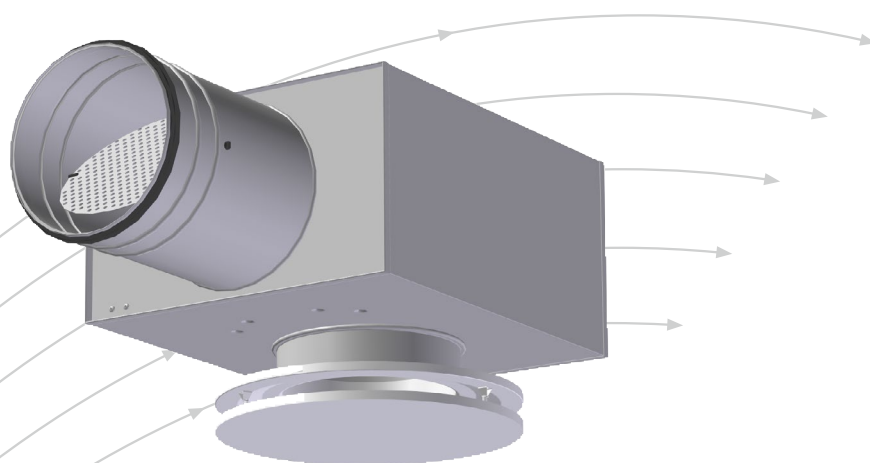


TLG-G

Circular diffuser for supply and exhaust



- Circular diffuser for supply and exhaust
- Adjustable slot height
- Low-profile design
- Data provided with Luna plenum box installed
- Box lined with sound absorber in polyester
- Sizing and simulation in AURASIM

TROX[®] TECHNİK

 **Auranor**

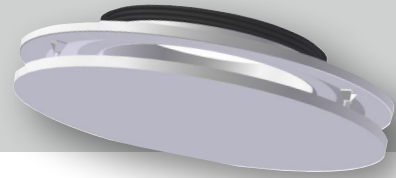
TROX Auranor Norge AS

Auranorvegen 6
NO-2770 Jaren

Telephone +47 61 31 35 00

E-mail: office-no@troxgroup.com
www.trox.no/en

TLG-G



APPLICATION

TLG-G is a circular diffuser for mounting in a fixed ceiling. The diffuser can be used as both supply and exhaust. TLG-G is designed to utilize the Coanda-effect towards the ceiling profiles, and is suitable for both constant and variable air flow rates.

DESIGN

TLG-G has a removable front panel and an adjustable slot height.

MATERIALS AND SURFACE COATING

The diffuser is manufactured in a steel design and the connection collar is equipped with an EPDM rubber gasket. TLG-G comes in a RAL 9003 - gloss 30 finish. Other colours are available upon request.

QUICK SELECTION

Quick selection TLG-G in duct (supply)

TLG-G Dim.	[m ³ /h]		
	25 dB(A)	30 dB(A)	35 dB(A)
100	94	114	137
125	156	185	221
160	236	277	324
200	315	364	421
250	482	560	651
315	485	572	675

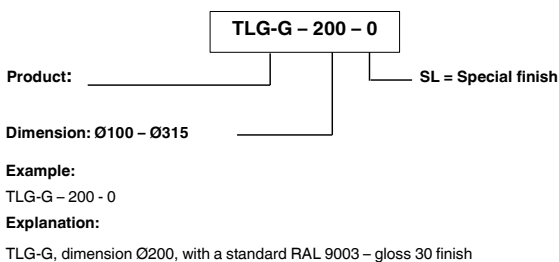
Table 1: The table shows air flow rates at given sound power levels. Maximum slot height and valve fitted directly in a straight duct.

Quick selection TLG-G in duct (exhaust)

TLG-G Dim.	[m ³ /h]		
	25 dB(A)	30 dB(A)	35 dB(A)
100	109	130	154
125	201	238	282
160	303	357	420
200	410	482	567
250	751	890	1054
315	893	1066	1272

Table 2: The table shows air flow rates at given sound power levels. Maximum slot height.

ORDER CODE, TLG-G



DIMENSIONS AND WEIGHT, TLG-G

Dim.	A	B	J	T	Groove dim	Diffuser weight [kg]
100	209	99	44	34-45	110	0,7
125	238	124	44	34-45	135	0,9
160	279	159	44	35-50	170	1,1
200	334	199	44	35-50	210	1,4
250	419	249	44	35-60	260	2,1
315	525	314	44	35-60	325	3,0

Table 3

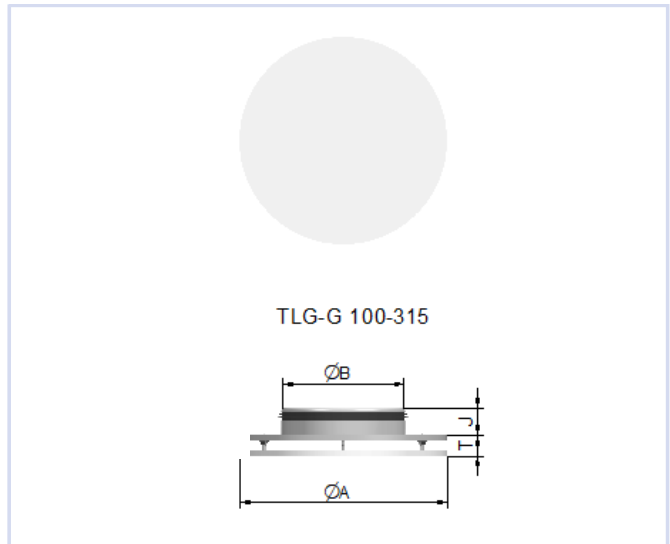
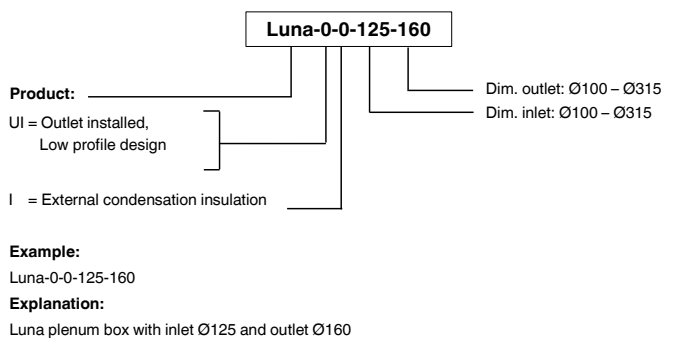
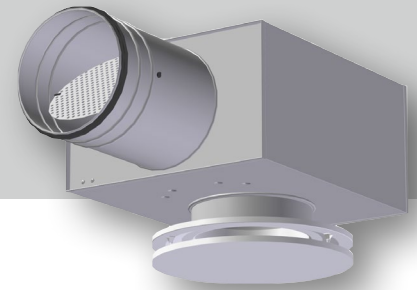


Figure 1: Measurement illustration TLG-G

ORDER CODE, LUNA



TLG-G with Luna plenum box



APPLICATION

Luna plenum box is recommended for improved sound attenuation and additionally works as an adjustment and measurement unit. Luna is a rectangular box equipped with a removable damper that provides access to the connecting duct. The damper can be secured in any position required.

DESIGN

Luna plenum box features a damper and measuring outlet for commissioning. It is insulated with sound absorber in polyester and is available with one or two dimensional changes between inlet and outlet. In addition, the box can be delivered with external condensation insulation [I] A low-profile design [UI] is also available, and for this design a **reduction in capacity of 20% is expected**. The distance between diffuser and box can be increased by up to 35 cm without requiring an extension of the wire and measuring tube.

QUICK SELECTION, TLG WITH LUNA

TLG-G Dim.	Luna Dim.	m³/h		
		25 dB(A)	30 dB(A)	35 dB(A)
100	100-100	75	86	100
125	100-125	79	112	155
160	100-160	65	119	180
125	125-125	101	130	162
160	125-160	90	137	205
200	125-200	72	144	270
160	160-160	154	198	241
200	160-200	162	234	324
250	160-250	155	241	342
200	200-200	212	266	324
250	200-250	234	310	403
315	200-315	216	316	468
250	250-250	331	398	470
315	250-315	338	432	563
315	315-315	414	522	620

Table 4: The table provides air flow rates at given 50 Pa total pressure loss and maximum slot height. Supply.

TLG-G Dim.	Luna Dim.	m³/h		
		25 dB(A)	30 dB(A)	35 dB(A)
125	100-125	83	122	162
160	100-160	61	97	162
160	125-160	94	148	241
200	125-200	83	126	216
200	160-200	173	281	349
250	160-250	180	252	353
250	200-250	274	385	522
315	200-315	238	349	482
315	250-315	396	529	720
315	315-315	590	770	990

Table 5: The table provides air flow rates at given 50 Pa total pressure loss and maximum slot height. Exhaust.

MATERIALS AND SURFACE COATING

Luna is supplied in a galvanised finish, and with all four internal walls lined with sound absorbers in polyester. The connection collar is fitted with an EPDM rubber gasket.

DIMENSIONS AND WEIGHT, Luna

Dim.	D	DA	B	H	H1	H2	L	L1	L2	Weight (kg)
										Luna
100-100	99	102	220	122	180	58	325	292	127	2,3
100-125	99	127	220	122	180	58	325	292	127	2,3
100-160	99	162	220	122	180	58	360	309	145	2,4
125-125	124	127	250	147	205	58	360	334	145	2,4
125-160	124	162	250	147	205	58	360	334	145	2,9
125-200	124	202	250	147	205	58	400	354	165	3,1
160-160	159	162	340	182	240	58	403	390	167	4,1
160-200	159	202	340	182	240	58	403	390	167	4,2
160-250	159	252	340	182	240	58	453	415	192	4,6
200-200	199	202	380	222	280	58	453	457	190	5,7
200-250	199	252	380	222	280	58	453	457	190	5,7
200-315	199	317	380	222	280	58	515	487	222	6,1
250-250	249	252	390	272	330	58	515	537	222	7,4
250-315	249	317	390	272	330	58	515	537	222	7,4
315-315	314	317	500	337	395	58	600	654	255	11

Table 6: Dimensions and weight, Luna

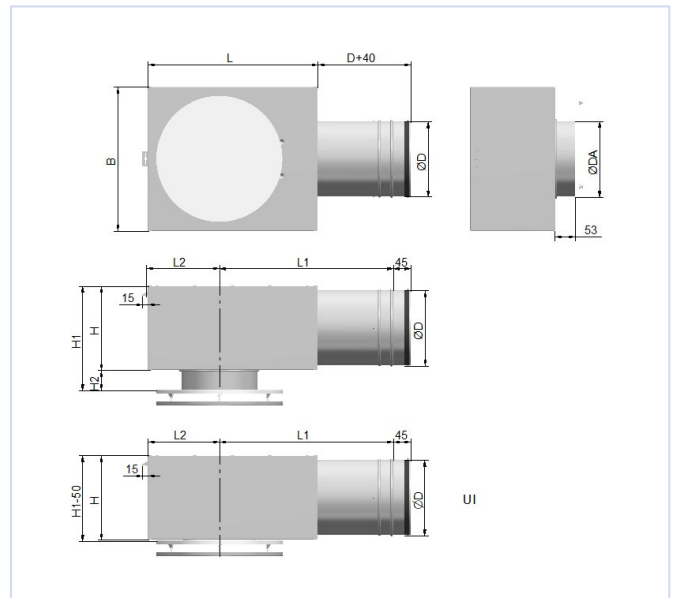


Figure 2: Measurement illustration TLG-G with Luna, UI= a low profile design.

TLG-G

ACOUSTIC DATA

The diagrams provide a summary of the A-weighted sound power level from diffuser, L_{WA} . Correction factors in table 8, page 17 are used to calculate emitted sound power level at the respective frequencies, $L_w = L_{WA} + KO$. A room with absorption equivalent to 10 m² Sabine will have a sound pressure level which is 4 dB below the sound power level emitted.

Example:

TLG-G with Luna 125-125 and min. slot. Desired air flow rate: 35 l/s.

From diagram 10 we find that $L_{WA} = 31$ dB(A) with damper open and 28 Pa total pressure loss. We would like to find the following data:

- Emitted sound power level at 250 Hz
- A-weighted sound pressure level in an office
- A-weighted sound pressure level in an office at 50 Pa total pressure loss (i.e. 22 Pa choking with the unit's damper)

a) The correction factor is 0 dB. Emitted sound power level 250 Hz becomes: $L_w = L_{WA} + KO = 31 + (0) = 31$ dB.

b) If we assume a room absorption equivalent to 10 m² Sabine, A-weighted sound pressure level will be: $31 - 4 = 27$ dB(A)

c) Tracing the 35 l/s in the diagram up to 50 Pa gives us a reading of 31 dB(A) = no increase, and A-weighted sound pressure level becomes 27 dB(A)

