

A black and white photograph of an anechoic chamber. The walls are covered with numerous dark, pyramid-shaped acoustic absorbers. In the foreground, a microphone is mounted on a tripod, with a cable extending from it. The lighting is dramatic, highlighting the texture of the absorbers.

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INVISIBLE
LINEAR
DIFFUSERS

VI.8 PL-BLANCPRO-001

BLANCPRO

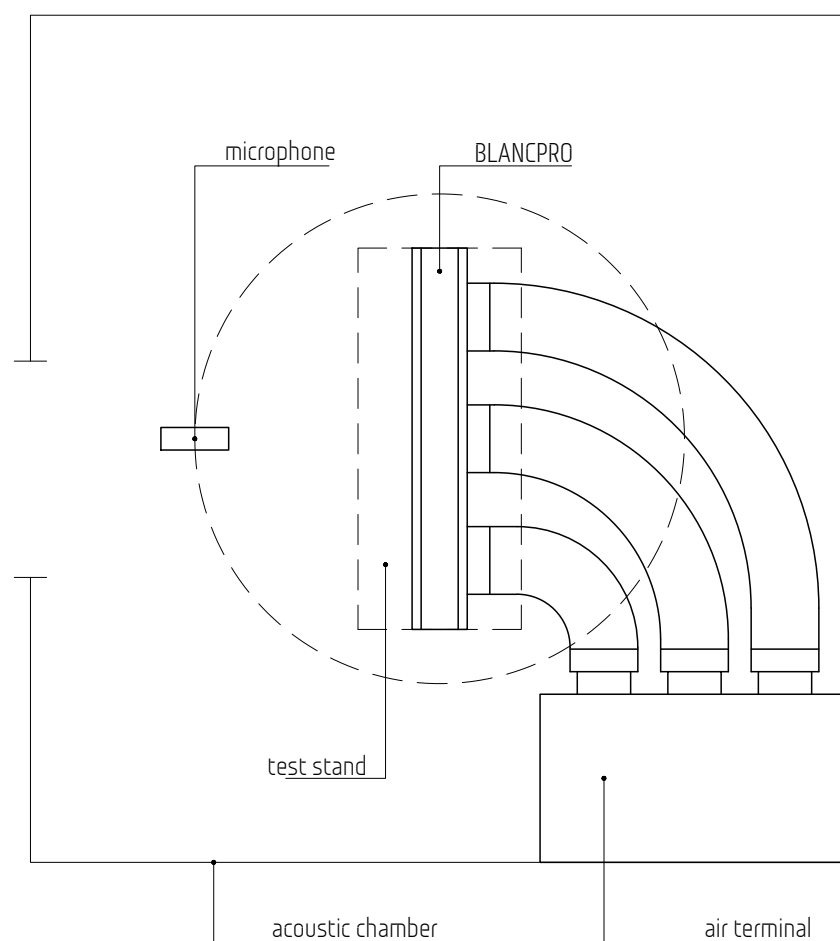
Acoustic Test Report

dated 19.09.2024

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Figure 1 - ACOUSTIC TEST RIG SCHEMATIC



The rig was designed in accordance with GOST 32112-2013, "Acoustics. Determination of noise characteristics of air distribution equipment. Precision methods for semi-anechoic rooms."

The rig consists of a semi-anechoic acoustic chamber and a ventilation system. The chamber walls and ceiling are lined with sound-absorbing material.

The diffuser sample with its plenum box is installed on a stand in the centre of the chamber and connected to the ventilation system using flexible ducts.

The ventilation system is connected to the acoustic chamber and equipped with airflow control and measurement systems.

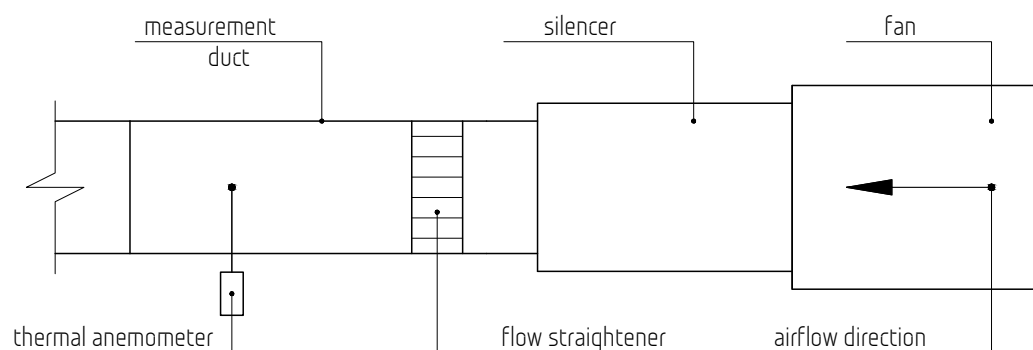




Figure 2 - GENERAL VIEW OF THE ACOUSTIC CHAMBER

Tests are performed on 1000 mm diffuser samples with BOXBLC plenum boxes in the STD version (side connections). The difference in acoustic performance between a diffuser with an STD plenum box and one with an FRNT plenum box does not exceed $\pm 5\%$.

Before testing, the diffuser and BOXBLC plenum box are installed on a stand in the centre of the acoustic chamber and connected to the ventilation system.

During testing, a series of experimental points is recorded to obtain the acoustic performance of the diffuser and plenum box. The rig is set to different specified airflow values. At each steady-state condition, the current airflow and the corresponding sound pressure level are measured simultaneously.

Measured parameters:

- q_v - airflow rate [m^3/h];
- L_{eqA} - A-weighted sound pressure level [dB(A)];
- L_{eq} - sound pressure level [dB];
- T_{meas} - air temperature [$^{\circ}C$];
- ϕ_{rel} - relative air humidity [%];
- B_{meas} - atmospheric pressure [Pa].

The test data are processed using the least-squares method to obtain an approximated characteristic curve. Sound power is calculated using the following equations:

$$L_{wA} = L_{pf} + 10 \log \left(\frac{S_k}{S_0} \right) + C_1 + C_2$$

$$C_1 = -10 \log \left[\frac{B_{meas}}{B_0} \times \sqrt{\frac{313.15}{273.15 + T_{meas}}} \right]$$

$$C_2 = -15 \log \left[\frac{B_{meas}}{B_0} \times \sqrt{\frac{296.15}{273.15 + T_{meas}}} \right]$$

Table 1 - LIST OF MEASURING INSTRUMENTS

No.	Measured parameter	Measuring instrument (QR code: FGIS "Arshin")
1	Air velocity	TTM-2-01 T thermal anemometer 
2	Sound pressure level	Oktava-111 sound level meter 

L_{wA} - A-weighted sound power level [dB(A)]; L_{pf} - mean sound pressure level on the measurement hemisphere [dB(A)]; S_k - measurement hemisphere area [m^2];
 S_0 - reference area [m^2]; C_1, C_2 - corrections for meteorological conditions [dB]; B_0 - atmospheric pressure at standard conditions [Pa].

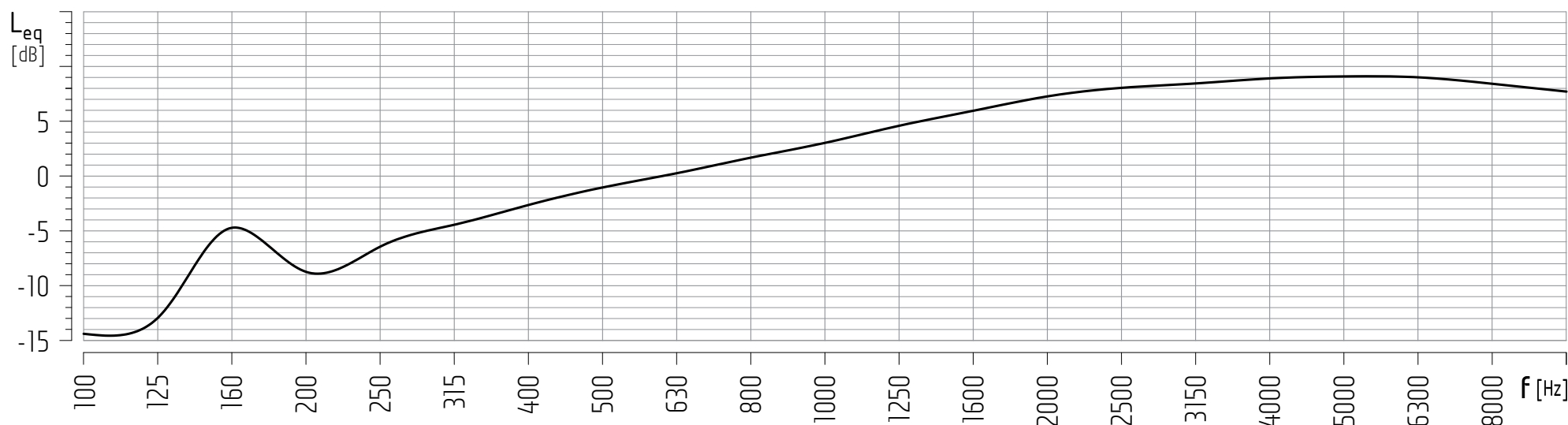
Table 2 - SOUND POWER CALCULATION RESULTS (VERTICAL FLOW)

	BLANCPRO 20					BLANCPRO 30					BLANCPRO 40				
Test no.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
q_v [m ³ /h]	109	139	183	218	255	148	227	271	321	412	233	307	373	448	520
L_{eqA} [dB(A)]	19.6	22.5	27.2	31.0	35.0	20.6	26.6	30.5	34.0	39.8	22.8	28.4	32.7	37.1	40.7
L_{wA} [dB(A)]	21.4	24.3	29.0	32.8	36.8	22.4	28.4	32.3	35.8	41.6	24.6	30.2	34.5	38.9	42.5

Table 3 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{eq} [dB]	-14.4	-13.0	-4.8	-8.8	-6.5	-4.5	-2.7	-1.1	0.2	1.6	3.0	4.5	5.9	7.2	8.0	8.4	8.9	9.0	9.0	8.4	7.7

Figure 3 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

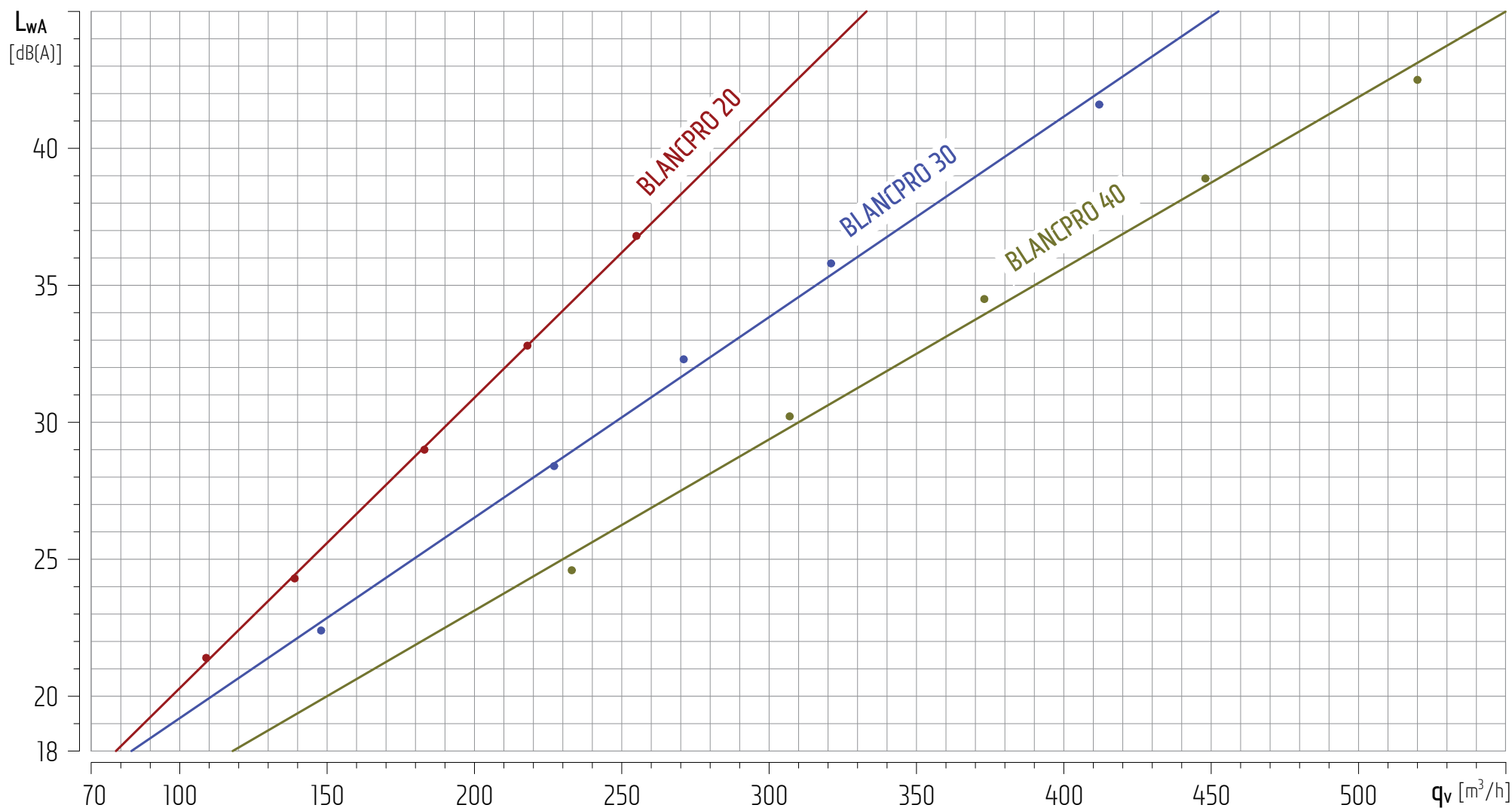


q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];
 L_{eq} - sound pressure level [dB].

