188.4	177.8	199.5	21.7
211	211.3	199.5	223.9	24.3
237	237.1	223.9	251.2	27.3
266	266.1	251.2	281.8	30.6
299	298.5	281.8	316.2	34.4
335	335.0	316.2	354.8	38.6
376	375.8	354.8	398.1	43.3
422	421.7	398.1	446.7	48.6
473	473.2	446.7	501.2	54.5
530	530.9	501.2	562.3	61.2
600	595.7	562.3	631.0	68.6
670	668.3	631.0	707.9	77.0
750	749.9	707.9	794.3	86.4
840	841.4	794.3	891.3	96.9
940	944.1	891.3	1000.0	108.7
1060	1059.3	1000.0	1122.0	122.0
1190	1188.5	1122.0	1258.9	136.9
1330	1333.5	1258.9	1412.5	153.6
1500	1496.2	1412.5	1584.9	172.4
1680	1678.8	1584.9	1778.3	193.4
1880	1883.6	1778.3	1995.3	217.0
2110	2113.5	1995.3	2238.7	243.5
2370	2371.4	2238.7	2511.9	273.2
2660	2660.7	2511.9	2818.4	306.5

1/6-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
2990	2985.4	2818.4	3162.3	343.9
3350	3349.7	3162.3	3548.1	385.9
3760	3758.4	3548.1	3981.1	432.9
4220	4217.0	3981.1	4466.8	485.8
4730	4731.5	4466.8	5011.9	545.0
5300	5308.8	5011.9	5623.4	611.5
6000	5956.6	5623.4	6309.6	686.2
6700	6683.4	6309.6	7079.5	769.9
7500	7498.9	7079.5	7943.3	863.8
8400	8414.0	7943.3	8912.5	969.2
9400	9440.6	8912.5	10000.0	1087.5
10600	10592.5	10000.0	11220.2	1220.2
11900	11885.0	11220.2	12589.3	1369.1
13300	13335.2	12589.3	14125.4	1536.1
15000	14962.4	14125.4	15848.9	1723.6
16800	16788.0	15848.9	17782.8	1933.9
18800	18836.5	17782.8	19952.6	2169.8
21100	21134.9	19952.6	22387.2	2434.6
23700	23713.7	22387.2	25118.9	2731.7

1/12-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
0.73	0.73	0.71	0.75	0.04
0.77	0.77	0.75	0.79	0.04
0.82	0.82	0.79	0.84	0.05
0.87	0.87	0.84	0.89	0.05
0.92	0.92	0.89	0.94	0.05
0.97	0.97	0.94	1.00	0.06
1.03	1.03	1.00	1.06	0.06
1.09	1.09	1.06	1.12	0.06
1.15	1.15	1.12	1.19	0.07
1.22	1.22	1.19	1.26	0.07
1.3	1.30	1.26	1.33	0.07
1.37	1.37	1.33	1.41	0.08
1.45	1.45	1.41	1.50	0.08
1.54	1.54	1.50	1.58	0.09
1.63	1.63	1.58	1.68	0.09
1.73	1.73	1.68	1.78	0.10
1.83	1.83	1.78	1.88	0.11
1.94	1.94	1.88	2.00	0.11
2.05	2.05	2.00	2.11	0.12
2.18	2.18	2.11	2.24	0.13
2.3	2.30	2.24	2.37	0.13
2.44	2.44	2.37	2.51	0.14
2.59	2.59	2.51	2.66	0.15
2.74	2.74	2.66	2.82	0.16
2.9	2.90	2.82	2.99	0.17
3.07	3.07	2.99	3.16	0.18
3.25	3.25	3.16	3.35	0.19
3.45	3.45	3.35	3.55	0.20
3.65	3.65	3.55	3.76	0.21
3.87	3.87	3.76	3.98	0.22
4.1	4.10	3.98	4.22	0.24
4.34	4.34	4.22	4.47	0.25
4.6	4.60	4.47	4.73	0.26
4.87	4.87	4.73	5.01	0.28
5.2	5.16	5.01	5.31	0.30
5.5	5.46	5.31	5.62	0.31