CALCULATION DIAGRAM, SUPPLY

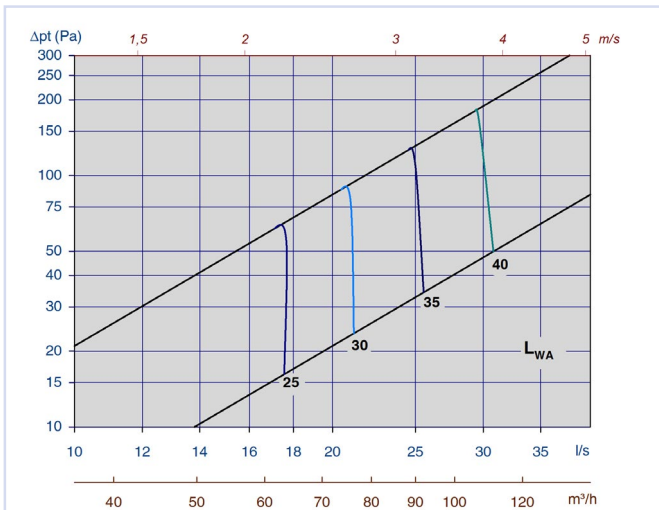


Diagram 1: TLG-G w/Luna 100-100 min. slot, supply

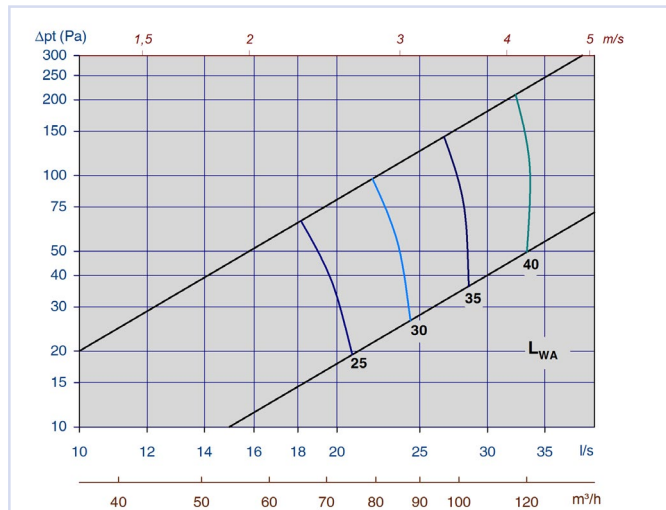


Diagram 2: TLG-G w/Luna 100-100 med. slot, supply

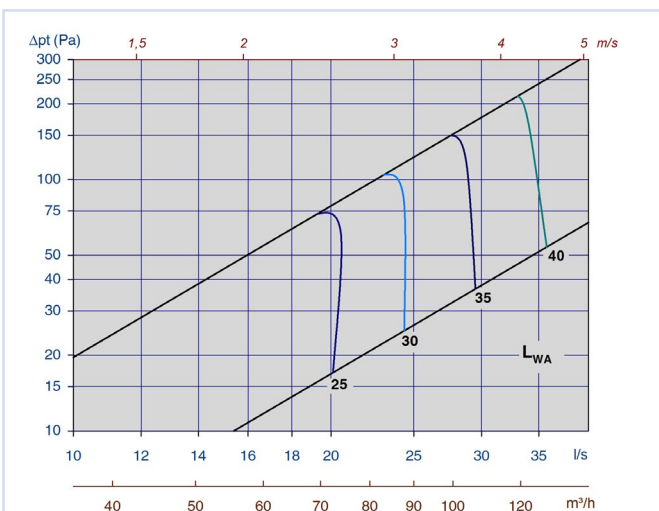


Diagram 3: TLG-G w/Luna 100-100 max. slot, supply

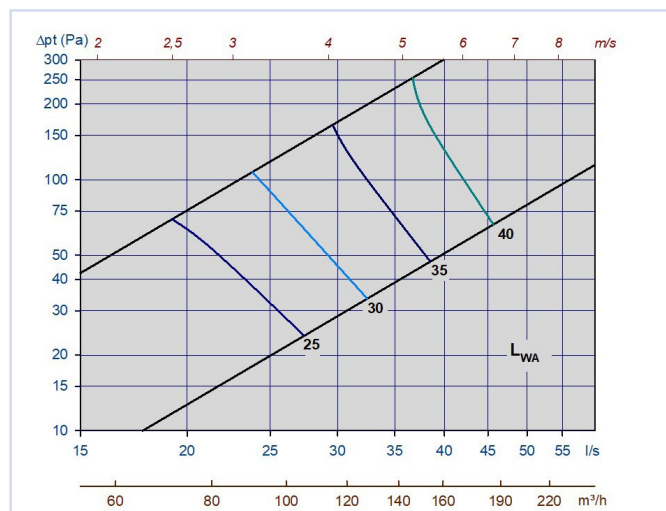


Diagram 4: TLG-G w/Luna 100-125 min. slot, supply

TLG-G

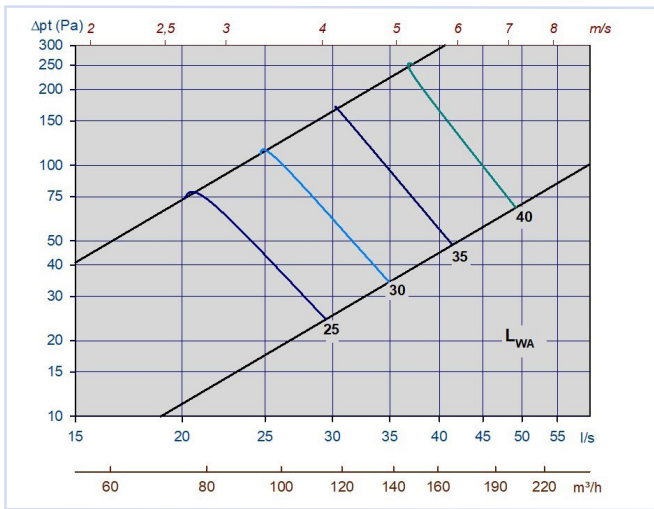


Diagram 5: TLG-G w/Luna 100-125 med. slot, supply

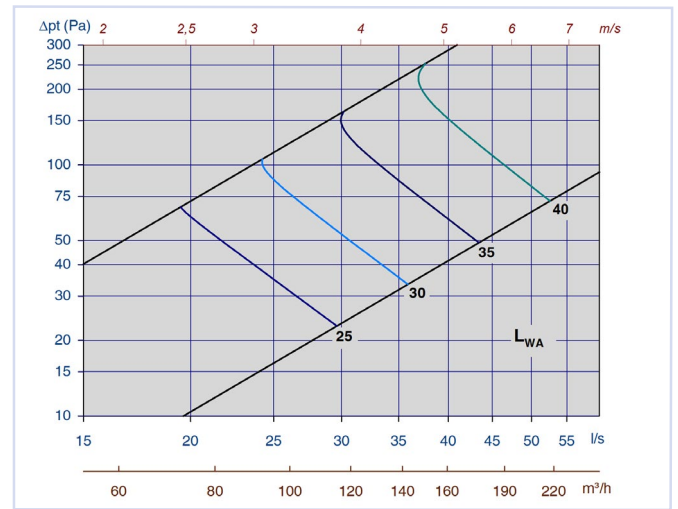


Diagram 6: TLG-G w/Luna 100-125 max. slot, supply

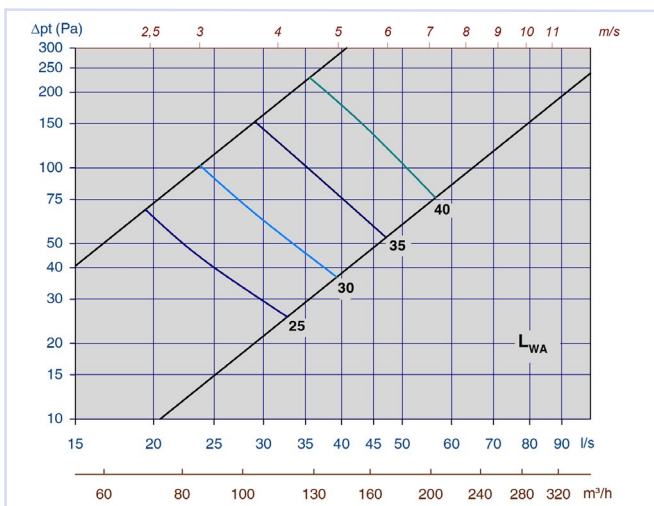


Diagram 7: TLG-G w/Luna 100-160 min. slot, supply

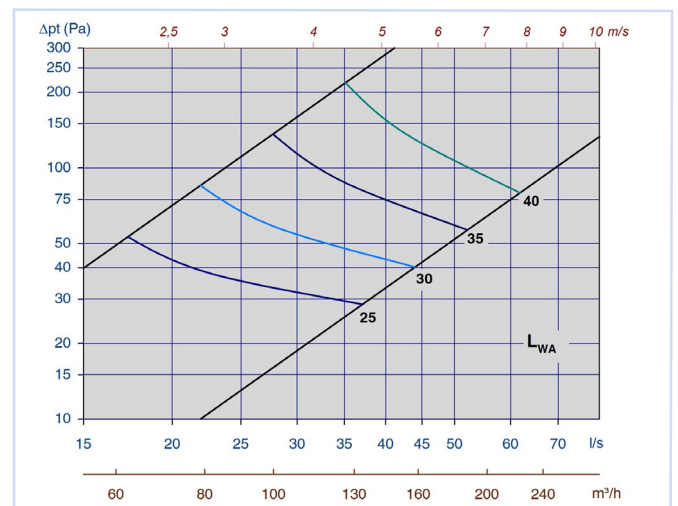


Diagram 8: TLG-G w/Luna 100-160 med. slot, supply

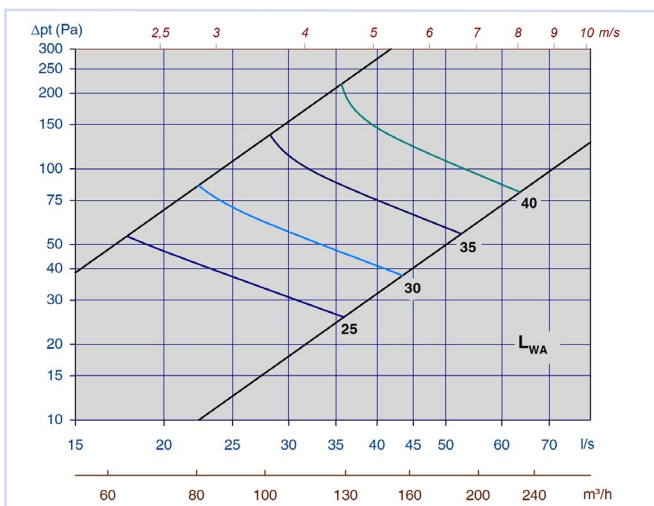


Diagram 9: TLG-G w/Luna 100-160 max. slot, supply

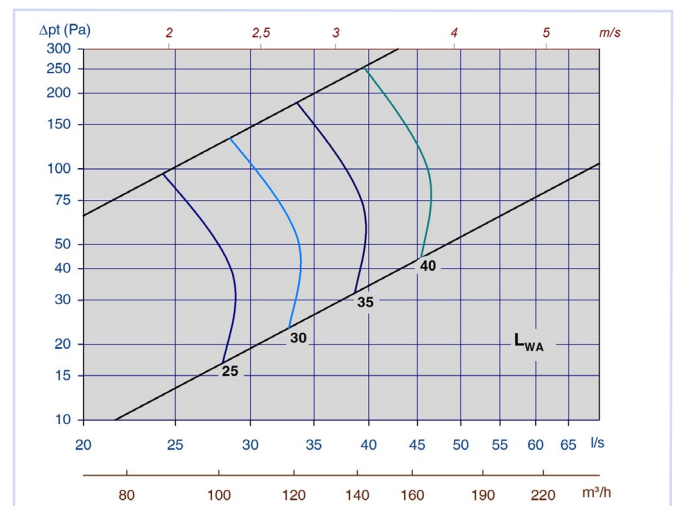


Diagram 10: TLG-G w/Luna 125-125 min. slot, supply

TLG-G

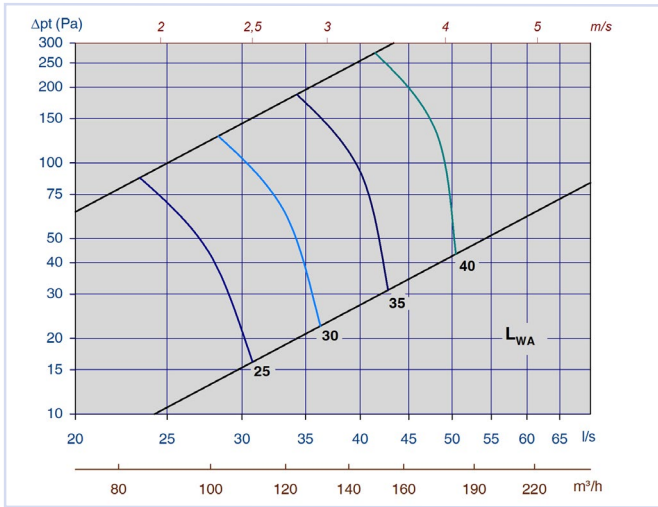


Diagram 11: TLG-G w/Luna 125-125 med. slot, supply

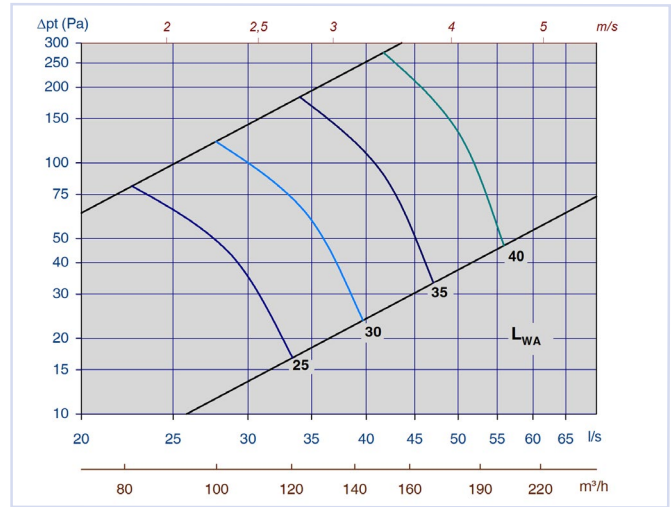


Diagram 12: TLG-G w/Luna 125-125 max. slot, supply

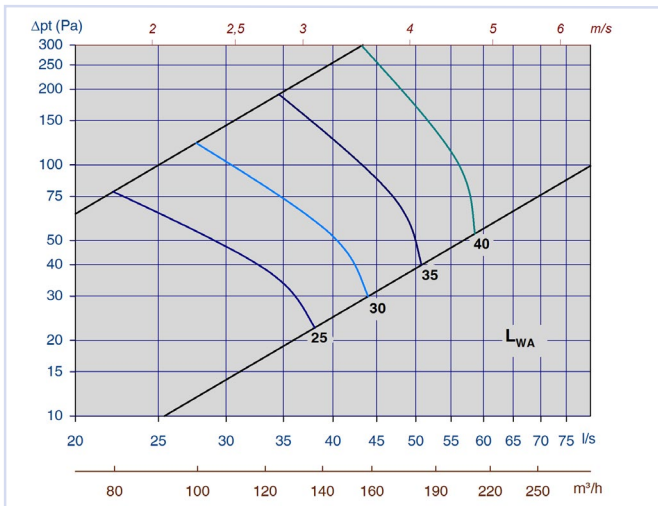


Diagram 13: TLG-G w/Luna 125-160 min. slot, supply

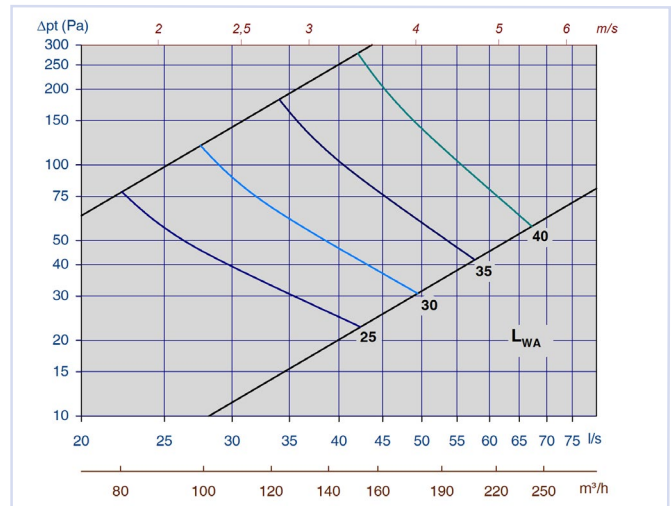


Diagram 14: TLG-G w/Luna 125-160 med. slot, supply

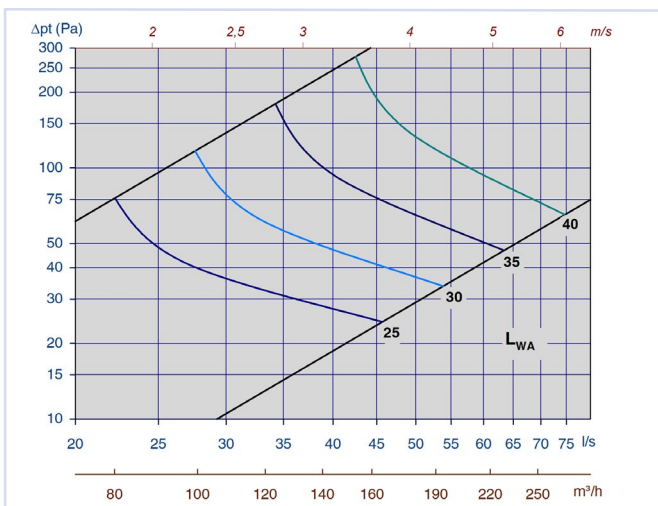


Diagram 15: TLG-G w/Luna 125-160 max. slot, supply

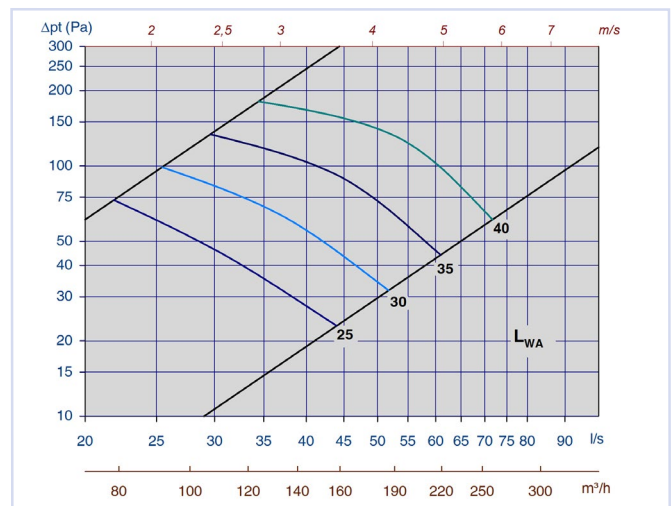


Diagram 16: TLG-G w/Luna 125-200 min. slot, supply

TLG-G

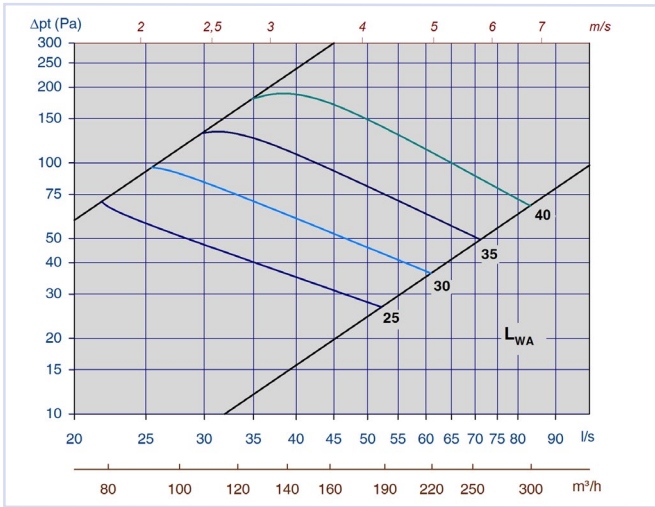


Diagram 17: TLG-G w/Luna 125-200 med. slot, supply