L_{wA} - A-weighted sound power level [dB(A)];

f - one-third-octave-band centre frequency [Hz];

Figure 4 - SOUND POWER LEVEL VERSUS AIRFLOW (VERTICAL FLOW)



q_v - airflow rate [m^3/h]; L_{WA} - A-weighted sound power level [dB(A)].

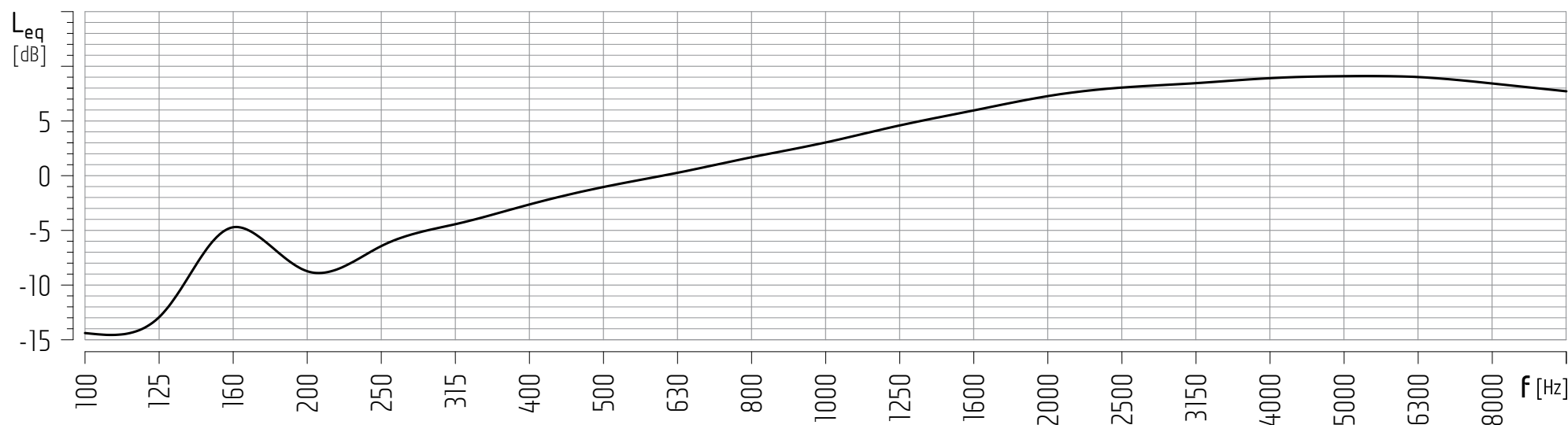
Table 4 - SOUND POWER CALCULATION RESULTS (HORIZONTAL FLOW)

	BLANCPRO 20					BLANCPRO 30					BLANCPRO 40				
Test no.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
q_v [m ³ /h]	69	106	146	179	214	114	163	214	281	328	136	215	287	368	428
L_{eqA} [dB(A)]	17.2	24.6	31.9	37.3	43.9	21.2	29.3	38.6	46.8	51.6	21.7	32.9	42.3	50.1	55.7
L_{wA} [dB(A)]	19.4	26.7	34.0	39.4	46.0	23.3	31.5	40.7	48.9	53.7	23.6	34.9	44.3	52.0	57.7

Table 5 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{eq} [dB]	-14.4	-13.0	-4.8	-8.8	-6.5	-4.5	-2.7	-1.1	0.2	1.6	3.0	4.5	5.9	7.2	8.0	8.4	8.9	9.0	9.0	8.4	7.7

Figure 5 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

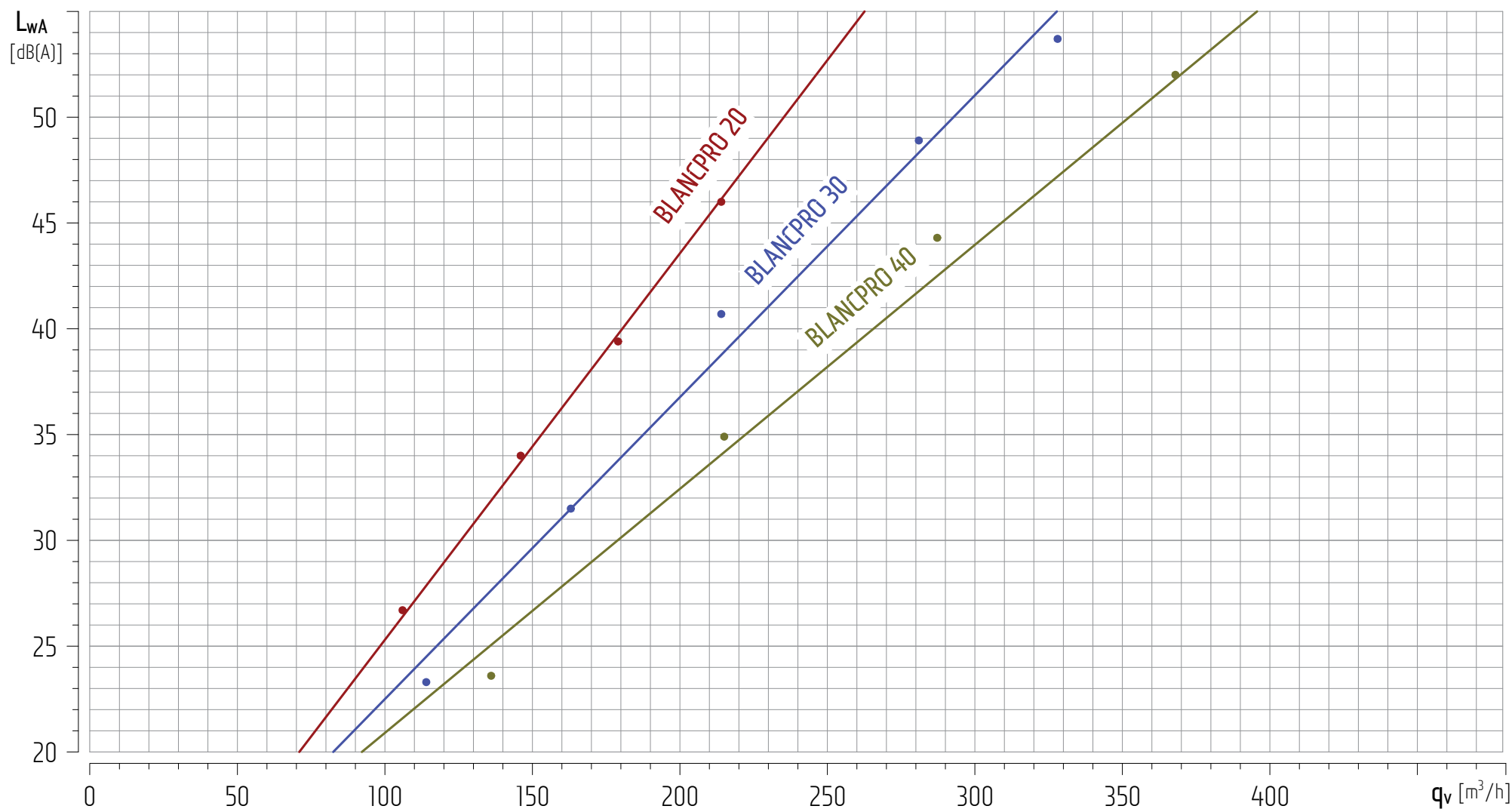


q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];
 L_{eq} - sound pressure level [dB].

L_{wA} - A-weighted sound power level [dB(A)];

f - one-third-octave-band centre frequency [Hz];

Figure 6 - SOUND POWER LEVEL VERSUS AIRFLOW (HORIZONTAL FLOW)



q_v - airflow rate [m^3/h]; L_{WA} - A-weighted sound power level [dB(A)].

Table 6 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 20, 30, 40 (VERTICAL FLOW)

	f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
	q _v [m ³ /h]	L _{eqA} [dB(A)]																				
BLANCPRO 20	77	6.20	5.50	8.18	7.68	6.50	3.90	8.20	2.35	1.44	1.90	3.35	4.53	6.21	7.38	8.20	8.64	9.50	9.42	8.88	7.96	6.50
	109	6.27	5.66	11.39	9.84	12.62	11.85	6.79	8.92	3.63	2.71	4.04	5.09	6.60	7.48	8.58	8.85	9.44	9.56	8.90	8.14	6.54
	139	9.18	8.34	13.54	14.05	17.52	16.79	13.26	8.10	4.23	3.75	4.19	5.79	6.64	7.40	8.24	8.87	9.34	9.39	8.88	8.43	6.27
	183	11.81	14.95	18.24	17.90	23.23	24.00	19.86	15.88	12.42	11.35	10.18	13.15	8.87	8.50	8.92	9.29	9.87	9.58	8.92	8.50	6.71
	218	14.33	17.31	23.04	21.29	27.38	26.12	24.78	21.78	18.72	17.15	17.22	21.44	14.49	13.21	11.59	10.39	11.08	9.49	9.09	8.43	6.33
BLANCPRO 30	118	7.77	6.27	9.60	7.78	8.75	8.19	6.87	7.59	3.99	2.53	3.75	4.97	6.58	7.62	8.37	8.75	9.64	9.42	8.80	8.03	6.51
	148	7.73	8.76	11.11	10.35	13.11	11.28	8.03	7.46	6.76	3.13	3.72	5.15	6.85	7.74	8.22	8.98	9.62	9.34	9.10	7.99	6.51
	227	11.64	14.03	16.37	16.93	23.23	23.13	20.28	15.21	9.98	8.42	7.98	11.17	7.89	8.45	8.70	9.07	9.90	9.30	8.83	8.19	6.47
	271	13.55	18.03	20.11	21.43	27.27	28.01	24.43	21.18	16.51	14.86	14.51	18.72	11.78	10.65	10.42	9.93	9.99	9.84	9.06	8.40	6.48
	321	17.56	20.69	23.95	24.14	30.48	30.17	27.66	24.81	21.23	20.61	20.67	25.38	16.78	14.92	12.64	11.18	10.87	10.6	9.11	8.32	6.53
BLANCPRO 40	155	6.97	6.81	11.10	7.92	9.55	10.43	8.75	11.85	6.56	4.05	5.24	5.61	7.41	8.11	8.64	9.10	9.70	9.39	9.04	8.23	6.35
	233	9.27	9.91	13.33	12.22	16.66	17.41	14.86	8.79	5.32	3.93	4.54	6.36	7.37	7.84	8.94	9.25	9.92	9.43	9.01	8.04	6.38
	307	12.86	15.02	17.67	17.81	24.07	25.38	22.70	18.31	12.93	11.89	10.20	13.46	9.28	8.69	9.37	9.67	10.11	9.61	8.97	8.24	6.40
	373	16.54	18.71	21.92	21.20	28.04	29.13	27.10	23.72	18.86	18.84	17.67	21.47	14.42	11.91	10.82	10.18	10.46	9.73	8.91	8.50	6.38
	448	19.29	23.15	27.72	25.89	32.06	33.64	31.58	28.20	25.06	25.01	24.65	29.75	21.90	19.18	15.19	13.00	11.90	10.51	9.31	8.21	6.63