1/12-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
5.8	5.79	5.62	5.96	0.33
6.1	6.13	5.96	6.31	0.35
6.5	6.49	6.31	6.68	0.37
6.9	6.88	6.68	7.08	0.40
7.3	7.29	7.08	7.50	0.42
7.7	7.72	7.50	7.94	0.44
8.2	8.18	7.94	8.41	0.47
8.7	8.66	8.41	8.91	0.50
9.2	9.17	8.91	9.44	0.53
9.7	9.72	9.44	10.0	0.56
10.3	10.3	10.0	10.6	0.59
10.9	10.9	10.6	11.2	0.63
11.5	11.5	11.2	11.9	0.66
12.2	12.2	11.9	12.6	0.70
13	13.0	12.6	13.3	0.75
13.7	13.7	13.3	14.1	0.79
14.5	14.5	14.1	15.0	0.84
15.4	15.4	15.0	15.8	0.89
16.3	16.3	15.8	16.8	0.94
17.3	17.3	16.8	17.8	0.99
18.3	18.3	17.8	18.8	1.05
19.4	19.4	18.8	20.0	1.12
20.5	20.5	20.0	21.1	1.18
21.8	21.8	21.1	22.4	1.25
23	23.0	22.4	23.7	1.33
24.4	24.4	23.7	25.1	1.41
25.9	25.9	25.1	26.6	1.49
27.4	27.4	26.6	28.2	1.58
29	29.0	28.2	29.9	1.67
30.7	30.7	29.9	31.6	1.77
32.5	32.5	31.6	33.5	1.87
34.5	34.5	33.5	35.5	1.98
36.5	36.5	35.5	37.6	2.10
38.7	38.7	37.6	39.8	2.23
41	41.0	39.8	42.2	2.36
43.4	43.4	42.2	44.7	2.50

1/12-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
46	46.0	44.7	47.3	2.65
48.7	48.7	47.3	50.1	2.80
52	51.6	50.1	53.1	2.97
55	54.6	53.1	56.2	3.15
58	57.9	56.2	59.6	3.33
61	61.3	59.6	63.1	3.53
65	64.9	63.1	66.8	3.74
69	68.8	66.8	70.8	3.96
73	72.9	70.8	75.0	4.19
77	77.2	75.0	79.4	4.44
82	81.8	79.4	84.1	4.71
87	86.6	84.1	89.1	4.99
92	91.7	89.1	94.4	5.28
97	97.2	94.4	100.0	5.59
103	102.9	100.0	105.9	5.93
109	109.0	105.9	112.2	6.28
115	115.5	112.2	118.9	6.65
122	122.3	118.9	125.9	7.04
130	129.6	125.9	133.4	7.46
137	137.2	133.4	141.3	7.90
145	145.4	141.3	149.6	8.37
154	154.0	149.6	158.5	8.87
163	163.1	158.5	167.9	9.39
173	172.8	167.9	177.8	9.95
183	183.0	177.8	188.4	10.5
194	193.9	188.4	199.5	11.2
205	205.4	199.5	211.3	11.8
218	217.5	211.3	223.9	12.5
230	230.4	223.9	237.1	13.3
244	244.1	237.1	251.2	14.1
259	258.5	251.2	266.1	14.9
274	273.8	266.1	281.8	15.8
290	290.1	281.8	298.5	16.7
307	307.3	298.5	316.2	17.7
325	325.5	316.2	335.0	18.7
345	344.7	335.0	354.8	19.8