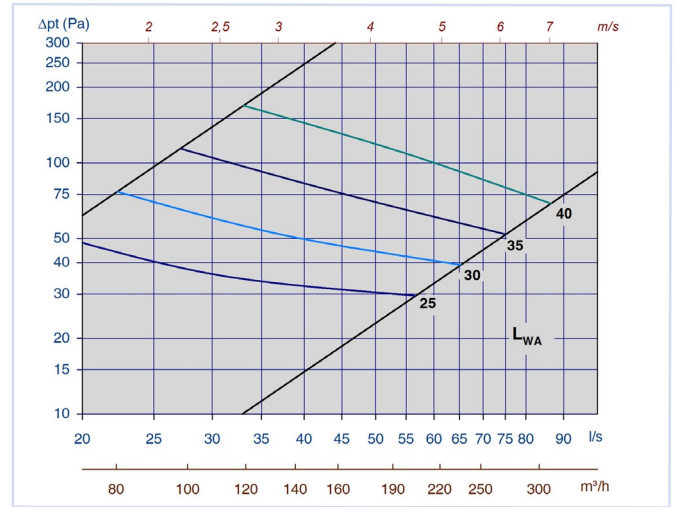


Diagram 18: TLG-G w/Luna 125-200 max. slot, supply

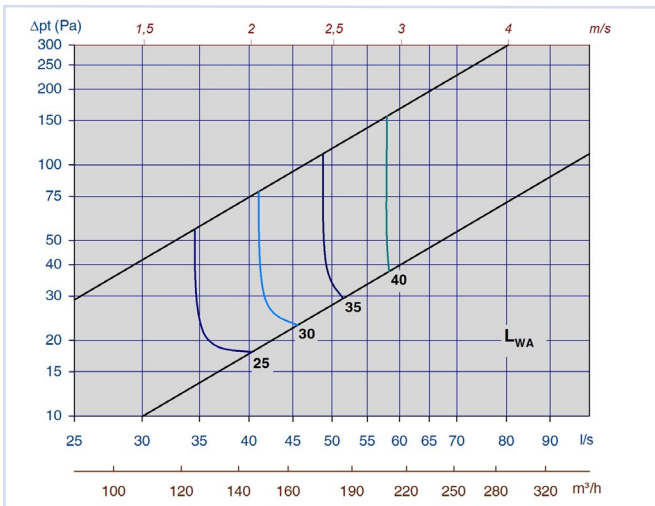


Diagram 19: TLG-G w/Luna 160-160 min. slot, supply

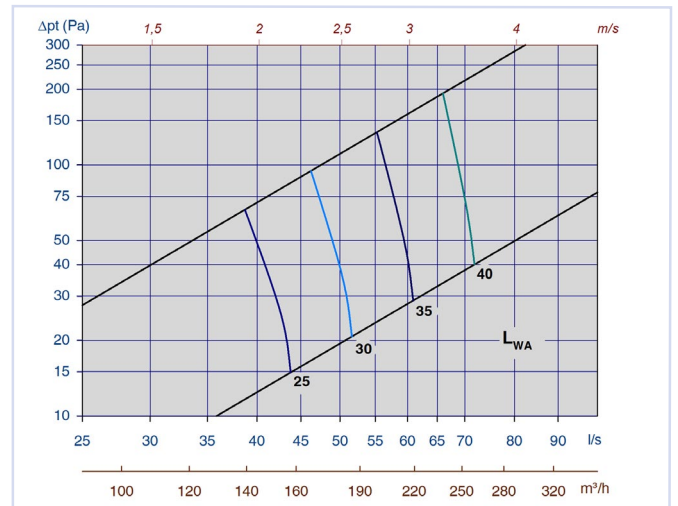


Diagram 20: TLG-G w/Luna 160-160 med. slot, supply

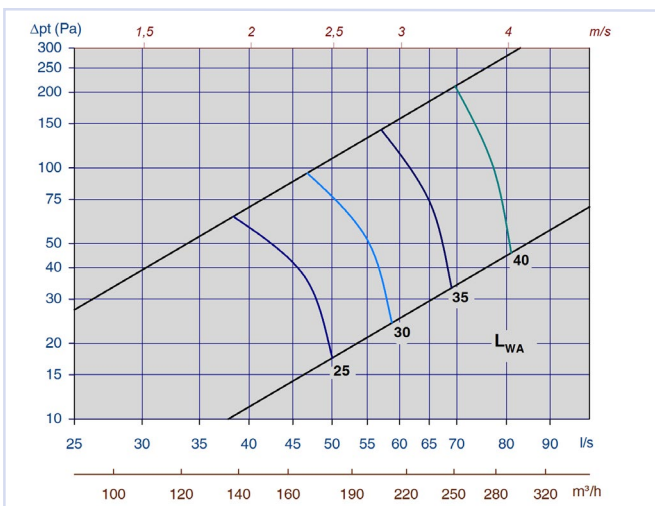


Diagram 21: TLG-G w/Luna 160-160 max. slot, supply

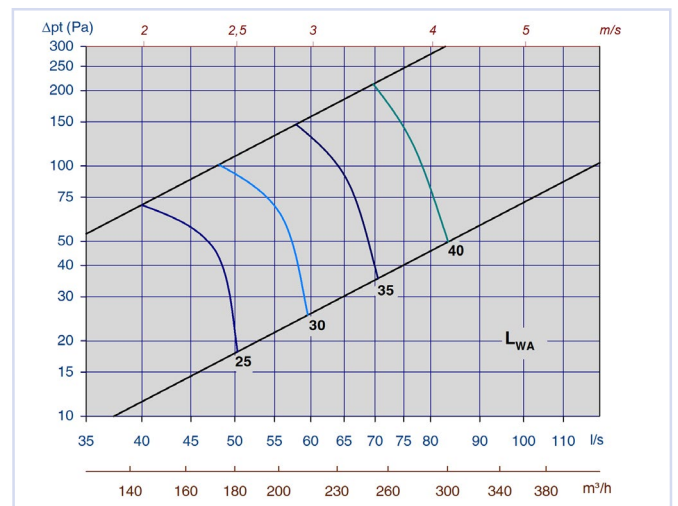


Diagram 22: TLG-G w/Luna 160-200 min. slot, supply

TLG-G

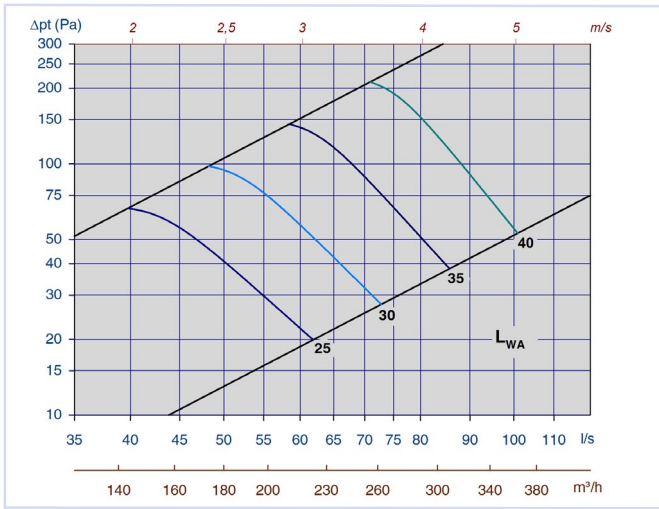


Diagram 23: TLG-G w/Luna 160-200 med. slot, supply

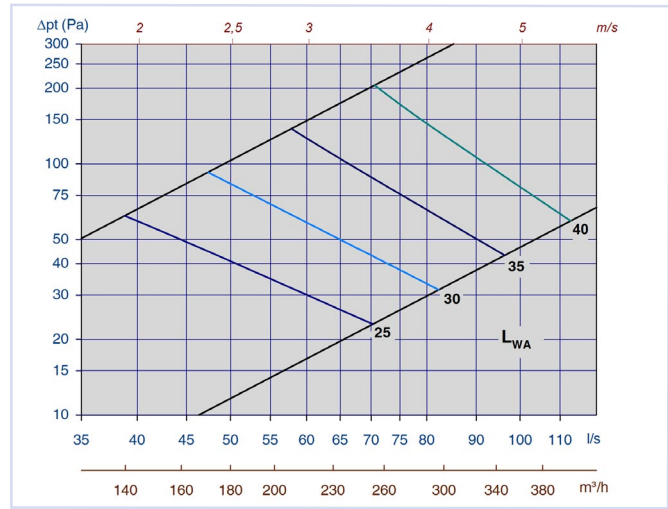


Diagram 24: TLG-G w/Luna 160-200 max. slot, supply

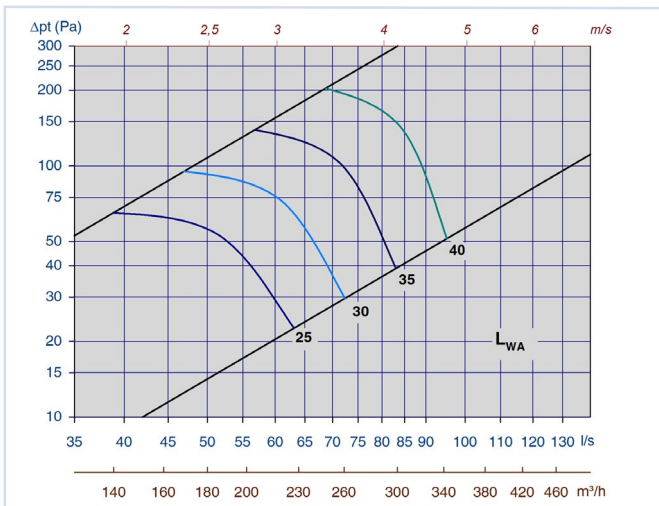


Diagram 25: TLG-G w/Luna 160-250 min. slot, supply

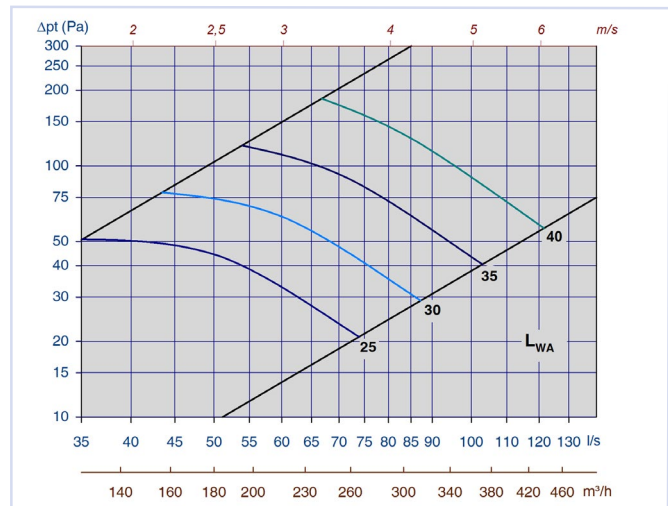


Diagram 26: TLG-G w/Luna 160-250 med. slot, supply

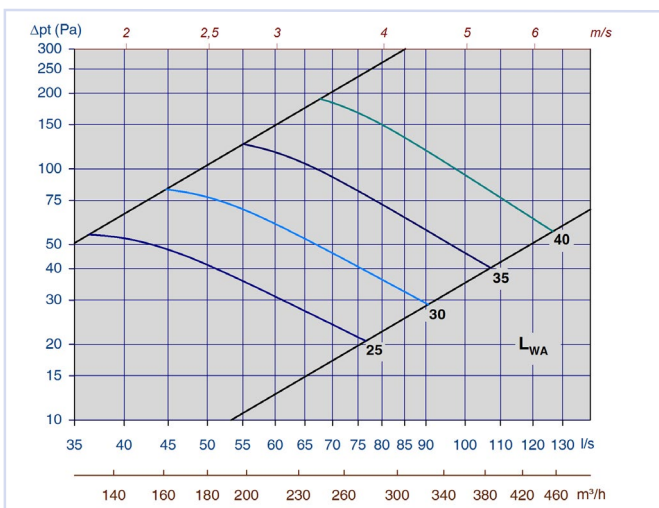


Diagram 27: TLG-G w/Luna 160-250 max. slot, supply

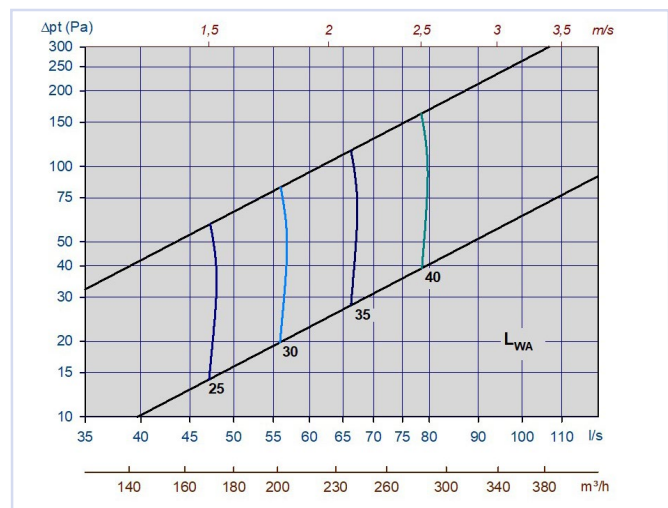


Diagram 28: TLG-G w/Luna 200-200 min. slot, supply

TLG-G

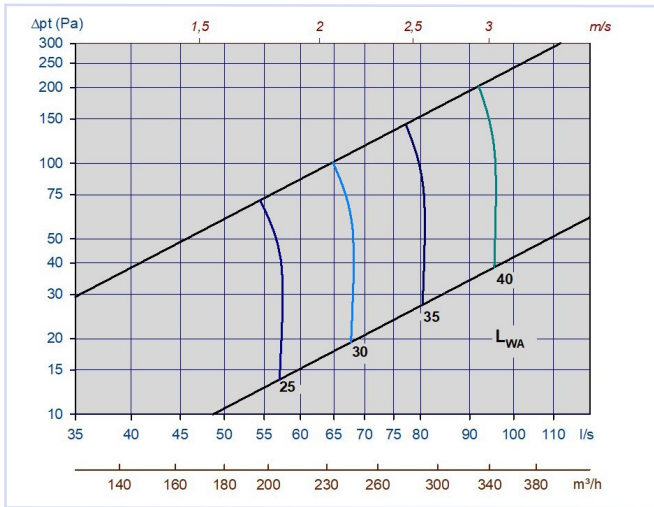


Diagram 29: TLG-G w/Luna 200-200 med. slot, supply

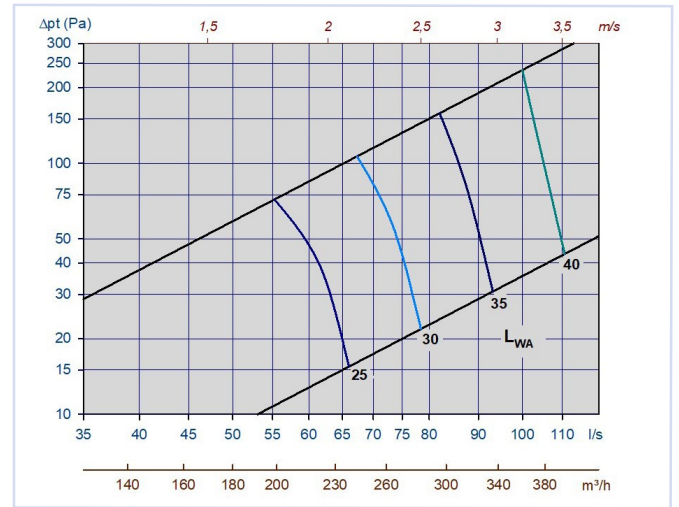


Diagram 30: TLG-G w/Luna 200-200 max. slot, supply

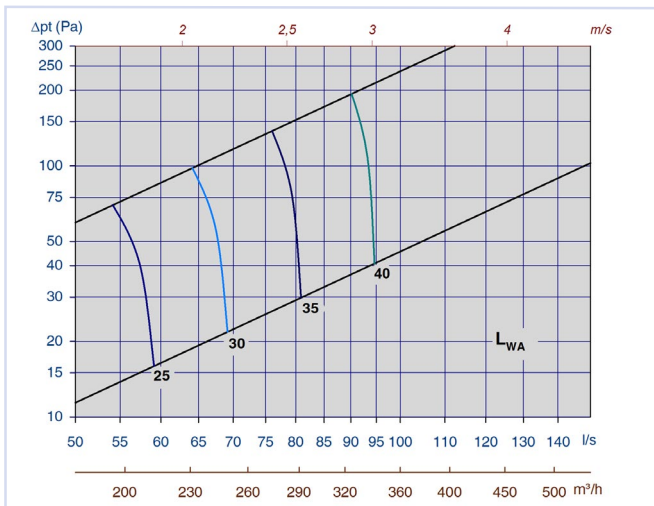


Diagram 31: TLG-G w/Luna 200-250 min. slot, supply

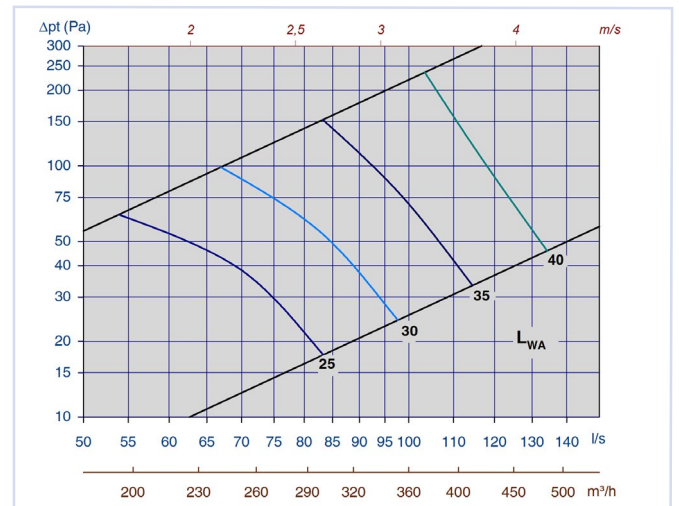


Diagram 32: TLG-G w/Luna 200-250 med. slot, supply

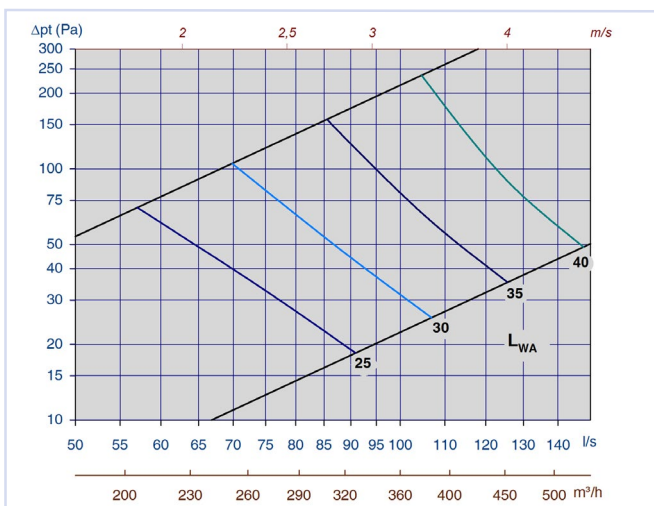


Diagram 33: TLG-G w/Luna 200-250 max. slot, supply

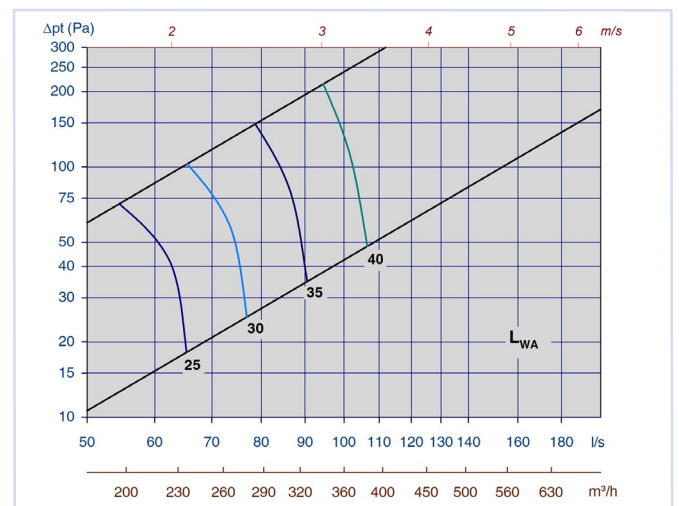


Diagram 34: TLG-G w/Luna 200-315 min. slot, supply

TLG-G