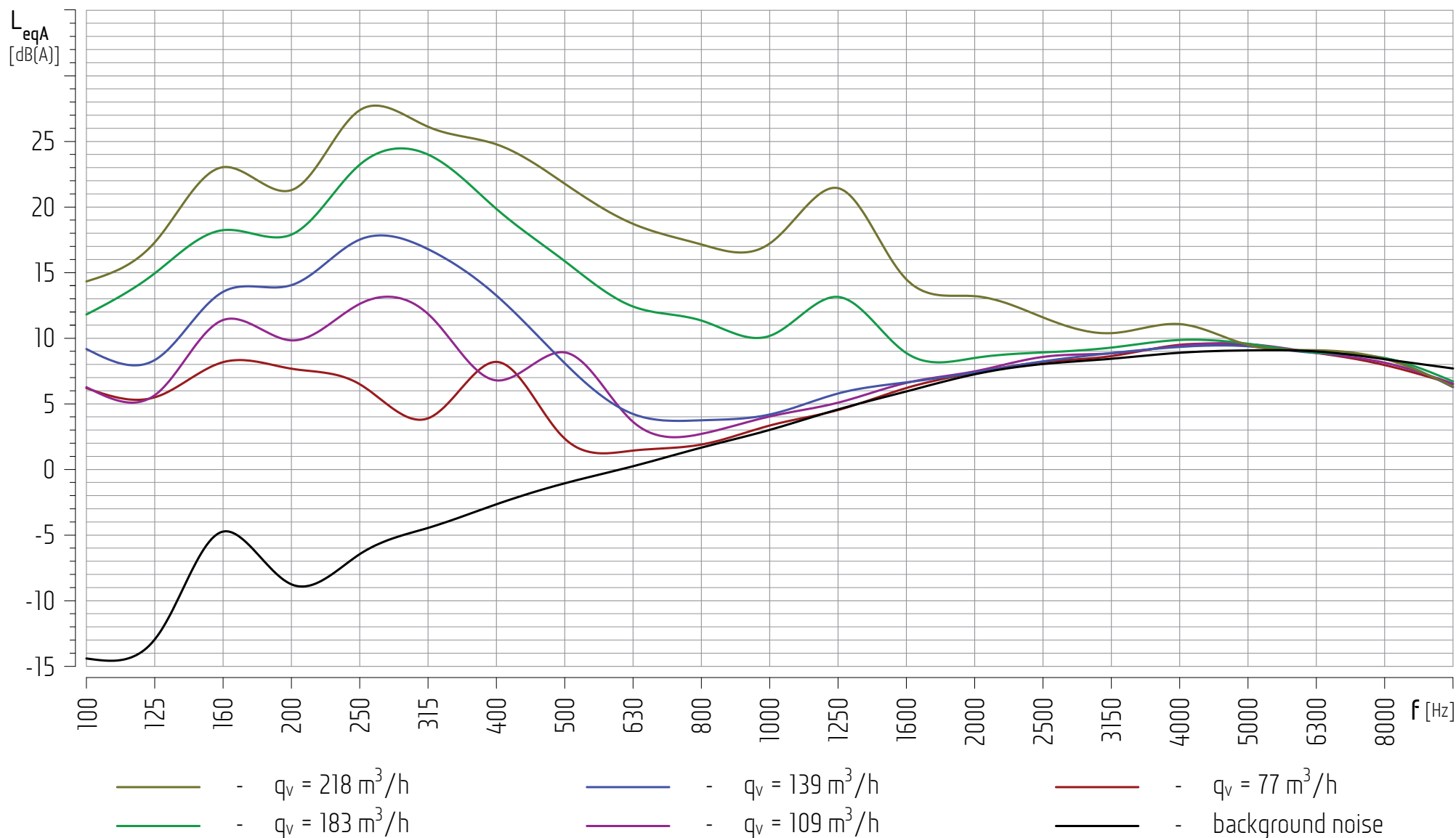
Table 7 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 20, 30, 40 (HORIZONTAL FLOW)

	f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
	q _v [m ³ /h]	L _{eqA} [dB(A)]																				
BLANCPRO 20	69	-2.10	6.60	1.63	3.91	6.91	3.45	-0.11	-1.08	0.22	1.57	3.08	4.60	5.82	6.78	7.75	8.32	8.80	8.89	8.71	7.81	6.42
	106	6.20	16.19	15.38	16.82	20.79	19.11	15.58	11.55	9.88	6.70	5.91	6.54	6.20	6.90	7.95	8.43	8.71	8.79	8.61	7.82	6.47
	146	11.54	23.44	17.36	24.33	28.16	27.33	24.94	21.35	19.89	16.47	15.45	16.07	11.77	10.34	13.51	12.58	9.29	8.86	8.64	7.76	6.46
	179	18.29	25.08	22.08	29.53	33.29	32.46	30.50	27.67	26.50	23.21	22.70	23.83	19.83	17.52	21.82	21.03	12.93	9.29	8.74	7.80	6.50
	214	24.82	32.78	27.08	35.29	39.11	38.25	36.59	34.50	33.90	30.87	31.19	32.36	29.77	27.86	32.07	31.93	23.72	15.15	12.08	10.95	7.94
BLANCPRO 30	114	7.48	15.34	14.32	11.77	14.83	12.90	8.54	4.60	3.67	2.95	3.55	4.76	5.81	6.77	7.69	8.31	8.77	8.79	8.63	7.85	6.51
	163	10.23	23.49	16.04	21.70	25.19	24.81	21.16	17.17	15.47	12.89	12.08	10.48	9.50	7.77	9.48	9.02	8.83	8.84	8.65	7.86	6.61
	214	18.73	23.70	22.96	30.81	34.20	34.71	32.01	28.72	27.61	25.23	25.21	24.07	23.95	19.15	22.09	20.36	12.30	9.37	8.67	7.81	6.58
	281	27.12	31.34	28.86	37.24	42.13	41.91	40.13	37.33	36.74	34.39	34.44	34.04	35.08	30.83	34.04	33.25	24.57	16.97	11.22	8.31	6.96
	328	29.70	37.82	34.00	40.39	45.80	47.02	44.46	42.14	41.74	39.39	39.58	39.44	41.18	36.98	40.64	40.27	31.57	24.25	17.26	11.30	9.46
BLANCPRO 40	136	5.88	15.45	14.67	11.78	14.95	13.30	10.04	5.51	3.74	2.34	3.07	4.55	5.73	6.77	7.65	8.23	8.67	8.79	8.68	8.02	7.12
	215	13.35	21.53	20.01	24.45	28.31	27.67	26.99	24.25	22.75	18.54	17.36	16.35	16.84	10.45	10.02	9.27	8.73	8.74	8.60	7.90	6.89
	287	21.95	29.16	25.73	32.96	36.82	35.84	35.59	33.68	33.45	30.73	30.30	31.12	32.92	25.49	25.05	22.04	12.66	10.11	8.88	7.97	6.96
	368	26.86	35.74	32.03	39.08	43.22	42.94	42.09	40.71	40.75	38.70	39.10	40.54	43.48	37.44	37.97	35.80	25.26	21.10	15.06	10.15	7.98
	428	30.03	38.18	37.39	43.59	47.58	47.67	47.44	45.48	45.96	44.09	44.71	46.65	49.81	44.46	46.33	44.46	34.78	31.39	25.22	18.65	14.78

ACOUSTIC TEST RESULTS FOR BLANCPRO 20

VERTICAL FLOW

Figure 7 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 20



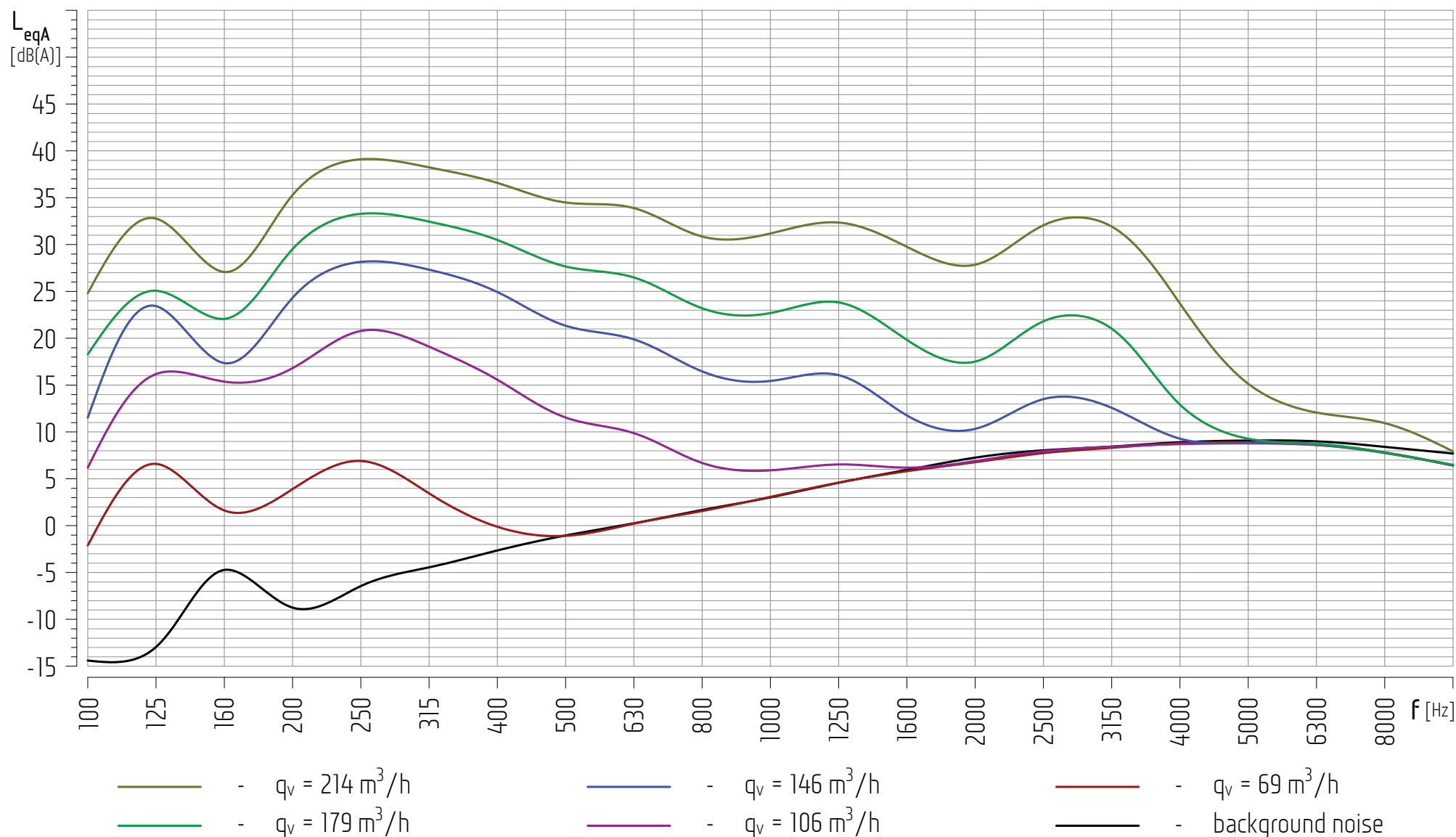
q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 20