1/12-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
365	365.2	354.8	375.8	21.0
387	386.8	375.8	398.1	22.3
410	409.7	398.1	421.7	23.6
434	434.0	421.7	446.7	25.0
460	459.7	446.7	473.2	26.5
487	487.0	473.2	501.2	28.0
520	515.8	501.2	530.9	29.7
550	546.4	530.9	562.3	31.5
580	578.8	562.3	595.7	33.3
610	613.1	595.7	631.0	35.3
650	649.4	631.0	668.3	37.4
690	687.9	668.3	707.9	39.6
730	728.6	707.9	749.9	41.9
770	771.8	749.9	794.3	44.4
820	817.5	794.3	841.4	47.1
870	866.0	841.4	891.3	49.9
920	917.3	891.3	944.1	52.8
970	971.6	944.1	1000.0	55.9
1030	1029.2	1000.0	1059.3	59.3
1090	1090.2	1059.3	1122.0	62.8
1150	1154.8	1122.0	1188.5	66.5
1220	1223.2	1188.5	1258.9	70.4
1300	1295.7	1258.9	1333.5	74.6
1370	1372.5	1333.5	1412.5	79.0
1450	1453.8	1412.5	1496.2	83.7
1540	1539.9	1496.2	1584.9	88.7
1630	1631.2	1584.9	1678.8	93.9
1730	1727.8	1678.8	1778.3	99.5
1830	1830.2	1778.3	1883.6	105.4
1940	1938.7	1883.6	1995.3	111.6
2050	2053.5	1995.3	2113.5	118.2
2180	2175.2	2113.5	2238.7	125.2
2300	2304.1	2238.7	2371.4	132.7
2440	2440.6	2371.4	2511.9	140.5
2590	2585.2	2511.9	2660.7	148.8
2740	2738.4	2660.7	2818.4	157.7

1/12-Octave-Band Filter

Nominal mid-band frequency [Hz]	Exact mid-band frequency [Hz]	Lower frequency [Hz]	Upper frequency [Hz]	Bandwidth [Hz]
2900	2900.7	2818.4	2985.4	167.0
3070	3072.6	2985.4	3162.3	176.9
3250	3254.6	3162.3	3349.7	187.4
3450	3447.5	3349.7	3548.1	198.5
3650	3651.7	3548.1	3758.4	210.2
3870	3868.1	3758.4	3981.1	222.7
4100	4097.3	3981.1	4217.0	235.9
4340	4340.1	4217.0	4466.8	249.9
4600	4597.3	4466.8	4731.5	264.7
4870	4869.7	4731.5	5011.9	280.4
5200	5158.2	5011.9	5308.8	297.0
5500	5463.9	5308.8	5623.4	314.6
5800	5787.6	5623.4	5956.6	333.2
6100	6130.6	5956.6	6309.6	353.0
6500	6493.8	6309.6	6683.4	373.9
6900	6878.6	6683.4	7079.5	396.0
7300	7286.2	7079.5	7498.9	419.5
7700	7717.9	7498.9	7943.3	444.3
8200	8175.2	7943.3	8414.0	470.7
8700	8659.6	8414.0	8912.5	498.6
9200	9172.8	8912.5	9440.6	528.1
9700	9716.3	9440.6	10000.0	559.4
10300	10292.0	10000.0	10592.5	592.5
10900	10901.8	10592.5	11220.2	627.6
11500	11547.8	11220.2	11885.0	664.8
12200	12232.1	11885.0	12589.3	704.2
13000	12956.9	12589.3	13335.2	746.0
13700	13724.6	13335.2	14125.4	790.2
14500	14537.8	14125.4	14962.4	837.0
15400	15399.3	14962.4	15848.9	886.6
16300	16311.7	15848.9	16788.0	939.1
17300	17278.3	16788.0	17782.8	994.8
18300	18302.1	17782.8	18836.5	1053.7
19400	19386.5	18836.5	19952.6	1116.1
20500	20535.3	19952.6	21134.9	1182.3
21800	21752.0	21134.9	22387.2	1252.3
23000	23040.9	22387.2	23713.7	1326.5