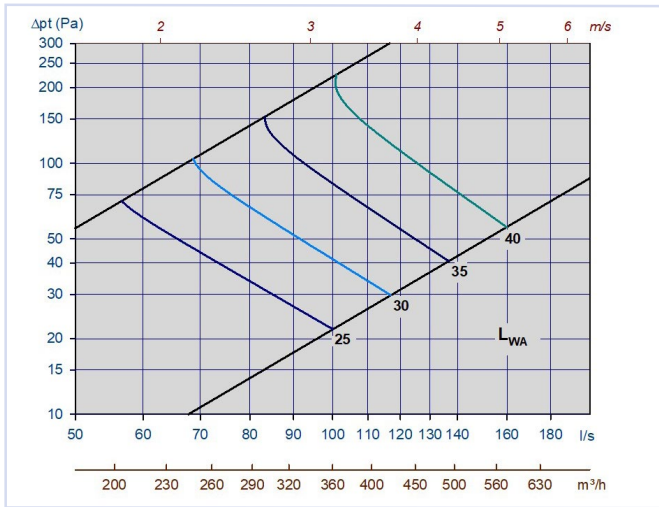


Diagram 35: TLG-G w/Luna 200-315 med. slot, supply

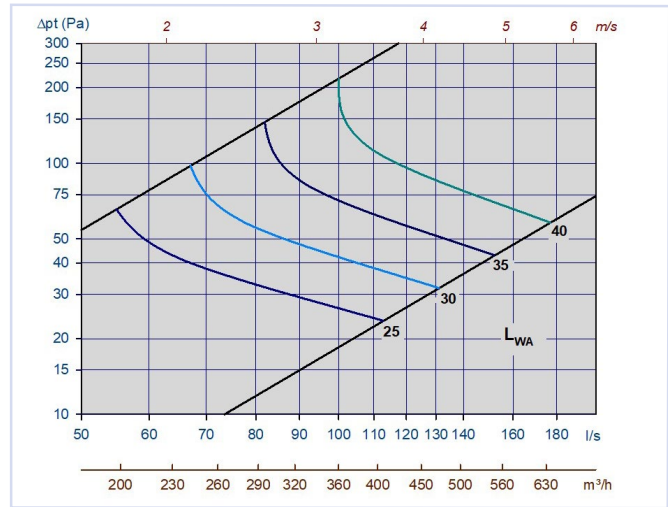


Diagram 36: TLG-G w/Luna 200-315 max. slot, supply

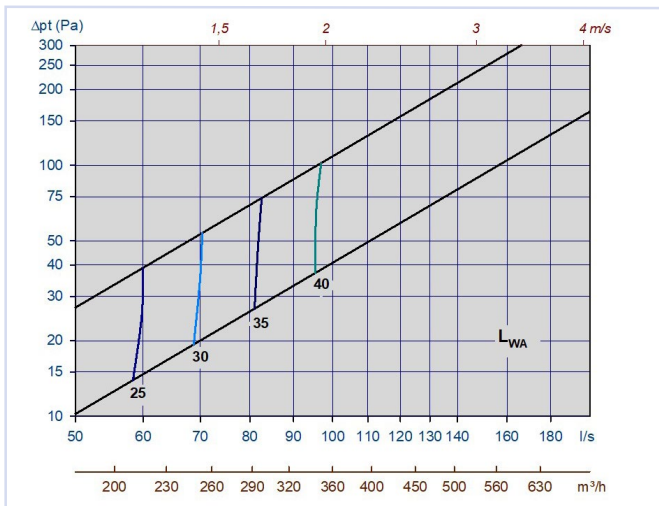


Diagram 37: TLG-G w/Luna 250-250 min. slot, supply

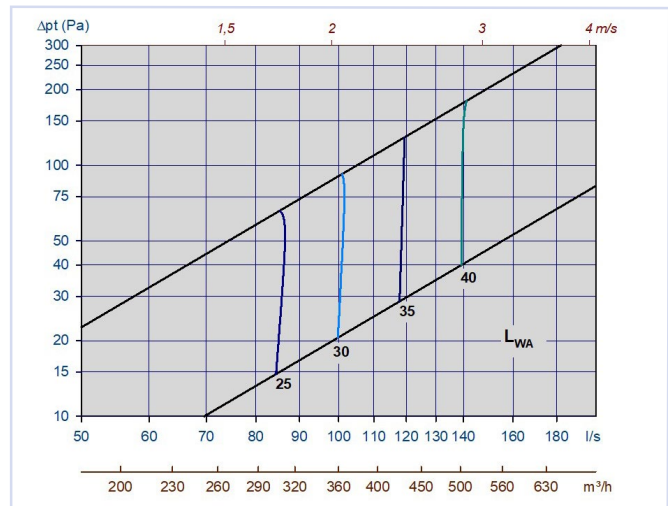


Diagram 38: TLG-G w/Luna 250-250 med. slot, supply

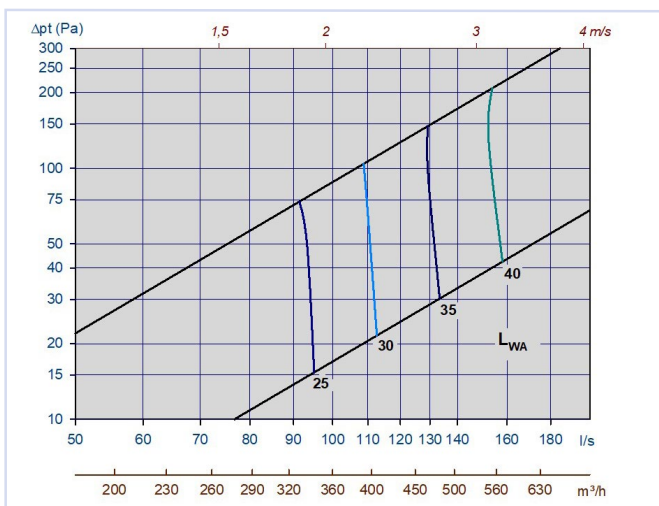


Diagram 39: TLG-G w/Luna 250-250 max. slot, supply

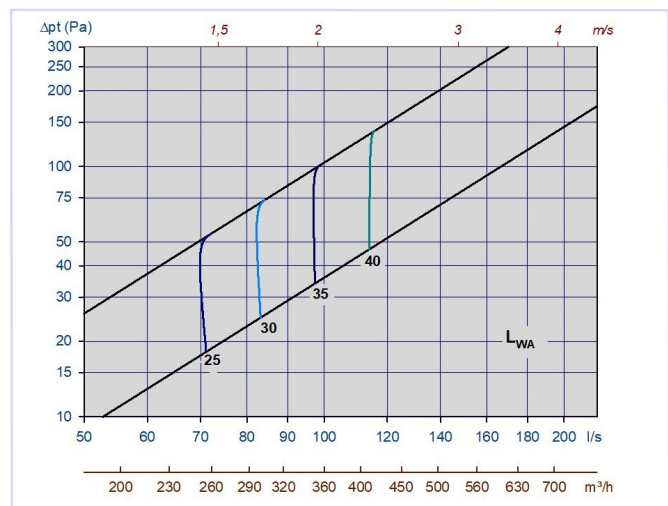


Diagram 40: TLG-G w/Luna 250-315 min. slot, supply

TLG-G

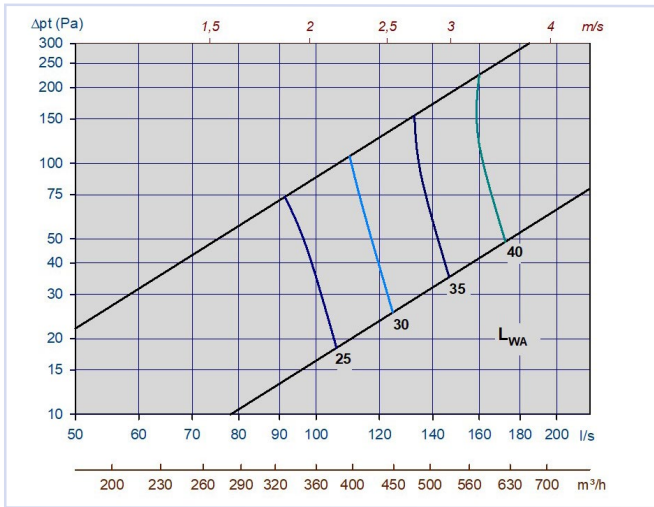


Diagram 41: TLG-G w/Luna 250-315 med. slot, supply

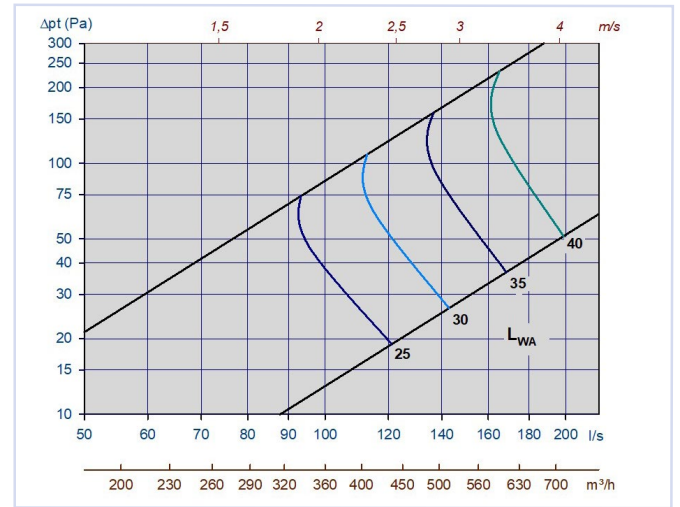


Diagram 42: TLG-G w/Luna 250-315 max. slot, supply

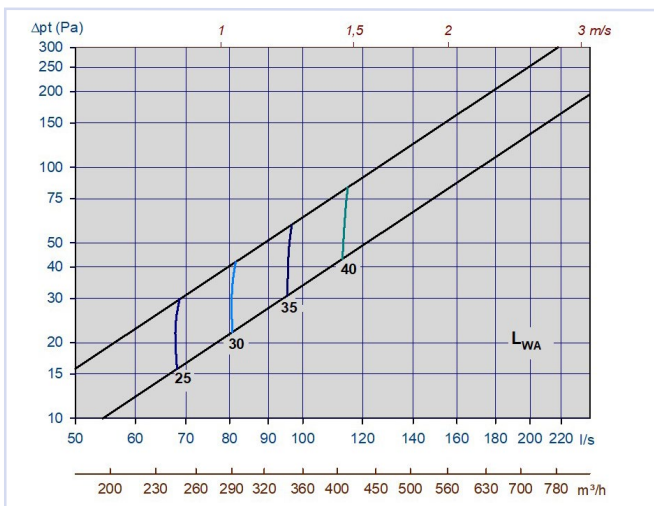


Diagram 43: TLG-G w/Luna 315-315 min. slot, supply

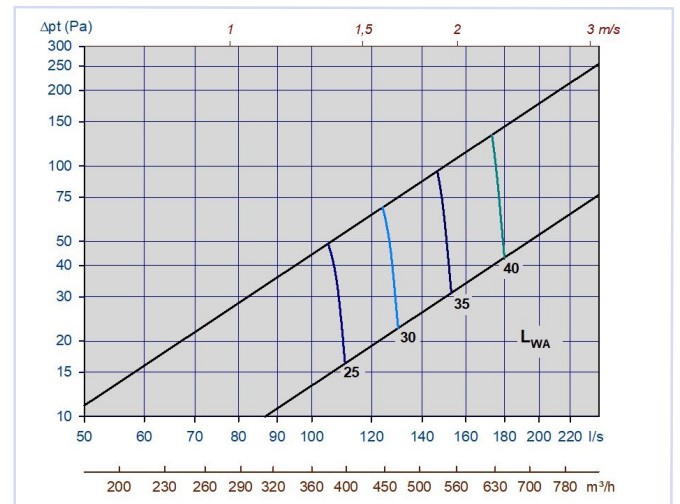


Diagram 44: TLG-G w/Luna 315-315 med. slot, supply

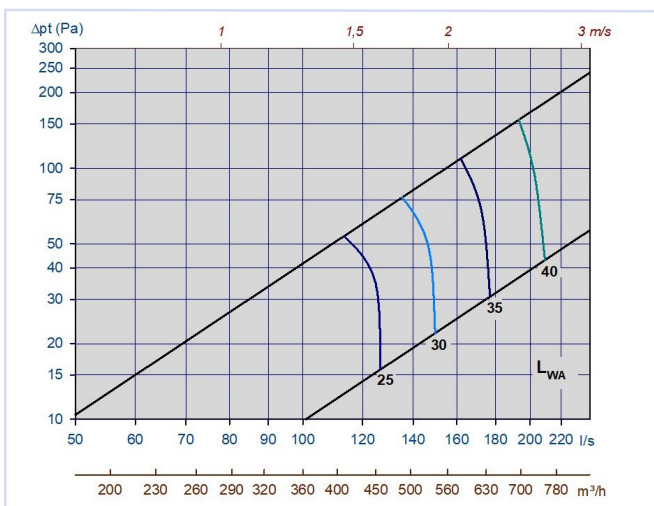


Diagram 45: TLG-G w/Luna 315-315 max. slot, supply

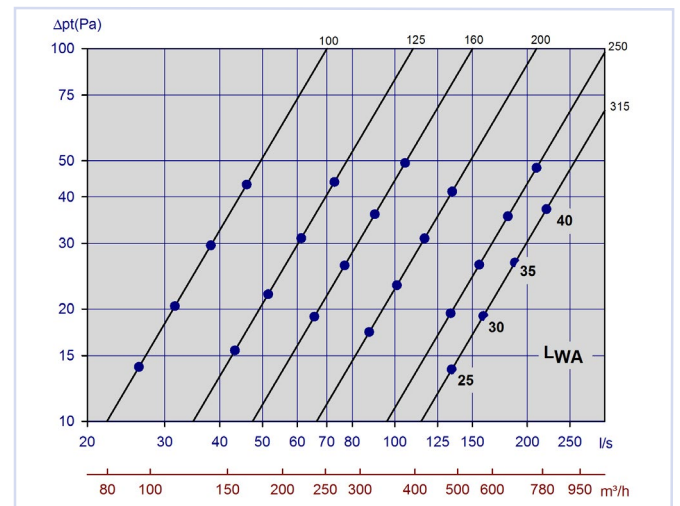


Diagram 46: TLG-G in duct end, supply

TLG-G

 **CALCULATION DIAGRAM, EXHAUST**

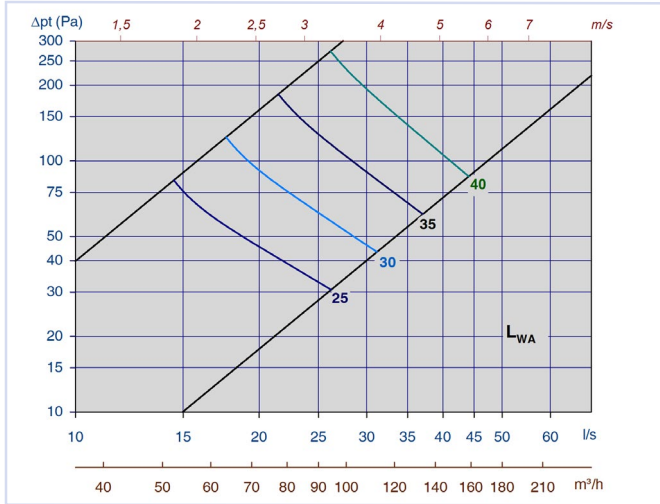


Diagram 47: TLG-G w/Luna 100-125 min. slot, exhaust

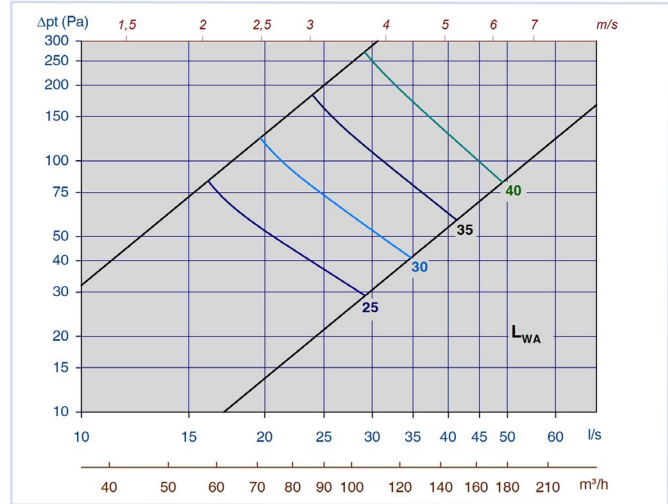


Diagram 48: TLG-G w/Luna 100-125 med. slot, exhaust

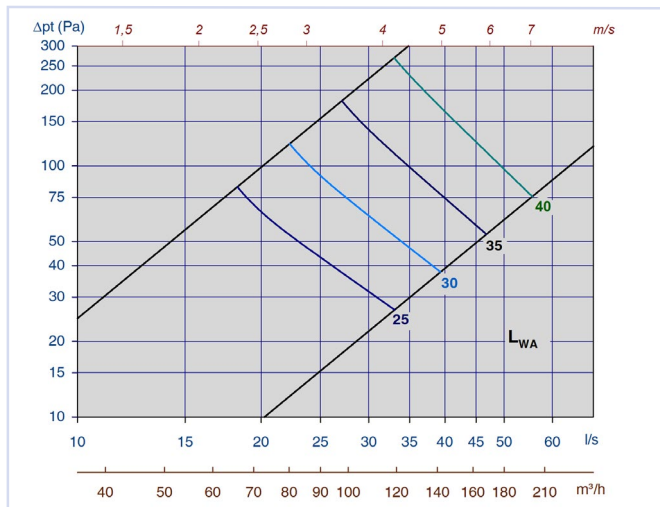


Diagram 49: TLG-G w/Luna 100-125 max. slot, exhaust

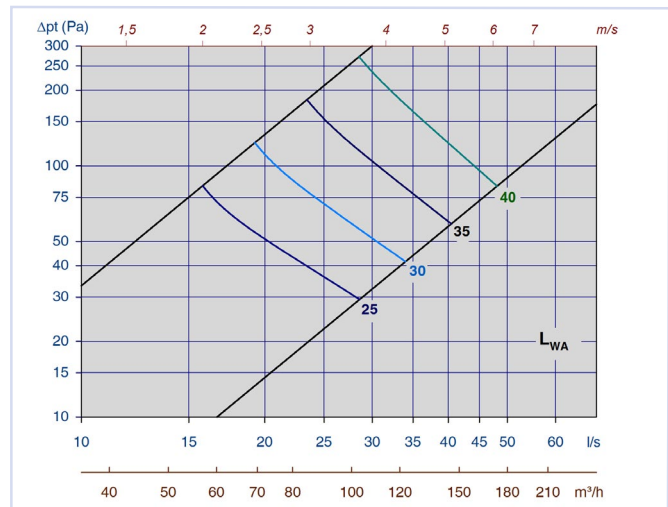


Diagram 50: TLG-G w/Luna 100-160 min. slot, exhaust

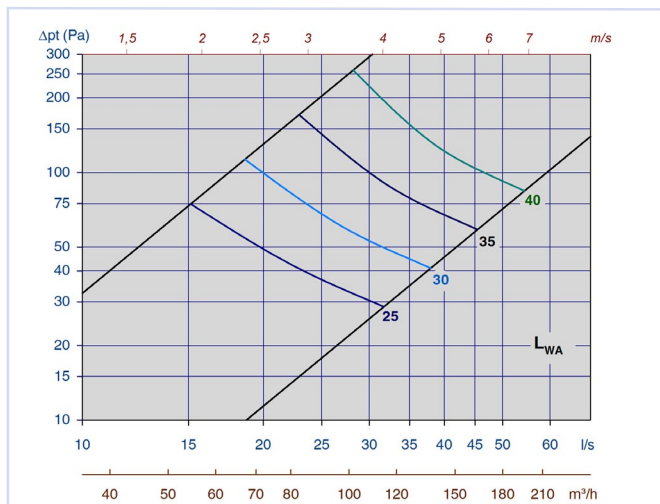


Diagram 51: TLG-G w/Luna 100-160 med. slot, exhaust