HORIZONTAL FLOW

Figure 8 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 20

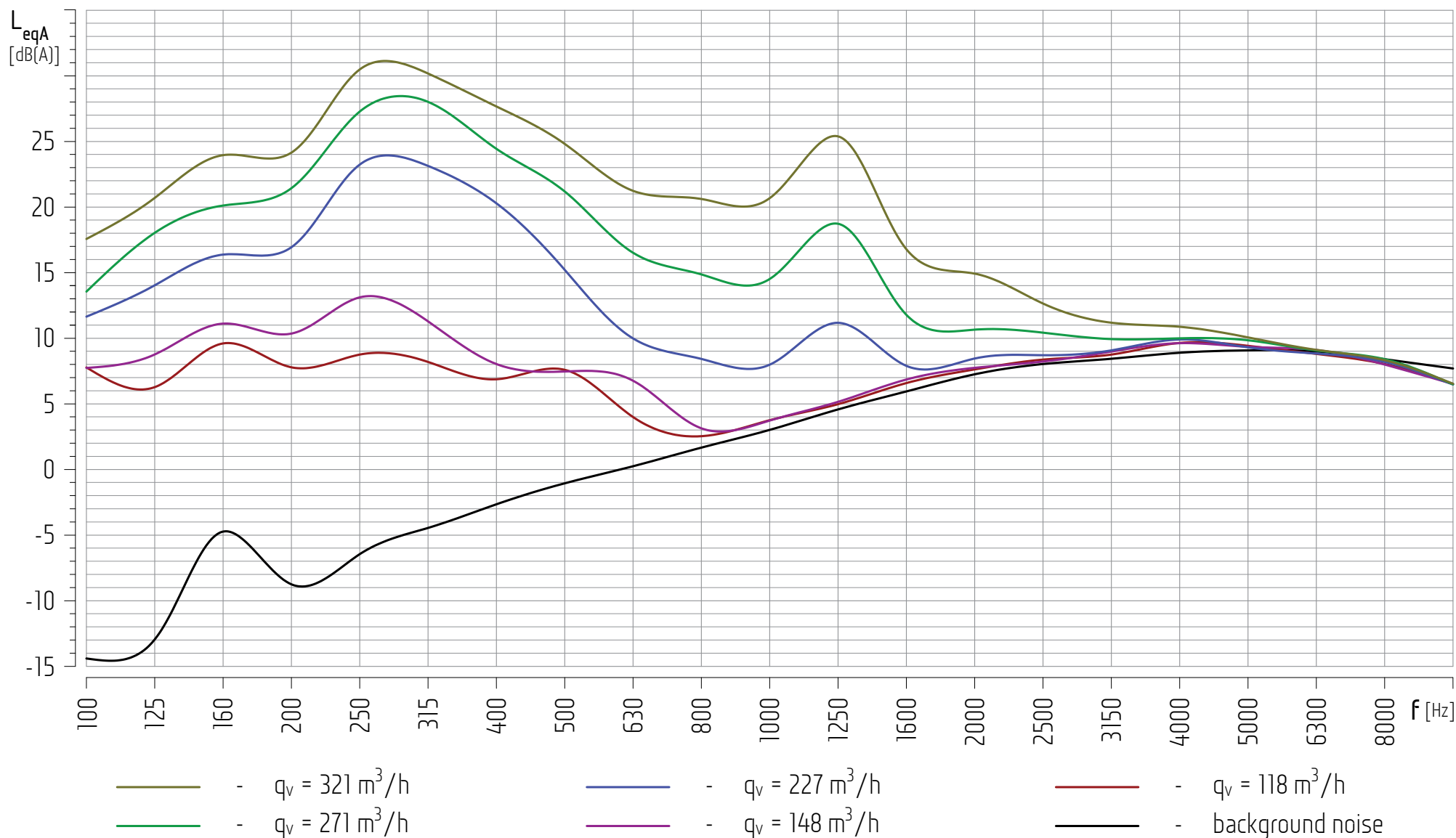


q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 30 VERTICAL FLOW

Figure 9 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 30



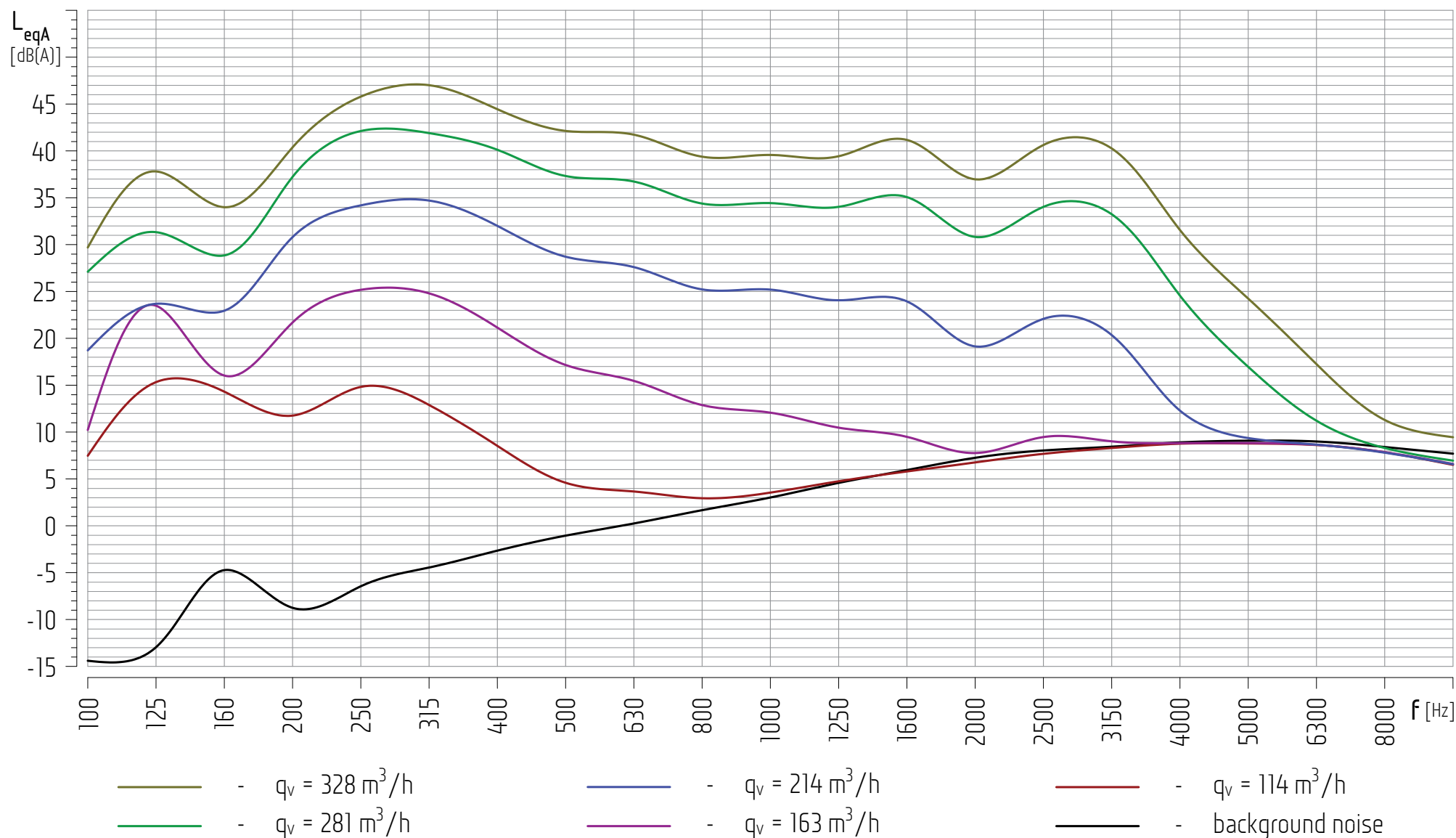
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 30

HORIZONTAL FLOW

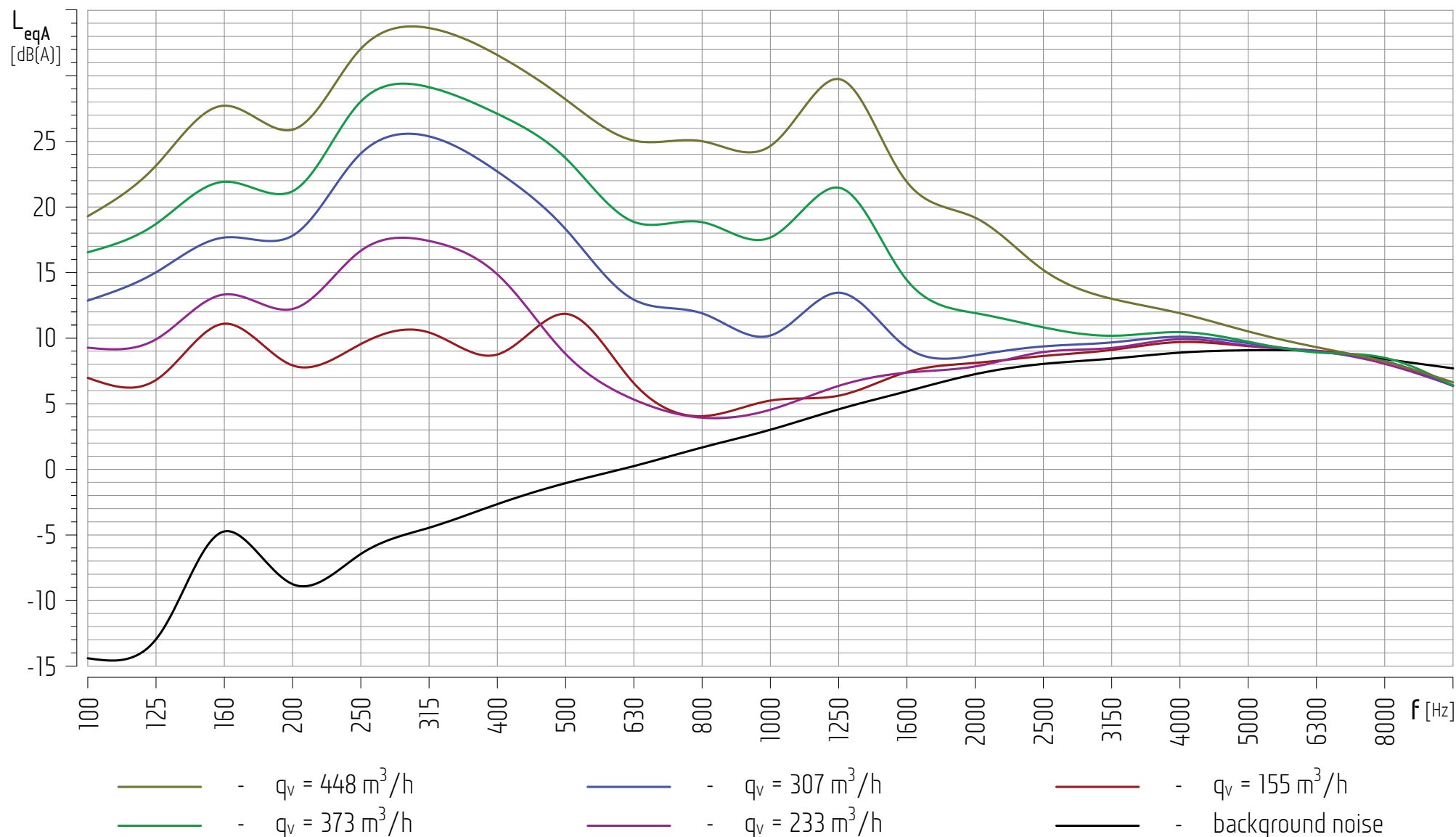
Figure 10 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 30



q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

Figure 11 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 40



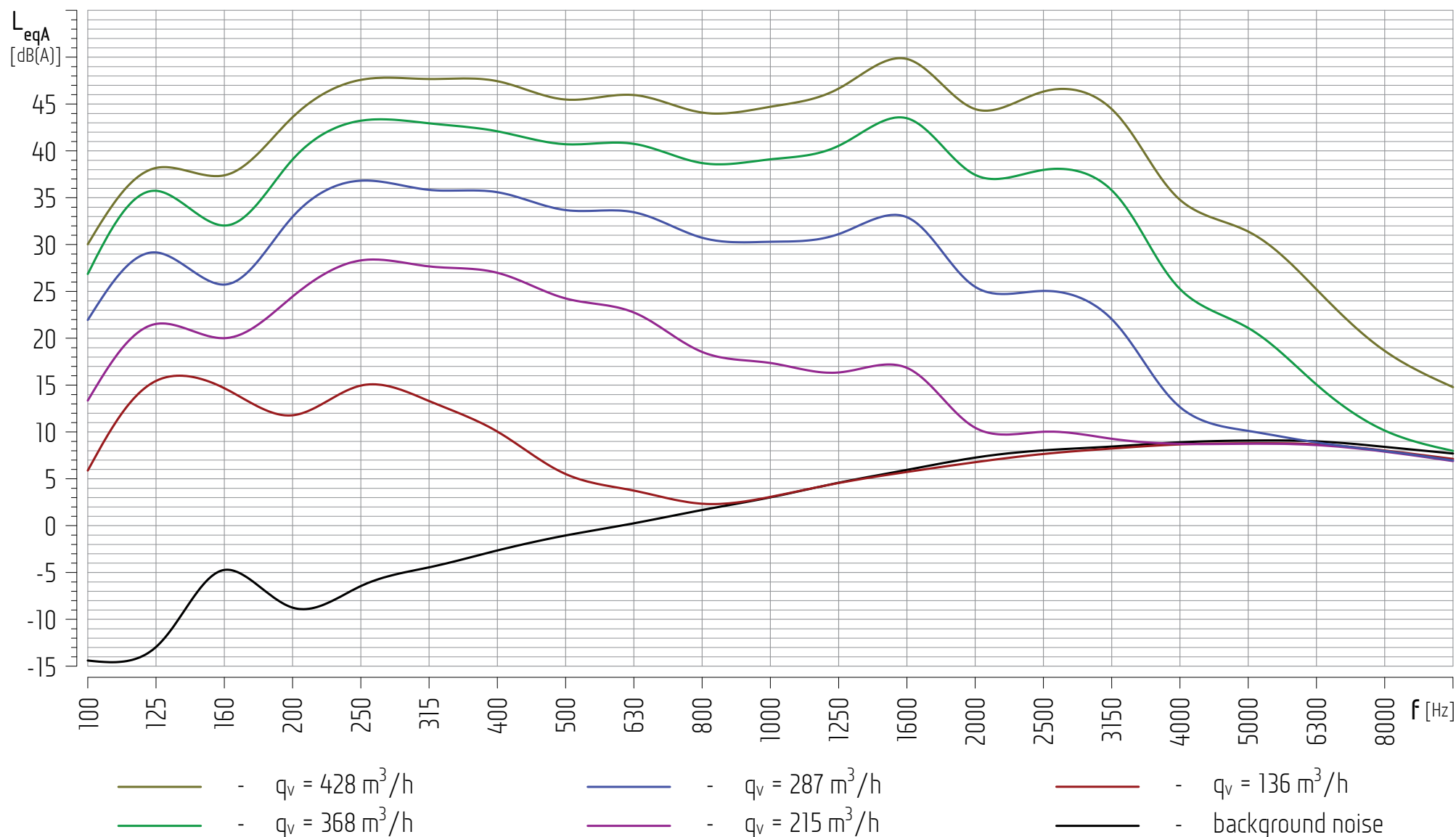
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 40

HORIZONTAL FLOW

Figure 12 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 40



q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

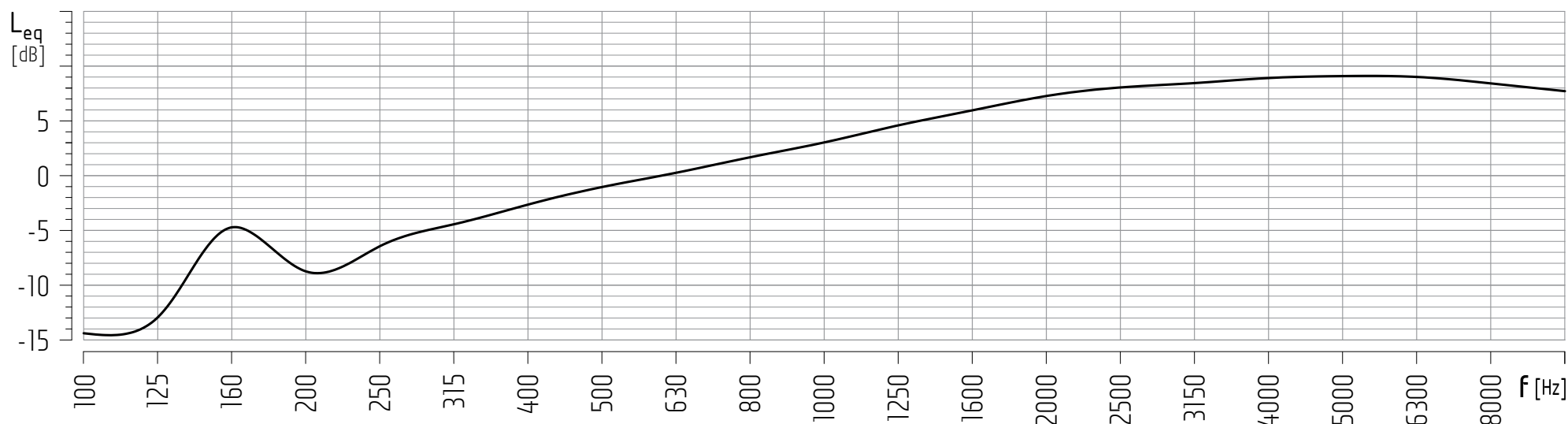
Table 8 - SOUND POWER CALCULATION RESULTS (VERTICAL FLOW)