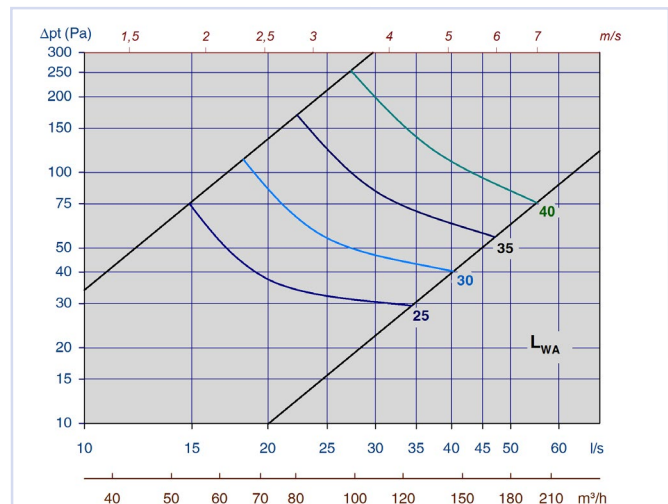


Diagram 52: TLG-G w/Luna 100-160 max. slot, exhaust

TLG-G

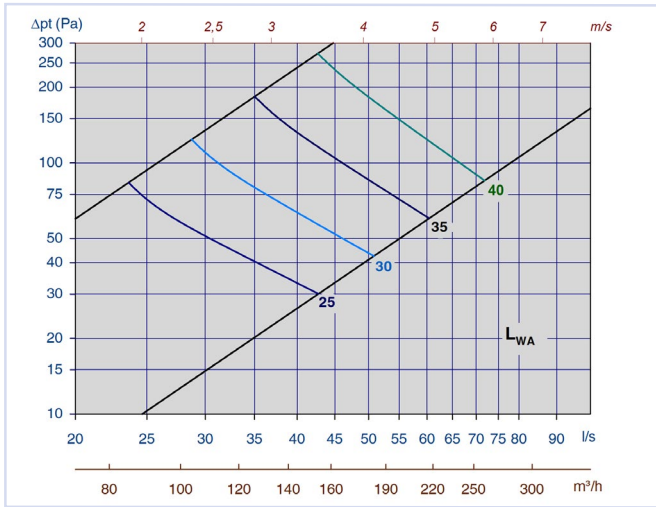


Diagram 53: TLG-G w/Luna 125-160 min. slot, exhaust

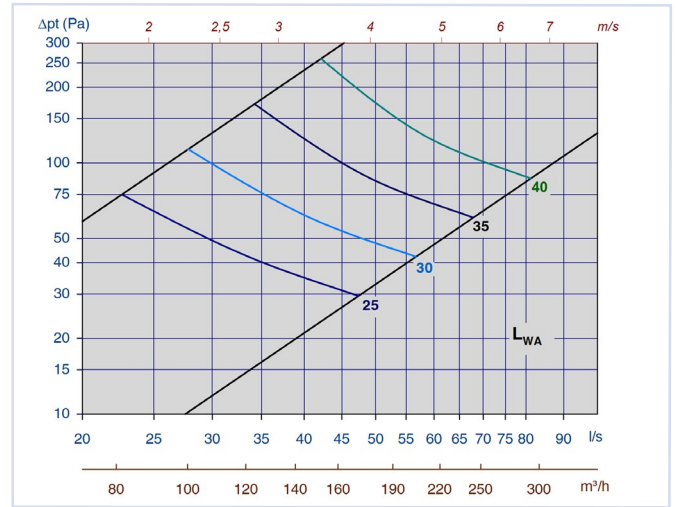


Diagram 54: TLG-G w/Luna 125-160 med. slot, exhaust

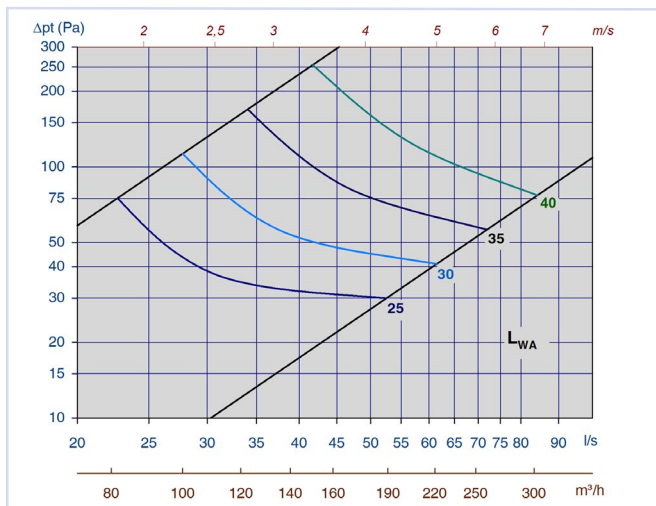


Diagram 55: TLG-G w/Luna 125-160 max. slot, exhaust

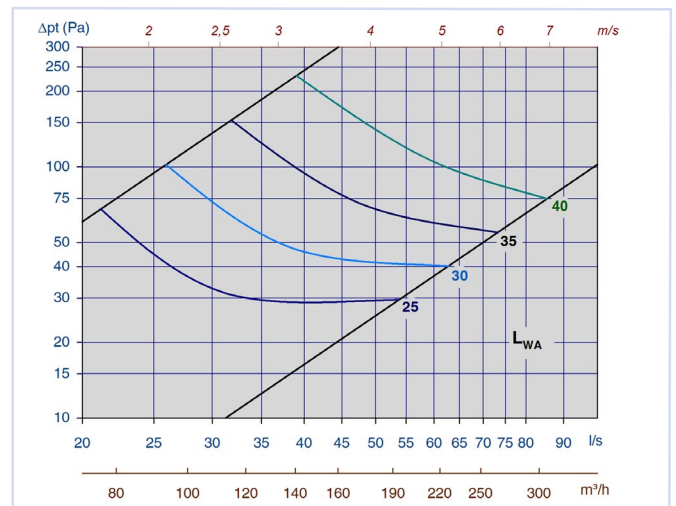


Diagram 56: TLG-G w/Luna 125-200 min. slot, exhaust

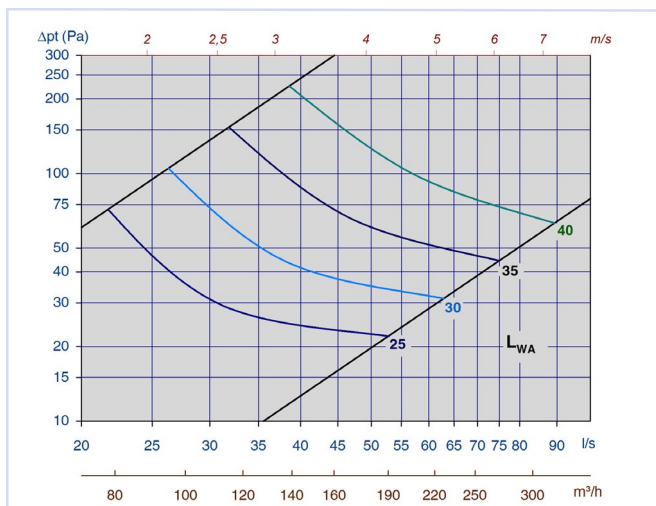


Diagram 57: TLG-G w/Luna 125-200 med. slot, exhaust

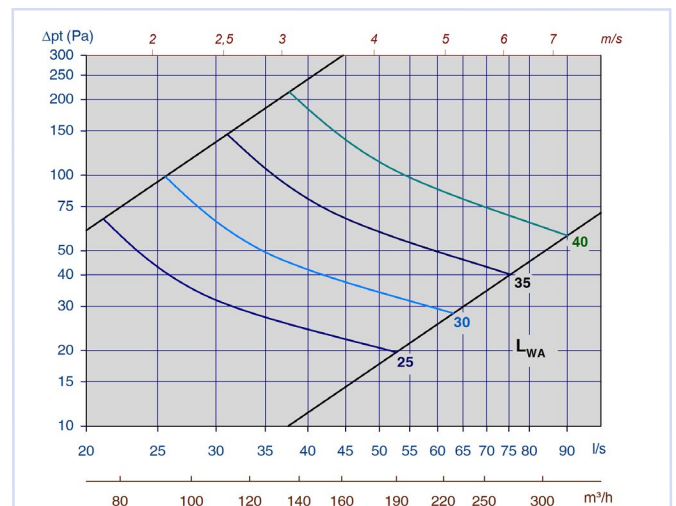


Diagram 58: TLG-G w/Luna 125-200 max. slot, exhaust

TLG-G

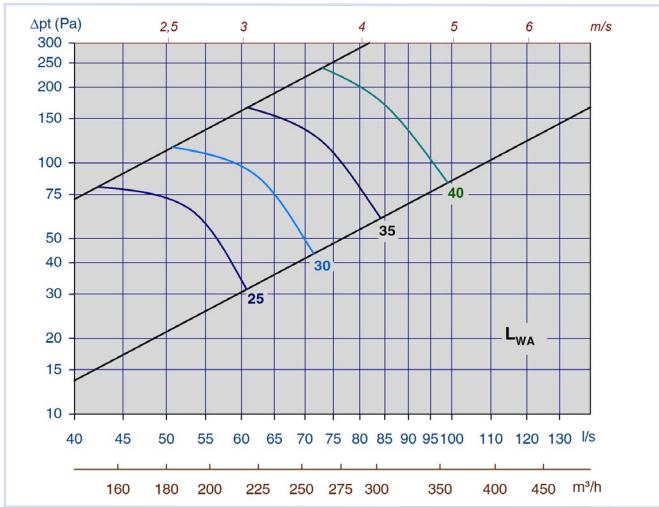


Diagram 59: TLG-G w/Luna 160-200 min. slot, exhaust

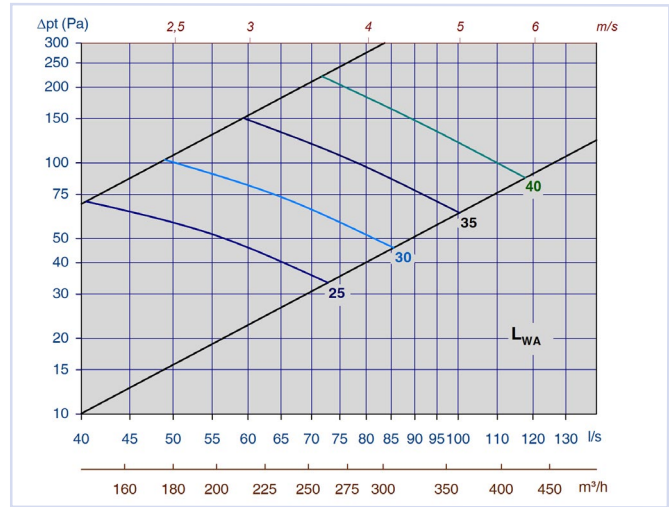


Diagram 60: TLG-G w/Luna 160-200 med. slot, exhaust

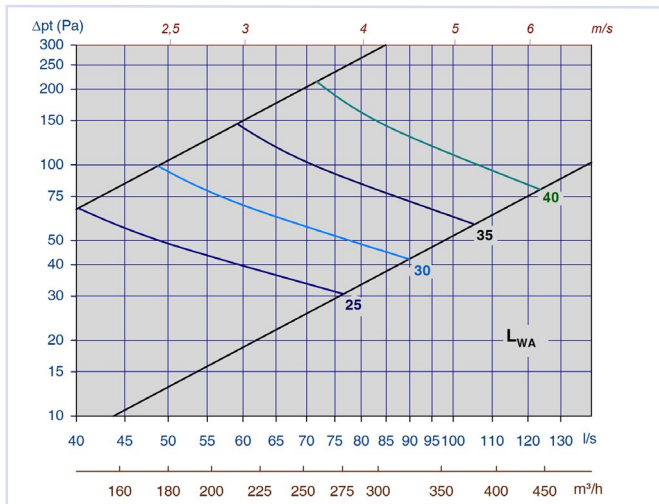


Diagram 61: TLG-G w/Luna 160-200 max. slot, exhaust

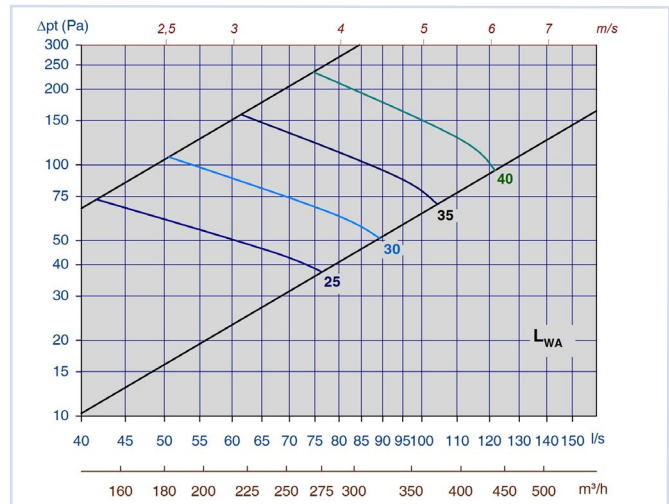


Diagram 62: TLG-G w/Luna 160-250 min. slot, exhaust

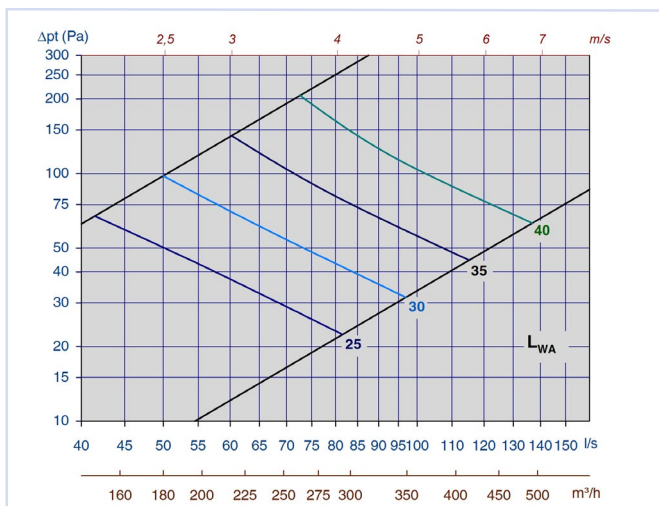


Diagram 63: TLG-G w/Luna 160-250 med. slot, exhaust

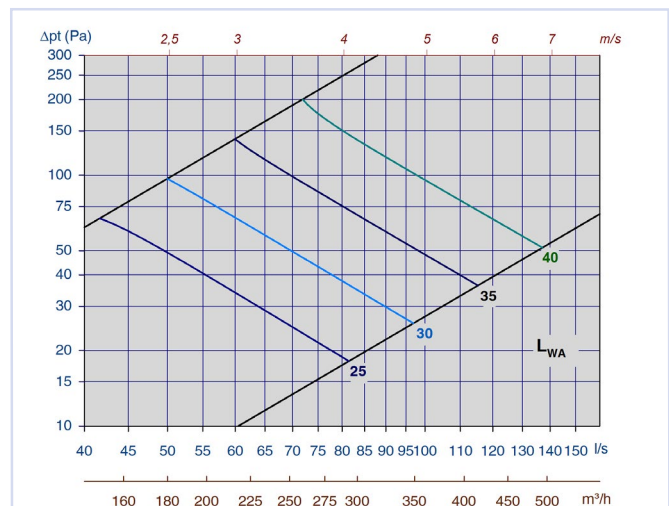


Diagram 64: TLG-G w/Luna 160-250 max. slot, exhaust

TLG-G

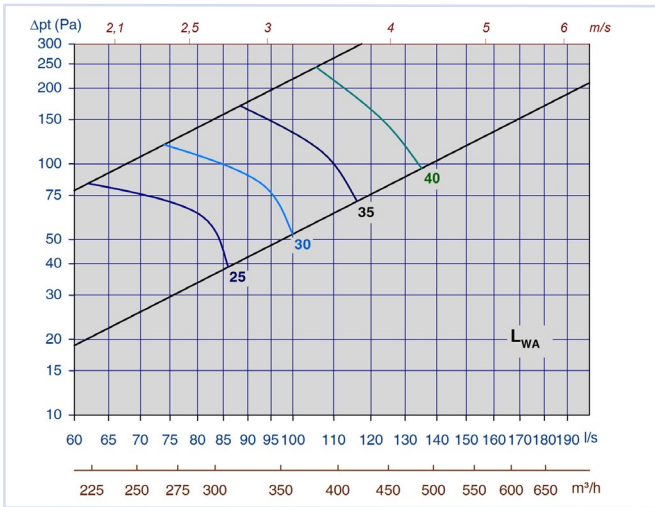


Diagram 65: TLG-G w/Luna 200-250 min. slot, exhaust

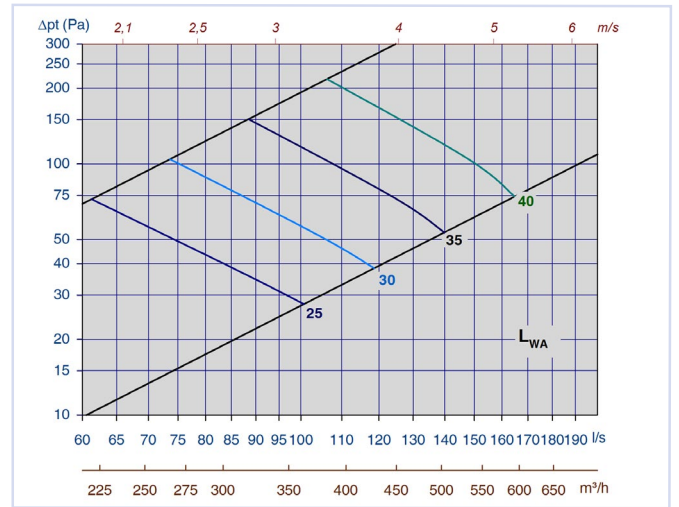


Diagram 66: TLG-G w/Luna 200-250 med. slot, exhaust

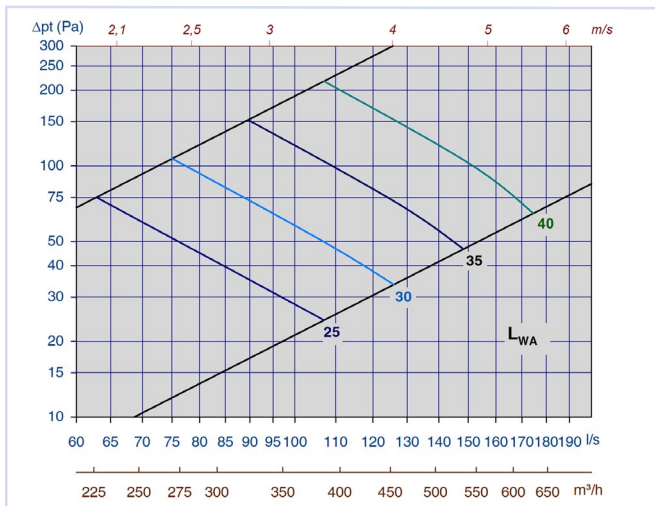


Diagram 67: TLG-G w/Luna 200-250 max. slot, exhaust

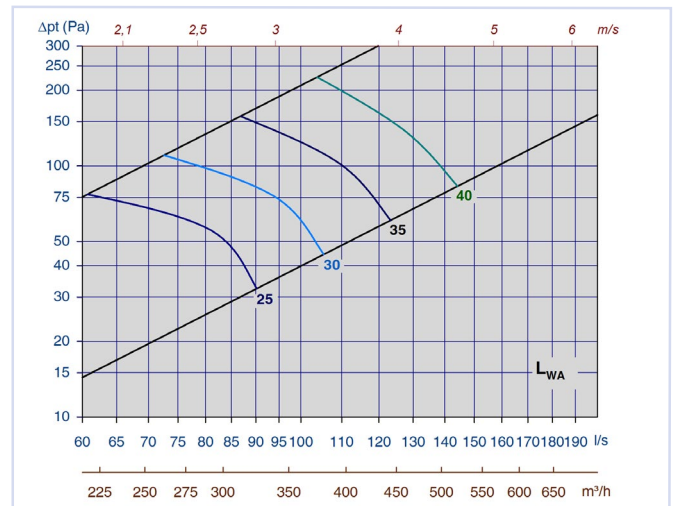


Diagram 68: TLG-G w/Luna 200-315 min. slot, exhaust