	BLANCPRO 50						BLANCPRO 60						BLANCPRO 70						BLANCPRO 80					
Test no.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
q_v [m ³ /h]	179	261	360	447	539	649	228	329	433	578	682	773	240	349	412	493	646	765	264	321	418	496	598	713
L_{eqA} [dB(A)]	17.6	23.0	31.4	39.8	46.9	54.7	17.8	25.1	34.1	43.1	50.3	55.8	17.7	24.7	29.5	34.9	44.3	51.1	17.8	20.0	27.0	32.2	38.6	44.6
L_{wA} [dB(A)]	19.6	25.0	33.4	41.8	48.9	56.7	19.8	27.1	36.1	45.1	52.3	57.8	19.7	26.7	31.5	36.9	46.3	53.1	19.8	22.0	29.0	34.2	40.6	46.6

Table 9 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{eq} [dB]	-14.4	-13.0	-4.8	-8.8	-6.5	-4.5	-2.7	-1.1	0.2	1.6	3.0	4.5	5.9	7.2	8.0	8.4	8.9	9.0	9.0	8.4	7.7

Figure 13 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

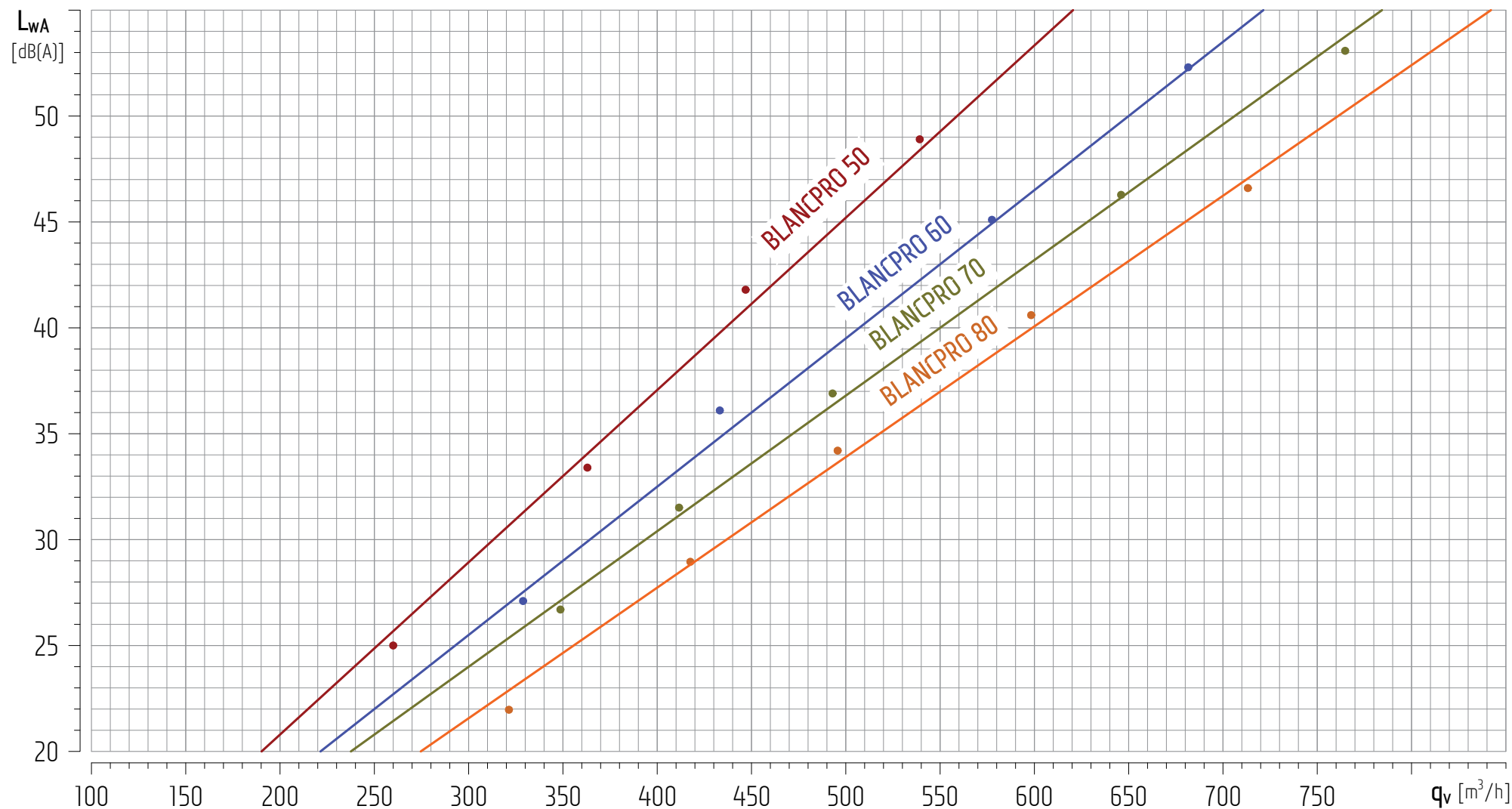


q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];
 L_{eq} - sound pressure level [dB].

L_{wA} - A-weighted sound power level [dB(A)];

f - one-third-octave-band centre frequency [Hz];

Figure 14 - SOUND POWER LEVEL VERSUS AIRFLOW (VERTICAL FLOW)



q_v - airflow rate [m^3/h]; L_{WA} - A-weighted sound power level [dB(A)].

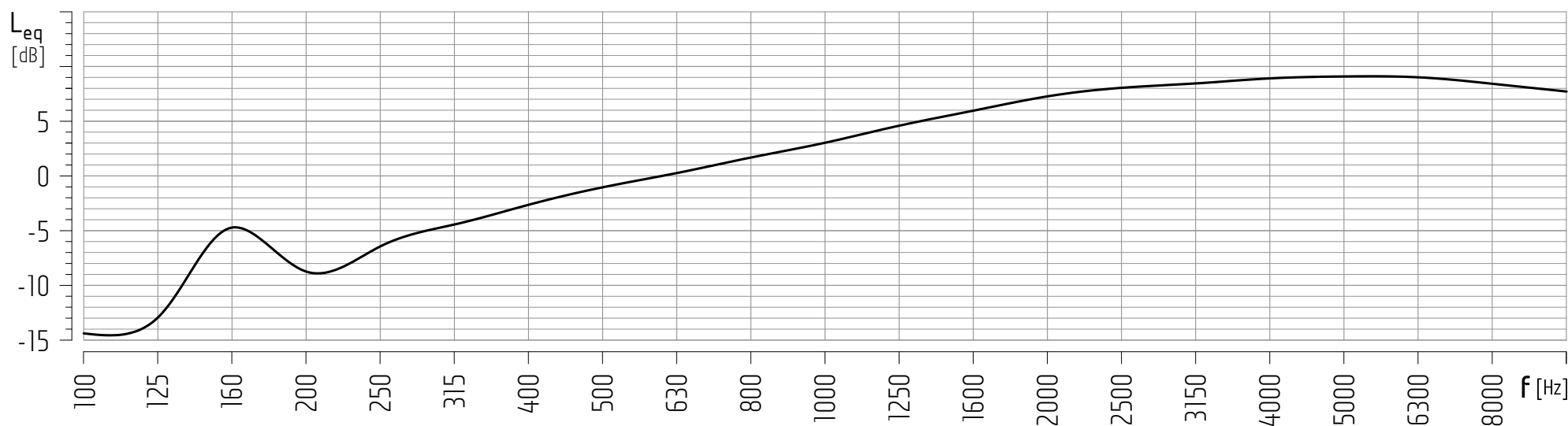
Table 10 - SOUND POWER CALCULATION RESULTS (HORIZONTAL FLOW)

	BLANCPRO 50				BLANCPRO 60				BLANCPRO 70				BLANCPRO 80			
Test no.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
q_v [m ³ /h]	278	365	442	540	337	432	584	650	334	414	488	640	330	410	580	731
L_{eqA} [dB(A)]	31.1	41.2	48.6	57.1	33.7	44.2	55.2	60.7	31.5	38.7	44.0	52.8	29.1	36.1	47.5	55.4
L_{wA} [dB(A)]	33.1	43.2	50.6	59.1	35.7	46.2	57.2	62.7	33.5	40.7	46.0	54.8	31.1	38.1	49.5	57.4

Table 11 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{eq} [dB]	-14.4	-13.0	-4.8	-8.8	-6.5	-4.5	-2.7	-1.1	0.2	1.6	3.0	4.5	5.9	7.2	8.0	8.4	8.9	9.0	9.0	8.4	7.7

Figure 15 - BACKGROUND NOISE SPECTRUM IN THE ACOUSTIC CHAMBER

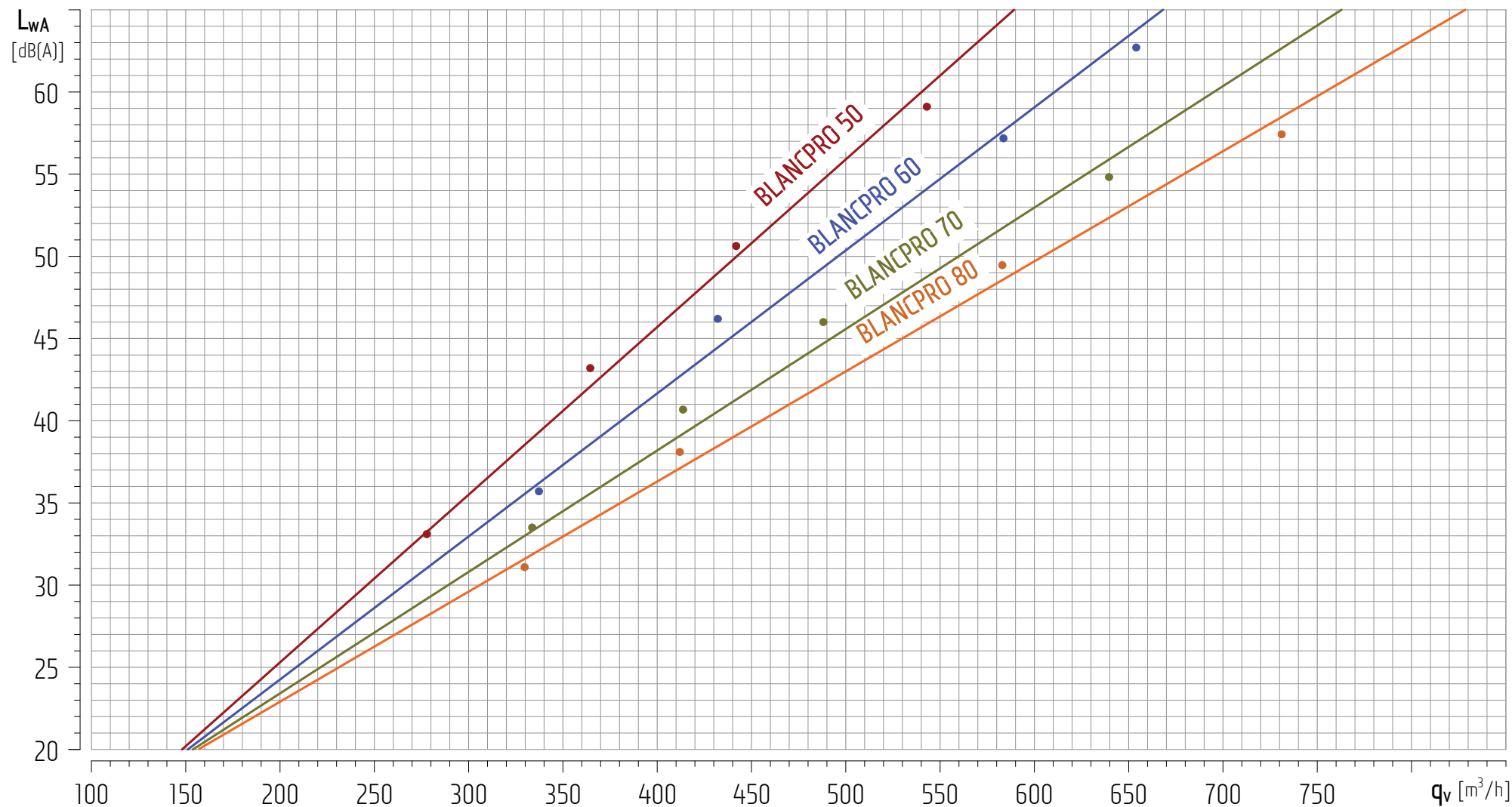


q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];
 L_{eq} - sound pressure level [dB].

L_{wA} - A-weighted sound power level [dB(A)];

f - one-third-octave-band centre frequency [Hz];

Figure 16 - SOUND POWER LEVEL VERSUS AIRFLOW (HORIZONTAL FLOW)



q_v - airflow rate [m^3/h]; L_{WA} - A-weighted sound power level [dB(A)].

Table 12 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 50, 60, 70, 80 (VERTICAL FLOW)

	f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
	q _v [m ³ /h]	L _{eqA} [dB(A)]																				
BLANCPRO 50	179	-6.01	-1.64	-2.68	1.22	0.09	-1.85	-2.84	-1.24	0.06	1.52	2.89	4.59	5.76	7.11	7.85	8.29	8.67	8.91	8.84	8.42	7.51
	261	4.15	9.87	8.10	14.55	15.38	11.46	7.82	3.79	4.23	7.88	3.71	4.84	5.87	7.07	7.66	8.41	8.84	8.84	8.82	8.28	7.57
	360	13.95	19.04	17.36	25.53	25.40	23.35	21.39	19.42	21.21	27.54	16.52	10.78	8.83	10.04	9.08	8.37	8.74	9.05	8.88	8.02	7.60
	447	19.56	25.37	23.92	31.63	32.50	31.00	29.31	29.20	32.36	39.37	30.09	24.92	22.10	23.77	20.47	11.67	9.34	9.04	8.92	8.21	7.38
	539	24.30	30.46	29.68	36.06	37.16	35.49	34.14	34.39	38.89	45.51	37.99	33.93	32.01	34.05	31.00	20.61	14.07	10.71	9.13	8.42	7.59
BLANCPRO 60	228	-4.75	0.77	1.13	4.09	3.75	0.39	0.54	0.03	0.23	1.66	2.78	4.35	5.73	6.88	7.76	8.26	8.73	8.80	8.74	8.17	7.41
	329	8.32	12.77	12.86	18.26	19.54	16.69	12.54	12.20	10.11	13.74	6.26	5.37	6.06	7.23	8.03	8.38	9.09	8.98	8.79	8.22	7.42
	433	15.82	21.43	22.01	27.40	29.04	26.67	24.46	25.06	26.09	31.69	22.14	17.96	14.64	17.14	15.42	9.18	8.91	8.83	8.78	8.25	7.38
	578	23.14	29.27	29.61	34.69	36.59	34.61	32.55	33.73	36.99	42.97	35.39	32.30	29.54	32.38	30.37	20.93	15.25	10.40	9.07	8.28	7.45
	682	26.60	32.93	33.21	38.70	40.32	37.98	35.89	37.06	40.97	47.16	40.38	37.82	36.12	38.96	36.54	27.84	22.45	15.10	10.98	8.66	7.54
BLANCPRO 70	240	-6.55	-2.14	-2.08	-0.11	0.61	-3.11	-2.68	-1.08	0.22	1.61	3.02	4.56	5.85	7.06	7.93	8.40	8.93	9.03	8.90	8.39	7.57
	412	14.51	17.40	16.73	21.89	25.05	23.41	20.07	18.78	18.33	23.50	13.67	8.76	7.17	8.10	8.16	8.43	8.88	8.97	8.94	8.39	7.68
	646	21.32	27.56	28.53	33.85	36.83	35.04	32.53	33.31	36.19	43.94	36.09	32.36	28.80	31.24	27.50	19.16	13.23	9.71	9.11	8.37	7.65
	765	25.65	31.89	32.13	37.72	40.55	38.71	36.12	37.05	40.68	48.47	41.75	38.83	36.80	39.62	36.13	28.86	22.38	14.52	10.82	8.82	7.71
	886	29.84	35.90	35.96	41.35	44.35	42.32	39.46	40.13	43.86	51.64	46.05	43.59	42.73	46.48	43.11	36.32	30.77	22.51	16.66	11.64	8.78
BLANCPRO 80	321	5.95	6.75	5.86	11.31	13.26	10.22	4.89	2.10	1.80	3.91	3.24	4.58	6.07	7.30	8.36	9.28	9.43	9.30	8.98	8.43	7.62
	418	13.33	15.38	14.32	19.73	22.33	20.71	17.72	15.52	14.62	19.82	10.50	6.77	6.36	7.70	7.99	8.43	8.87	8.97	8.92	8.34	7.61
	598	15.79	22.64	23.29	29.30	31.82	30.34	28.06	28.58	30.70	38.28	29.10	23.93	19.32	21.69	16.73	11.46	9.22	9.08	8.95	8.37	7.55
	713	20.84	26.68	27.52	33.52	36.28	34.41	32.65	33.28	36.53	44.63	36.89	32.72	29.03	31.36	27.08	20.77	13.42	9.93	9.13	8.37	7.58
	853	25.62	31.45	31.72	37.70	40.54	38.70	36.14	37.33	41.15	49.23	42.97	39.79	37.51	39.90	35.81	30.07	22.60	15.48	11.43	9.22	7.83

q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

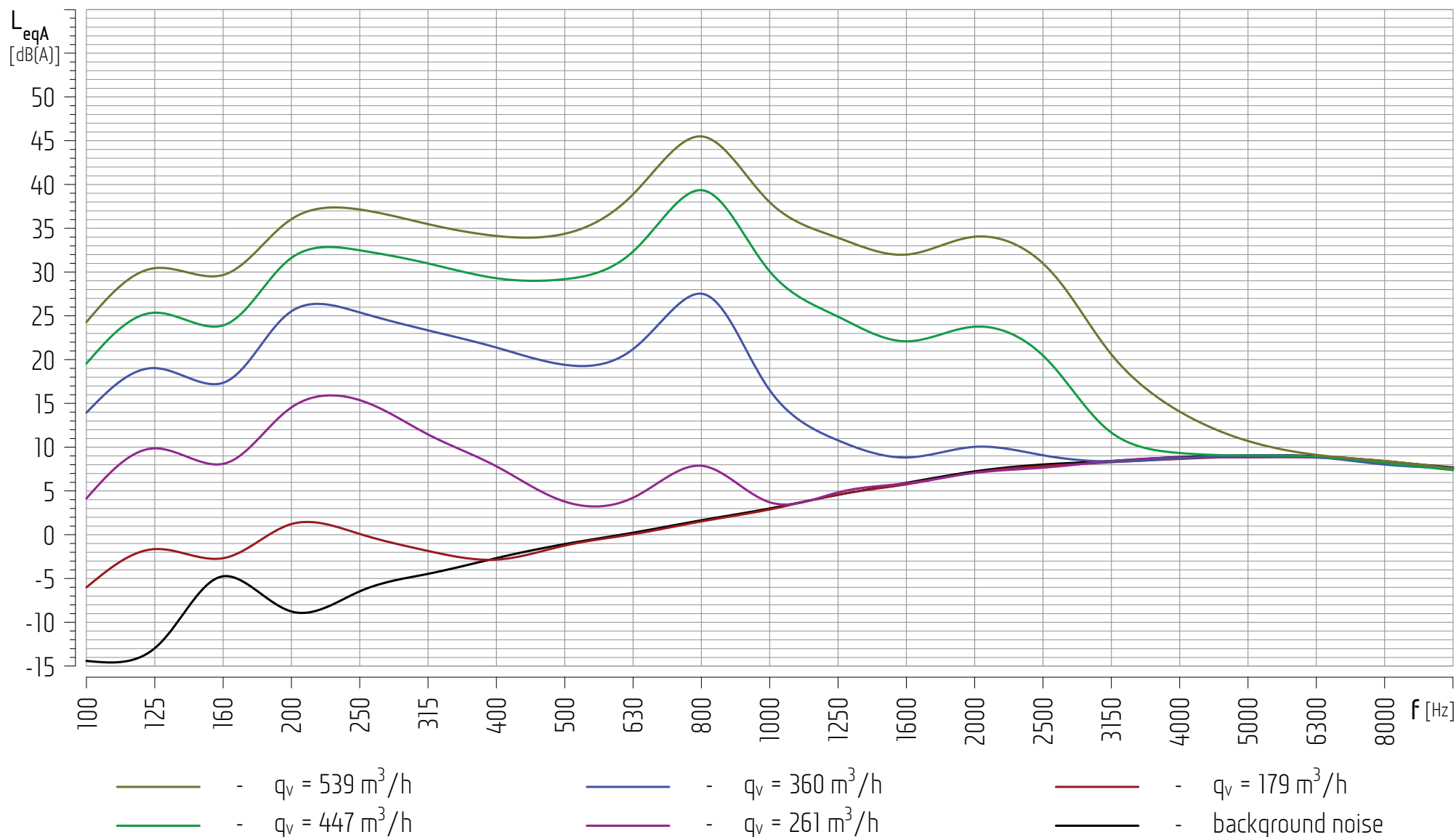
Table 13 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 50, 60, 70, 80 (HORIZONTAL FLOW)

	f [Hz]	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
	q _v [m ³ /h]	L _{eqA} [dB(A)]																				
BLANCPRO 50	178	0.71	7.07	6.23	9.80	9.49	6.49	6.95	3.13	3.24	5.25	3.85	4.99	5.65	7.02	7.65	8.19	8.92	9.01	8.70	8.18	7.44
	278	12.65	21.06	18.90	22.93	23.49	21.28	22.29	20.24	20.71	27.21	22.08	16.33	15.23	12.27	9.44	8.52	8.80	9.07	8.82	8.24	7.62
	365	23.56	28.59	29.19	32.23	33.33	31.87	29.94	29.92	37.18	39.80	35.89	31.62	31.53	28.93	22.26	14.90	10.50	9.26	8.98	8.29	7.37
	442	27.20	36.38	34.29	39.68	39.31	37.63	35.70	36.39	38.20	47.20	42.84	39.46	39.85	38.10	32.14	25.15	17.82	13.45	11.45	8.99	7.73
	540	30.18	40.70	39.61	43.76	45.54	42.61	40.96	40.93	42.45	49.64	49.78	44.91	46.29	44.84	39.48	32.97	25.82	20.98	18.18	12.88	9.19
BLANCPRO 60	238	5.06	11.70	11.23	13.52	14.43	10.78	7.12	9.34	6.97	13.31	7.81	5.87	6.19	7.02	7.76	8.29	8.72	8.82	8.72	8.21	7.44
	337	16.67	22.97	22.85	25.26	26.77	24.46	22.13	28.25	23.75	34.89	29.20	24.37	20.49	18.35	13.03	9.71	8.98	8.91	8.79	8.18	7.40
	432	24.04	31.88	30.95	34.13	35.86	33.79	31.64	32.55	36.38	43.63	40.27	37.48	36.44	32.99	26.69	21.28	16.24	11.59	10.83	8.41	7.55
	584	31.46	40.20	40.82	43.22	45.24	42.91	40.84	41.67	43.27	51.31	49.71	46.03	47.12	45.51	41.36	34.84	30.23	25.38	24.32	16.08	10.93
	650	35.96	42.97	43.49	47.33	49.02	46.91	44.75	45.45	47.48	55.00	52.91	49.89	51.17	49.70	46.01	40.81	36.25	31.60	30.74	23.08	17.04
BLANCPRO 70	249	2.79	9.07	9.56	13.11	14.50	10.97	6.03	6.25	4.23	9.91	5.74	5.18	6.08	7.07	7.98	8.45	8.87	9.01	8.90	8.37	7.60
	414	20.03	25.26	25.78	29.66	31.79	30.18	27.58	28.21	34.70	39.70	34.59	31.68	27.86	25.17	18.62	13.07	9.96	9.31	9.03	8.33	7.59
	488	23.62	31.37	31.75	35.30	37.56	35.78	33.48	34.16	34.51	46.32	42.10	39.10	37.08	34.82	28.46	23.20	17.29	13.85	11.46	8.79	7.70
	640	29.68	36.90	38.41	41.69	44.06	42.34	39.76	41.09	42.04	51.62	49.50	47.51	45.80	44.36	40.42	34.98	30.56	26.50	22.88	14.90	10.23
	905	39.77	45.48	45.70	50.56	53.41	51.08	49.06	49.40	50.46	59.38	58.46	56.07	55.66	54.55	52.26	48.68	44.37	40.03	37.73	31.41	25.49
BLANCPRO 80	330	11.50	17.27	17.33	21.03	23.22	21.63	18.48	22.00	16.10	23.23	19.47	12.43	9.11	8.14	8.20	8.46	8.95	8.97	9.00	8.36	7.60
	410	17.86	24.48	23.91	27.91	30.45	28.91	26.76	26.67	34.54	35.51	32.33	26.22	21.71	17.55	13.34	9.75	9.10	9.01	8.94	8.34	7.58
	580	25.86	33.95	34.14	37.37	40.13	38.48	36.48	38.40	39.86	48.34	47.91	43.15	40.66	37.50	34.76	29.51	23.54	18.44	13.92	9.82	7.94
	731	31.16	38.57	38.86	42.91	45.53	43.69	41.53	42.70	45.93	53.37	53.08	51.40	48.76	45.80	44.04	38.77	34.37	28.74	24.39	17.91	12.01
	851	34.41	42.16	42.09	46.18	48.87	46.98	44.89	45.94	48.18	56.79	56.42	56.46	52.47	50.26	50.43	45.05	40.74	35.13	31.49	25.56	18.90