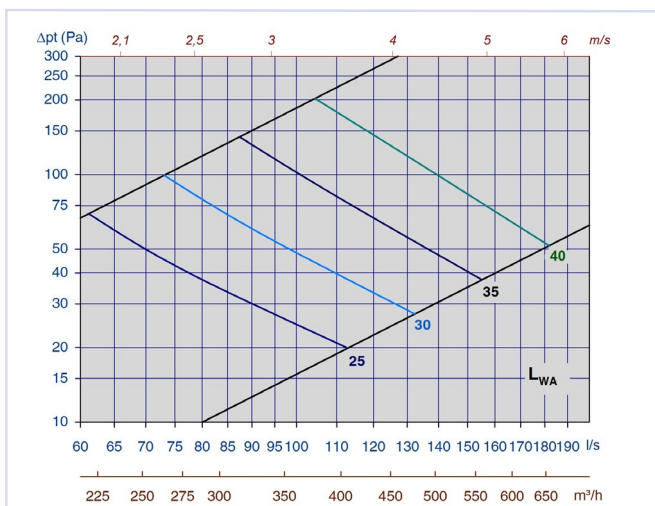


Diagram 69: TLG-G w/Luna 200-315 med. slot, exhaust

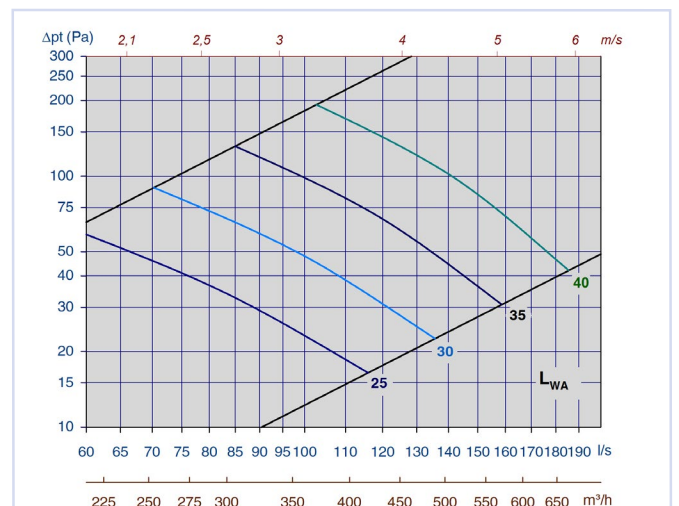


Diagram 70: TLG-G w/Luna 200-315 max. slot, exhaust

TLG-G

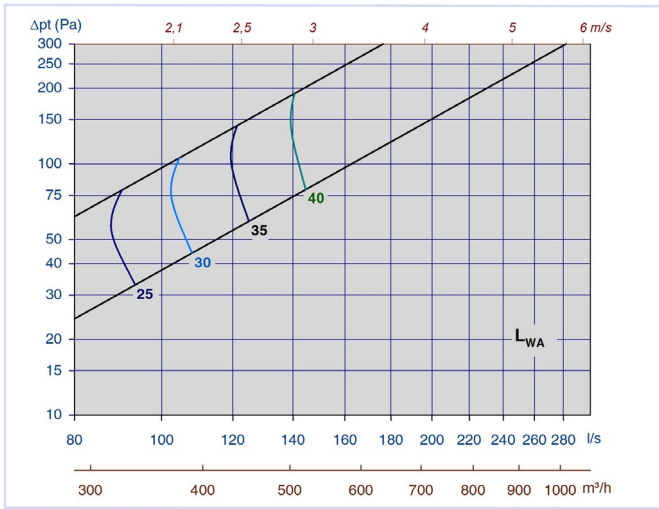


Diagram 71: TLG-G w/Luna 200-315 min. slot, exhaust

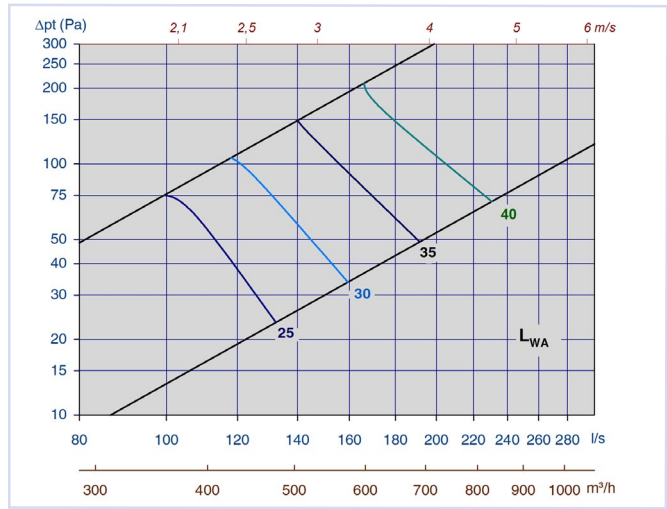


Diagram 72: TLG-G w/Luna 250-315 med. slot, exhaust

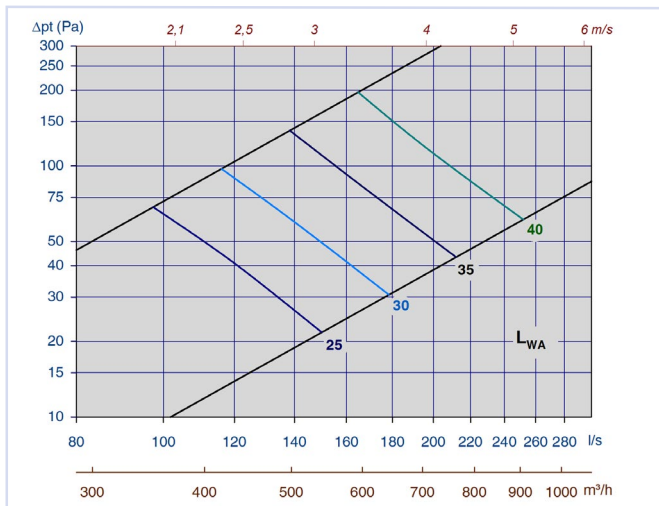


Diagram 73: TLG-G w/Luna 250-315 max. slot, exhaust

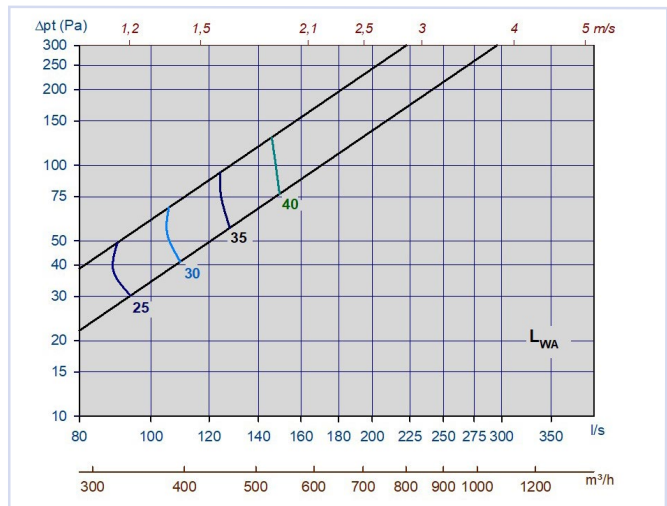


Diagram 74: TLG-G w/Luna 315-315 min. slot, exhaust

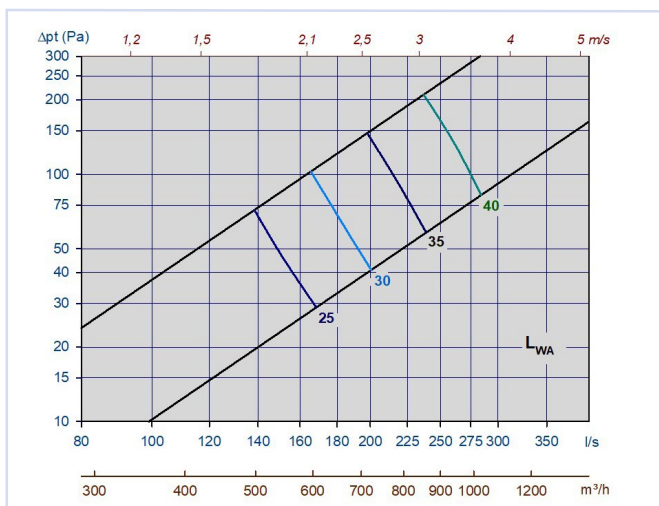


Diagram 75: TLG-G w/Luna 315-315 med. slot, exhaust

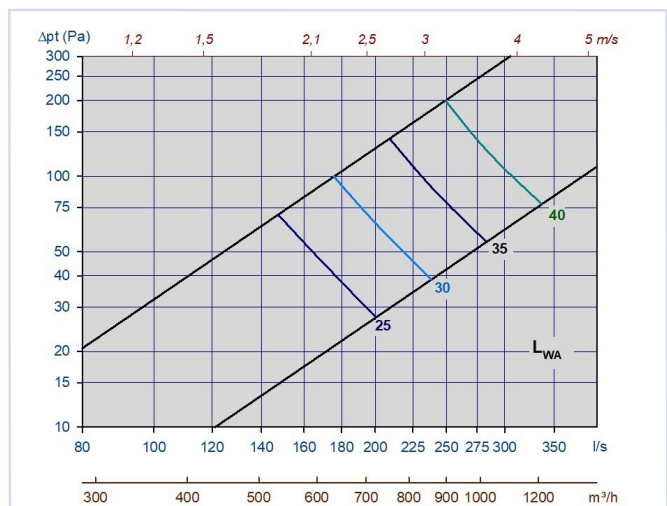


Diagram 76: TLG-G w/Luna 315-315 max. slot, exhaust

TLG-G

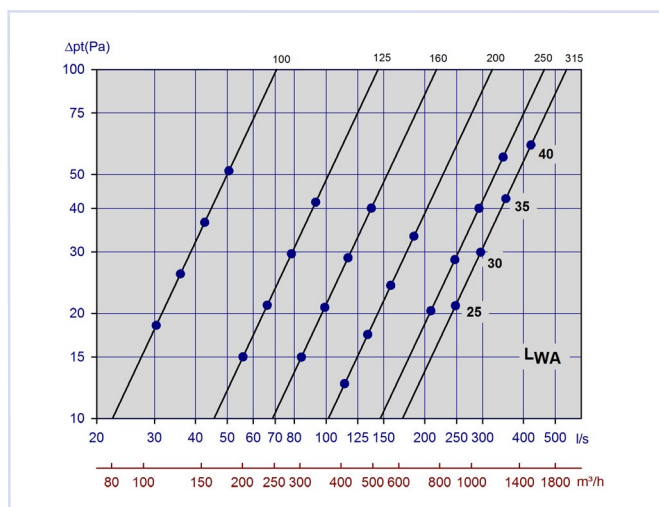


Diagram 77: TLG-G in duct end, exhaust

Static sound attenuation incl. end reflection for TLG-G with Luna

TLG-G Dim.	Luna Dim.	Attenuation [dB]							
		63	125	250	500	1k	2k	4k	8k
100	100-100	25	16	17	20	22	20	16	12
125	100-125	26	12	14	18	20	19	14	17
160	100-160	25	11	13	16	18	19	14	17
125	125-125	24	16	16	20	22	17	13	19
160	125-160	24	11	10	16	19	15	11	17
200	125-200	25	11	9	15	18	15	10	15
160	160-160	20	13	15	16	12	10	11	10
200	160-200	17	9	10	16	18	11	13	17
250	160-250	19	11	12	15	17	10	11	11
200	200-200	18	12	15	18	18	12	16	18
250	200-250	17	12	14	16	16	10	14	16
315	200-315	18	11	13	13	15	9	12	15
250	250-250	15	10	14	15	15	11	13	16
315	250-315	17	11	13	15	14	10	12	14
315	315-315	12	9	14	16	11	11	12	14

Table 7

Correction factor [KO]: TLG-G with Luna, supply

TLG-G Dim.	Luna Dim.	KO-factor [dB]							