q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

Figure 17 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 50



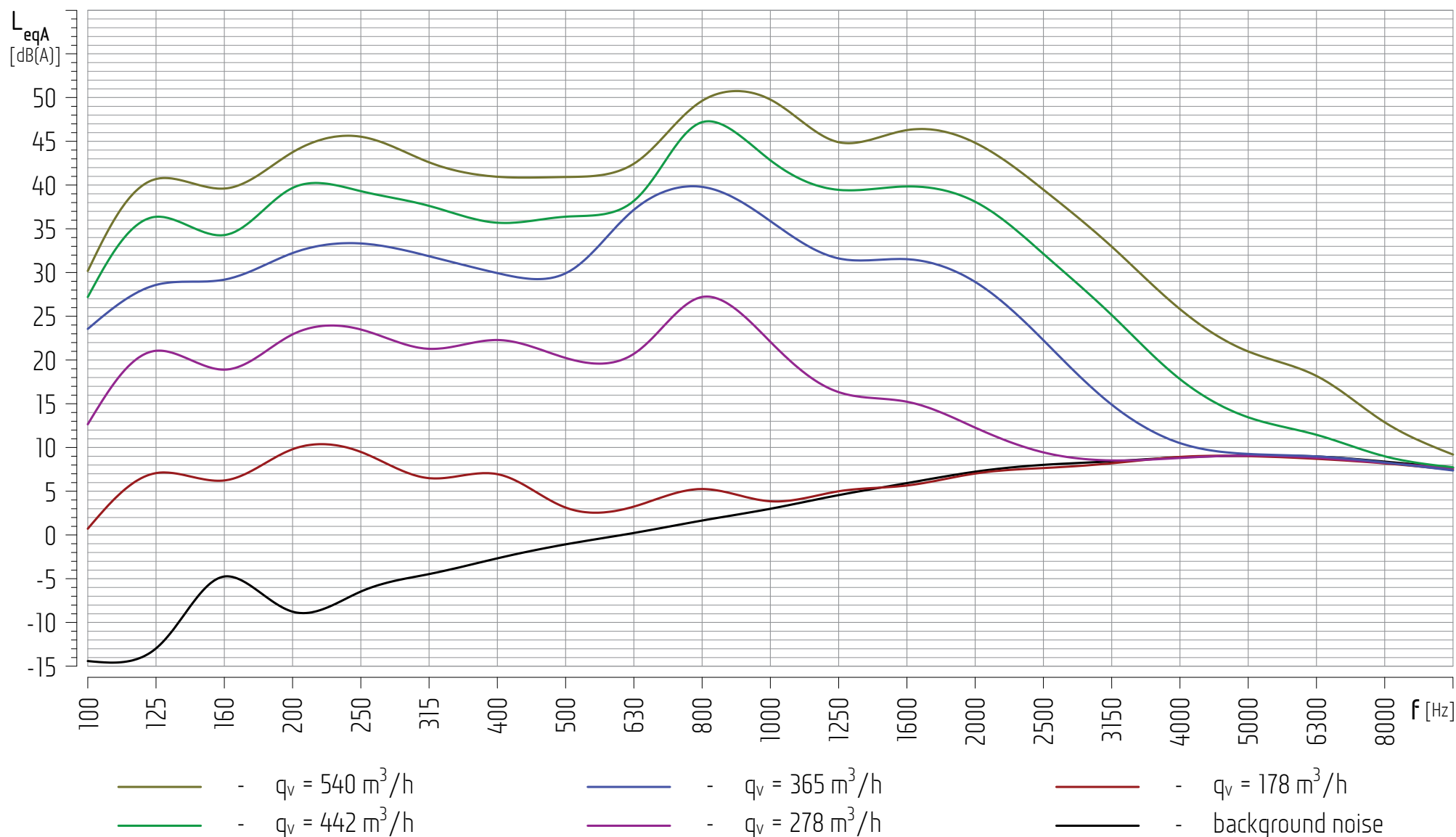
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 50

HORIZONTAL FLOW

Figure 18 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 50

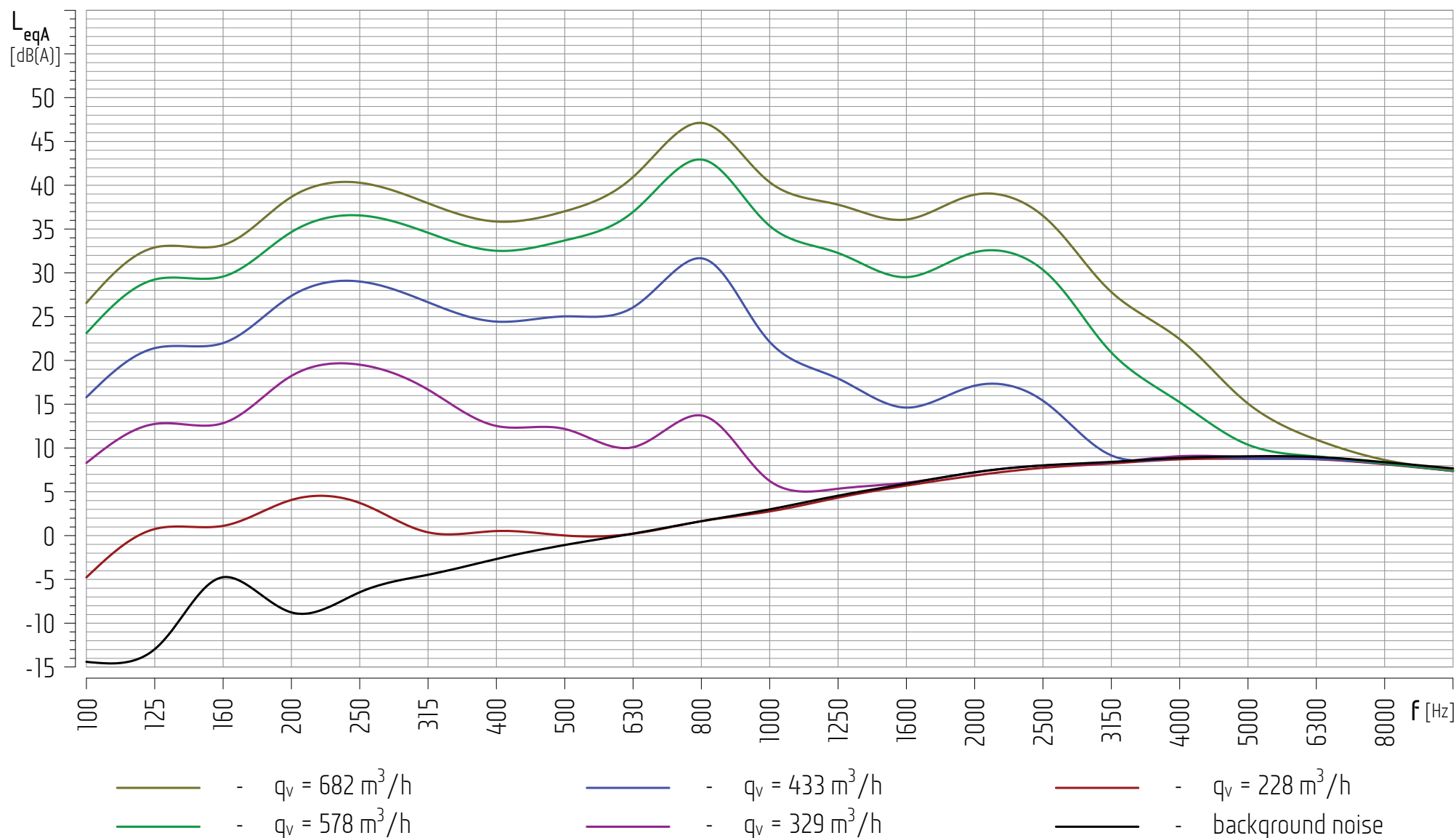


q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 60 VERTICAL FLOW

Figure 19 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 60



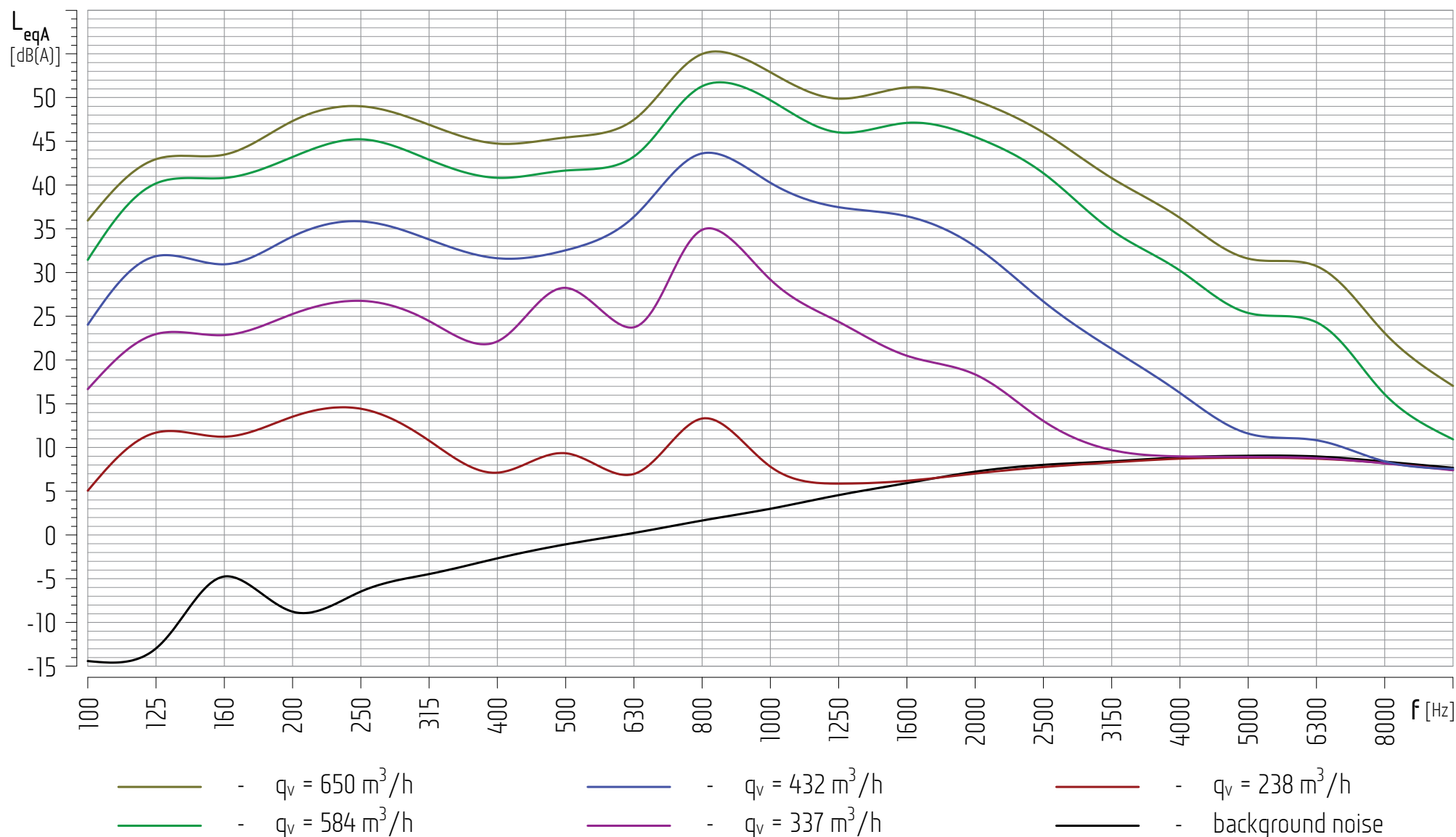
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 60

HORIZONTAL FLOW

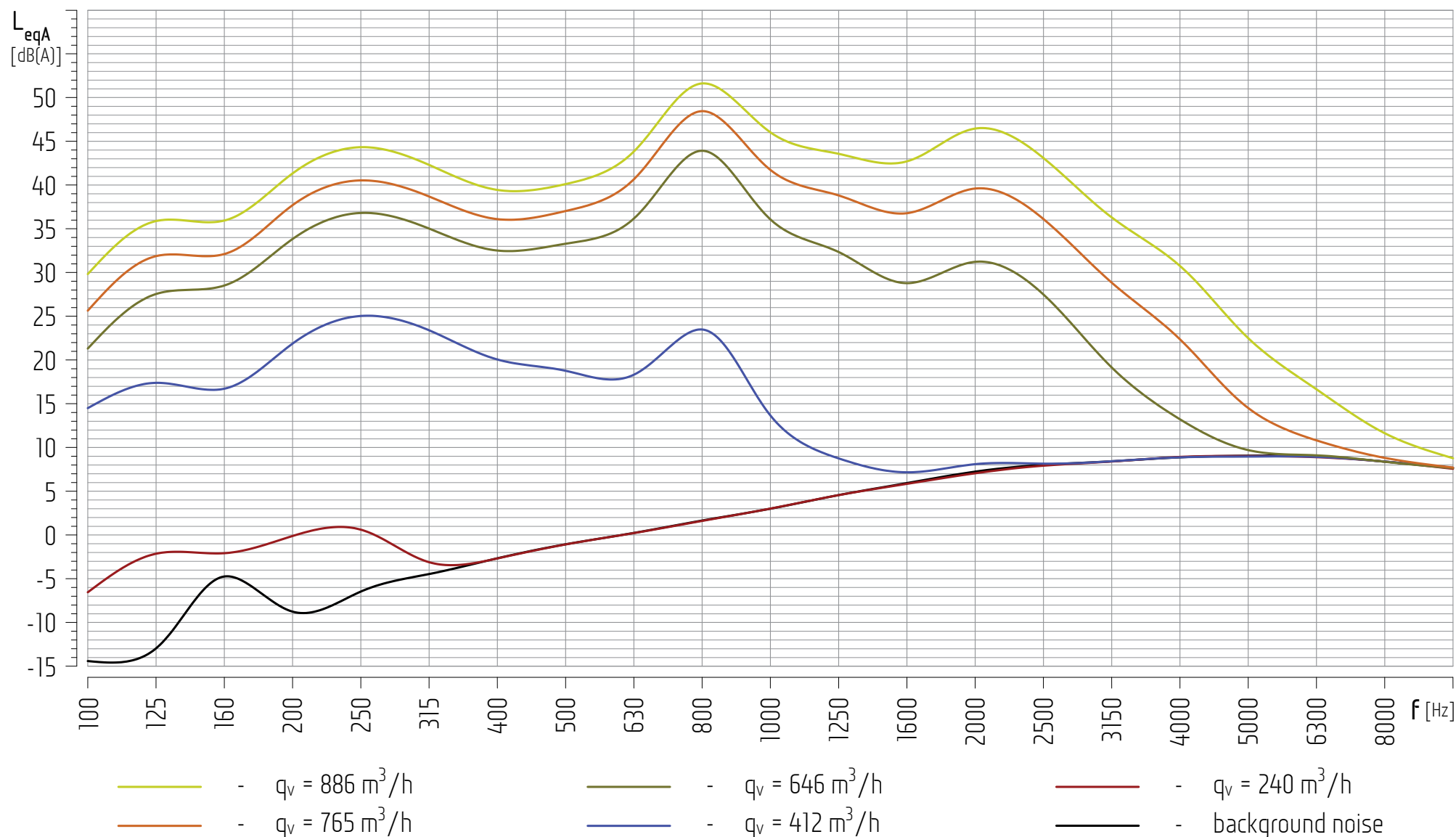
Figure 20 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 60



q_v - airflow rate [m³/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

Figure 21 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 70



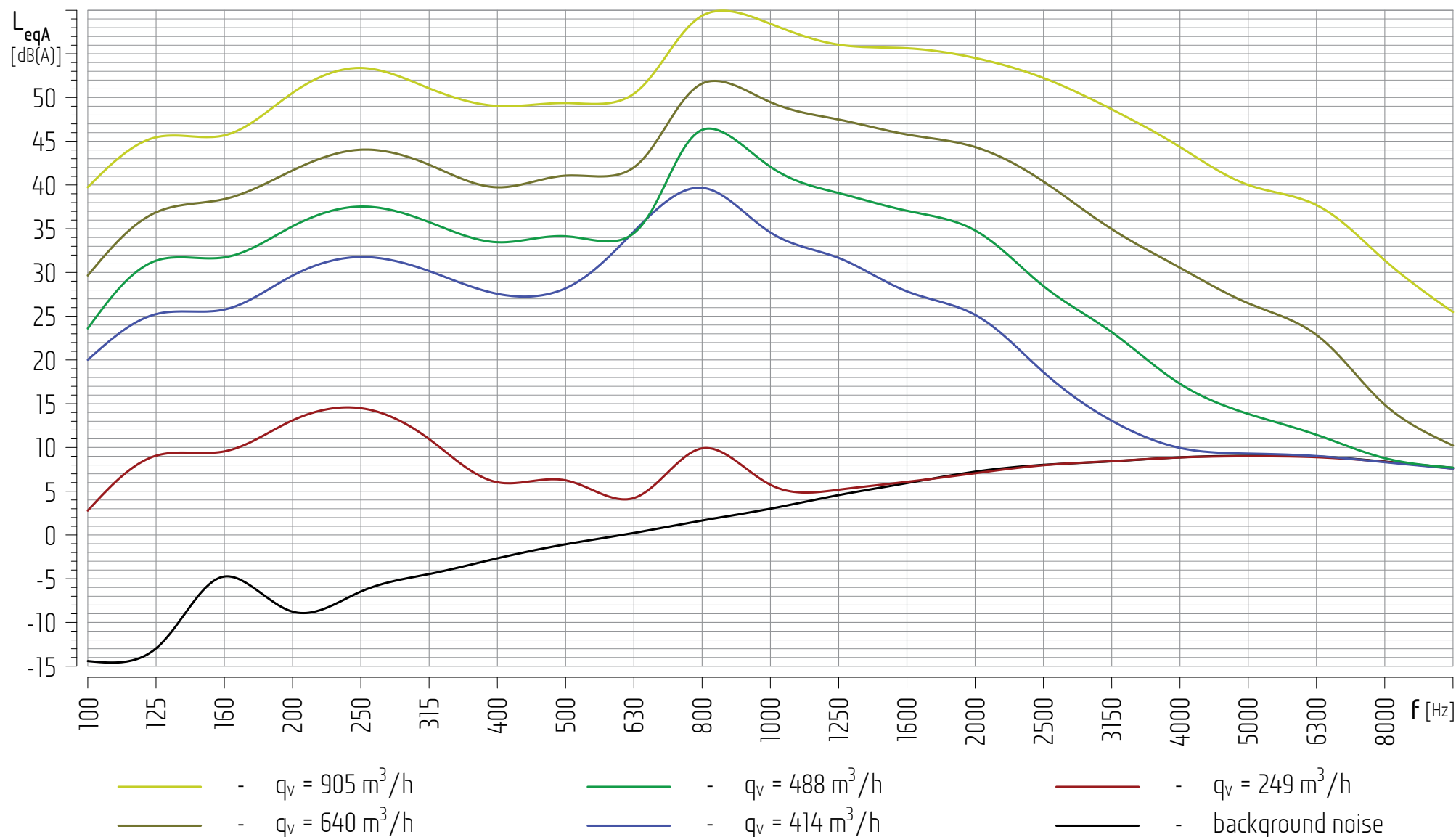
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 70

HORIZONTAL FLOW

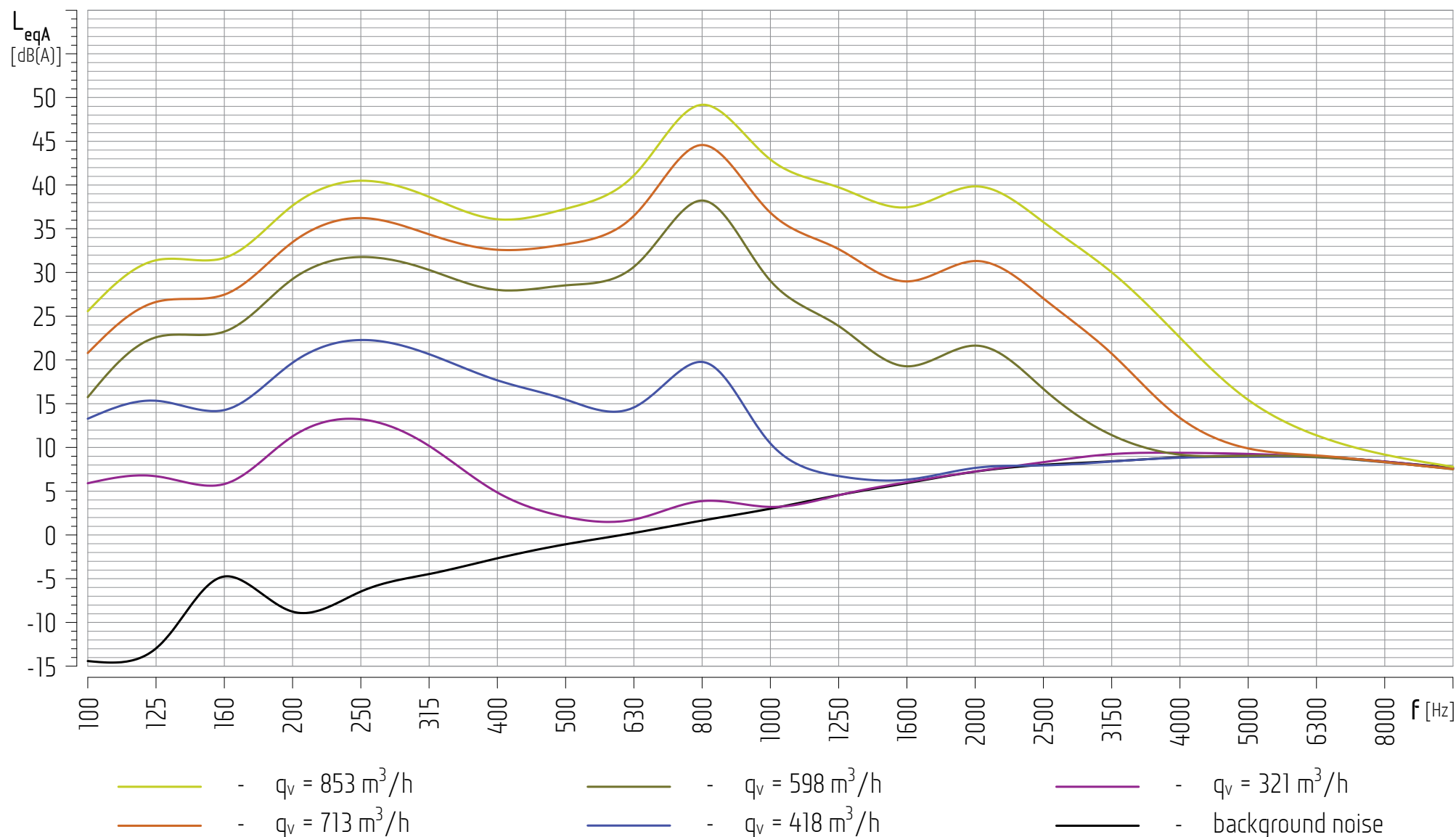
Figure 22 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 70



q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

Figure 23 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 80



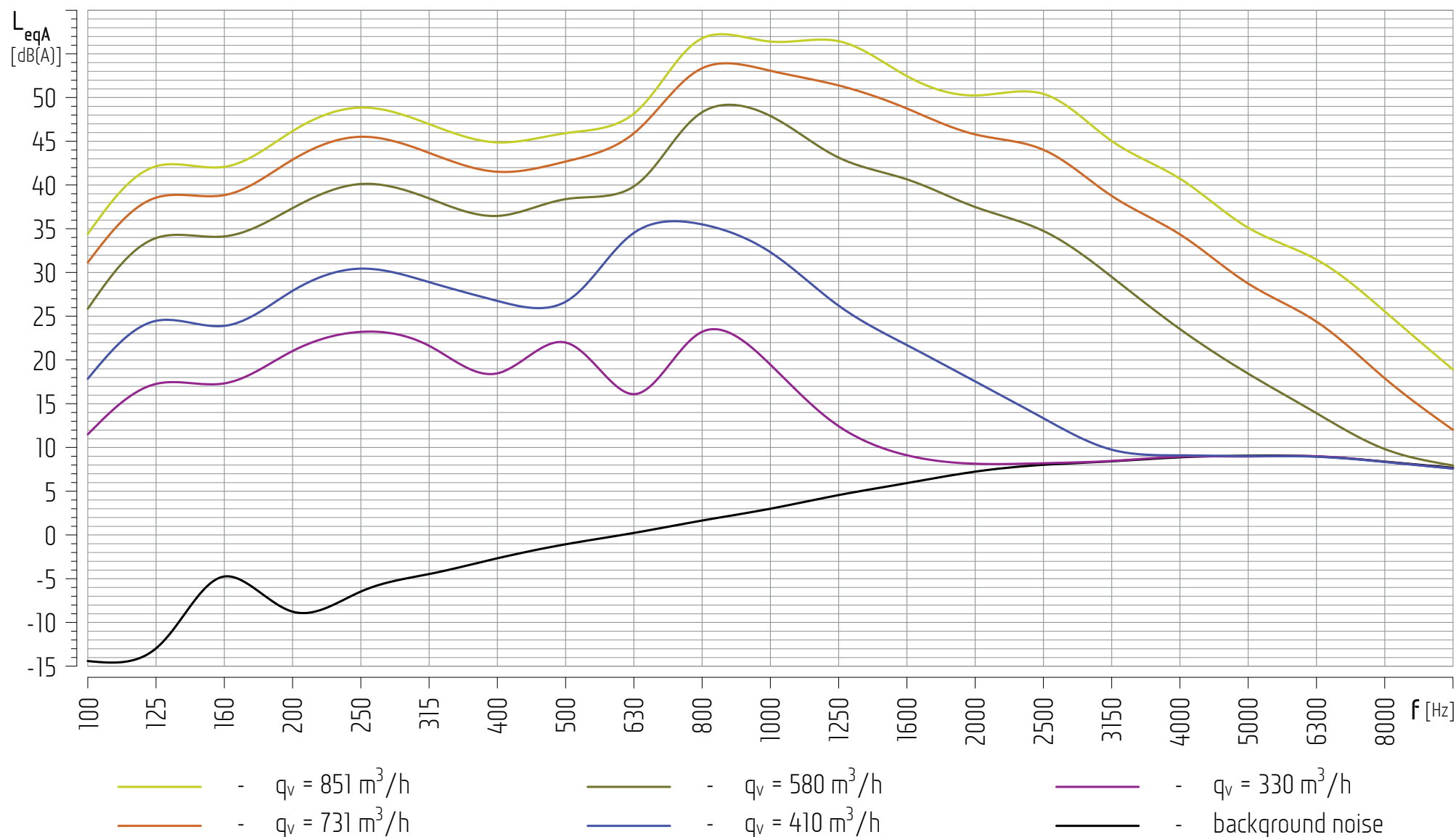
q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].

ACOUSTIC TEST RESULTS FOR BLANCPRO 80

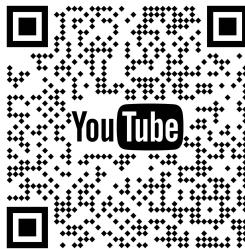
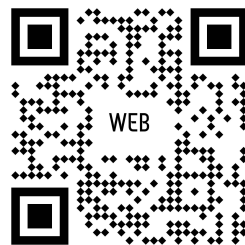
HORIZONTAL FLOW

Figure 24 - NOISE SPECTRA FOR DIFFUSERS BLANCPRO 80



q_v - airflow rate [m^3/h]; L_{eqA} - A-weighted sound pressure level [dB(A)];

f - one-third-octave-band centre frequency [Hz].



invisiline

INVISIBLE
LINEAR
DIFFUSERS