		63	125	250	500	1k	2k	4k	8k
100	100-100	-11	-5	1	-4	-5	-10	-11	-13
125	100-125	-12	-6	0	-4	-6	-9	-8	-11
160	100-160	-13	-8	-1	-6	-5	-8	-9	-14
125	125-125	-9	-6	0	-5	-3	-9	-11	-16
160	125-160	-10	-9	-3	-8	-5	-7	-8	-17
200	125-200	-8	-5	-3	-7	-6	-8	-7	-12
160	160-160	-10	-9	1	-5	-4	-9	-12	-17
200	160-200	-13	-2	1	-5	-7	-8	-8	-11
250	160-250	-14	-8	-3	-6	-6	-7	-9	-13
200	200-200	-14	-8	1	-4	-5	-9	-13	-15
250	200-250	-14	-9	0	-4	-5	-8	-11	-16
315	200-315	-14	-9	-6	-8	-5	-7	-8	-10
250	250-250	-13	-8	-1	-3	-4	-9	-12	-15
315	250-315	-13	-8	0	-4	-4	-9	-12	-13
315	315-315	-11	-6	1	-2	-5	-10	-13	-13

Table 8: For the calculation of frequency distributed noise, emitted sound power levels, L_{WA} found in the diagram and formula: $L_W = L_{WA} + KO$ are used.

TLG-G

Static sound attenuation incl. end reflection for TLG-G in duct.

TLG-G Dim.	Attenuation [dB]							
	63	125	250	500	1k	2k	4k	8k
100	25	17	13	6	3	3	3	5
125	22	16	12	5	2	1	3	4
160	20	15	11	5	1	1	2	4
200	15	12	10	2	1	1	1	3
250	15	9	7	1	1	1	1	1
315	14	8	5	1	1	1	1	1

Table 9

Correction factor [KO]: TLG-G with Luna, exhaust

TLG-G Dim.	KO-factor (dB)							
	63	125	250	500	1K	2K	4K	8K
100-125	-15	-10	-2	-7	-6	-8	-6	-11
100-160	-13	-7	3	-6	-7	-9	-8	-13
125-160	-13	-8	0	-7	-7	-5	-11	-15
125-200	-13	-7	-2	-8	-8	-10	-5	-7
160-200	-15	-9	0	-6	-10	-7	-6	-12
160-250	-15	-10	0	-4	-11	-7	-6	-11
200-250	-13	-7	-1	-6	-6	-6	-9	-13
200-315	-13	-7	-1	-5	-7	-7	-8	-11
250-315	-14	-8	-2	-6	-6	-6	-8	-12
315-315	-14	-8	-3	-5	-4	-7	-11	-15

Table 11: For the calculation of frequency distributed noise, emitted sound power levels, L_{WA} found in the diagram and formula: $L_w = L_{WA} + KO$ are used.

FLOW PATTERN, TLG-G

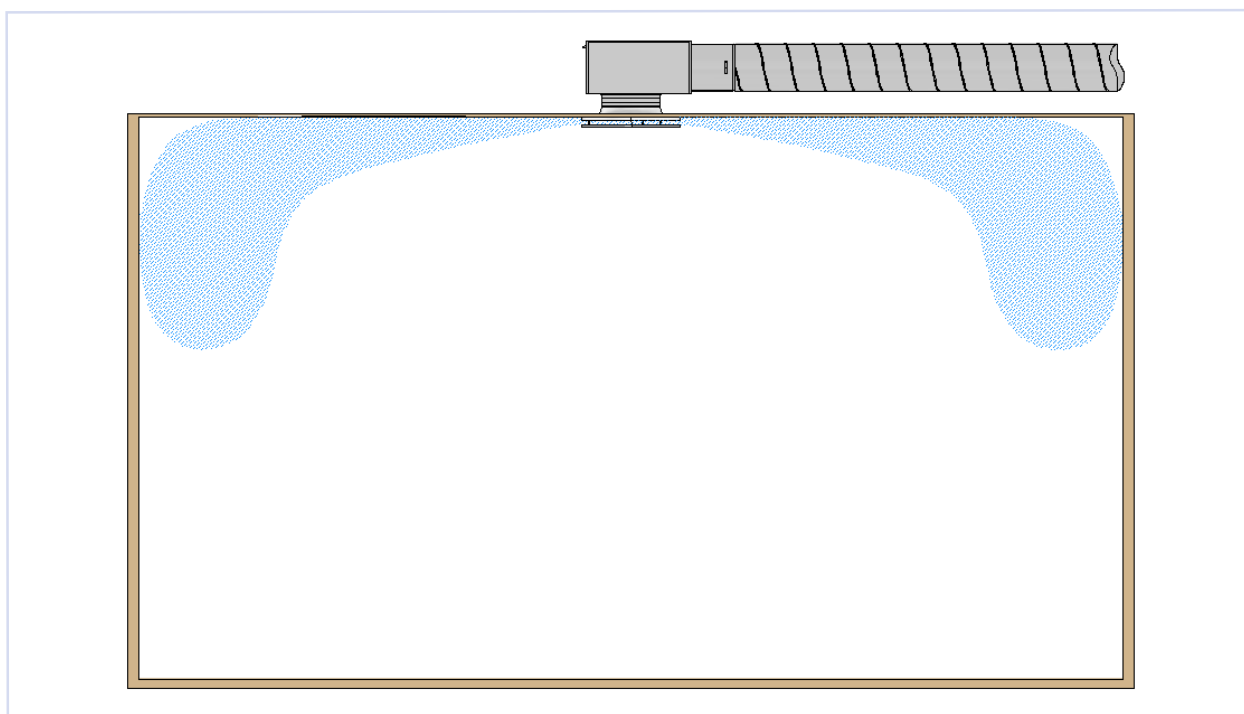


Figure 3

Correction factor [KO]: TLG-G in duct., supply

TLG-G Dim.	KO [dB]							
	63	125	250	500	1k	2k	4k	8k
100	-12	-6	1	-1	-6	-12	-14	-13
125	-11	-5	0	-2	-6	-9	-13	-12
160	-13	-8	1	-3	-5	-8	-12	-15
200	-14	-8	0	-2	-5	-9	-14	-15
250	-14	-9	3	-3	-6	-10	-12	-16
315	-15	-9	1	-3	-5	-10	-14	-16

Table 10: For the calculation of frequency distributed noise, emitted sound power levels, L_{WA} found in the diagram and formula: $L_w = L_{WA} + KO$ are used.

Correction factor [KO], TLG-G in duct, exhaust

TLG-G Dim.	KO-factor (dB)							
	63	125	250	500	1K	2K	4K	8K
Ø100	-16	-11	-9	-8	-7	-5	-7	-15
Ø125	-16	-10	-11	-11	-8	-5	-6	-17
Ø160	-14	-9	-6	-7	-6	-5	-9	-14
Ø200	-14	-9	-7	-7	-7	-6	-7	-15
Ø250	-13	-7	-4	-4	-5	-8	-9	-13
Ø315	-11	-9	-10	-10	-5	-6	-8	-15

Table 12: For the calculation of frequency distributed noise, emitted sound power levels, L_{WA} found in the diagram and formula: $L_w = L_{WA} + KO$ are used.

TLG-G

THROW LENGTH DIAGRAMS

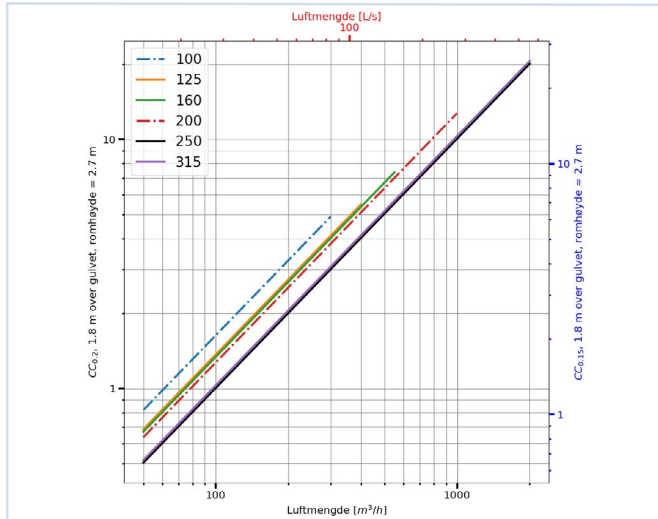


Diagram 78: Recommended min. cc at end speed 0,2 and 0,15 m/s, at 1,8m above the floor in a room with a 2,7m high ceiling.

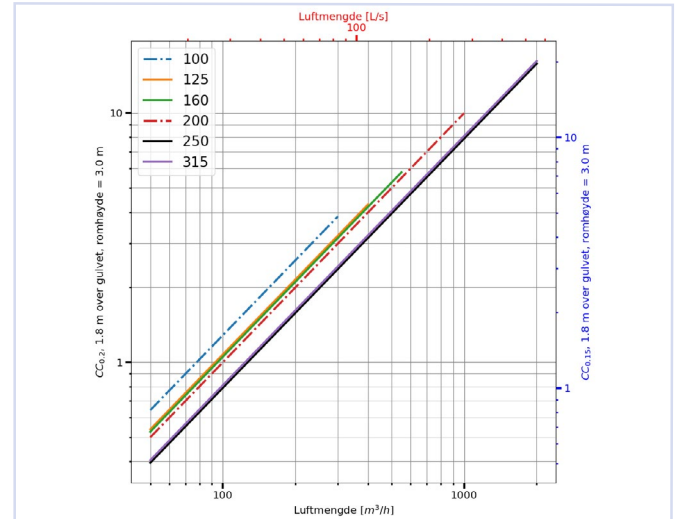


Diagram 79: Recommended min. cc at end speed 0,2 and 0,15 m/s, at 1,8m above the floor in a room with a 3m high ceiling.

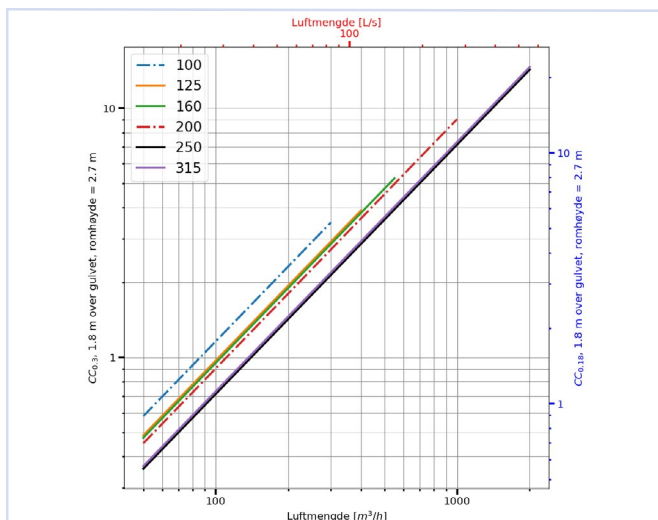


Diagram 80: Recommended min. cc at end speed 0,3 and 0,18 m/s, 1,8m above the floor in a room with a 2,7 m high ceiling.

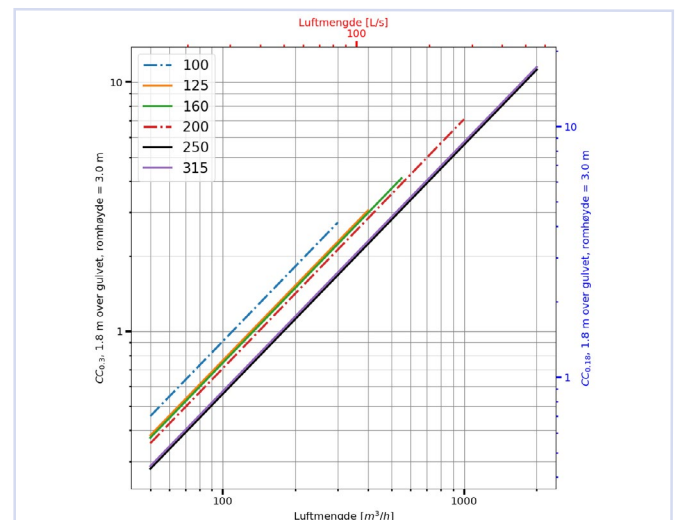


Diagram 81: Recommended min. cc at end speed 0,3 and 0,18 m/s, 1,8m above the floor in a room with a 3m high ceiling.

THROW LENGTH, TLG-G

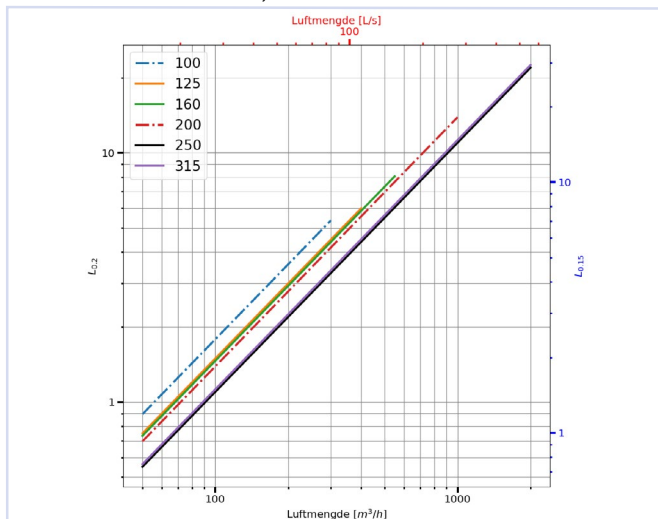


Diagram 82: Throw length at end speed 0,2 and 0,15 m/s.

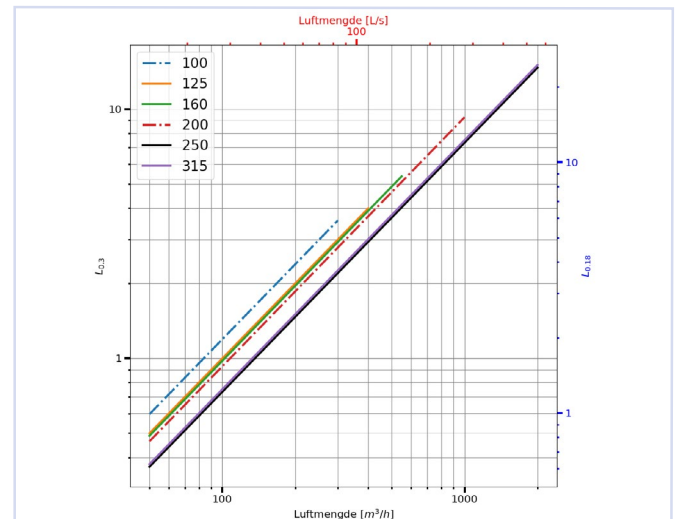


Diagram 83: Throw length at end speed 0,3 and 0,18 m/s.

TLG-G

INSTALLATION

When mounted in a fixed ceiling or inserted in a ceiling plate, TLG-G is attached by two mounting brackets as shown in figure 4, or the diffuser is screwed to the box outlet. If a Luna plenum box is used, the unit is attached to the rear of the support bracket by a threaded rod or strap (figure 5).

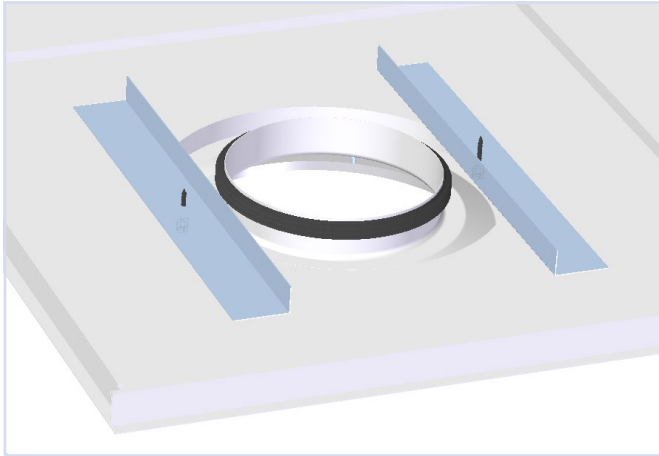


Figure 4: Installation

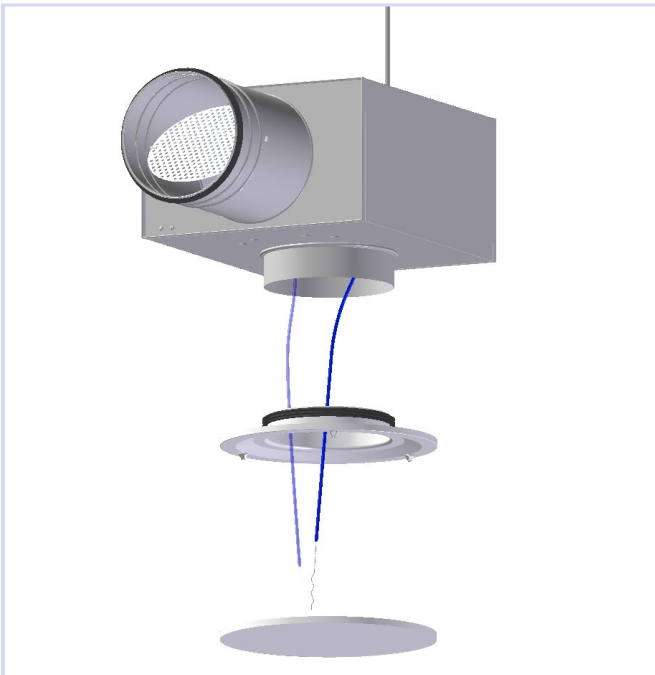


Figure 5: Installation

COMMISSIONING

During commissioning, the diffuser front must be fitted. Measuring tube and adjustment wire are pulled through the slot. The damper is secured by using a clamping nut on the wire. Tighten the clamping nut properly so the damper nut change position. Correction factors for calculation of air flow rates are provided on the label inside the diffuser, or can be found in our commissioning guide at our website: www.trox.no

MAINTENANCE

The diffuser can be cleaned by using a damp cloth. When cleaning the duct network, the diffuser front must be removed in order to gain access to the duct. If Luna is used, the diffuser plate and damper are to be removed in order to gain free access to the duct.

ENVIRONMENT

Enquiries regarding product declaration can be directed to our sales team, or information can be found at www.trox.no

TLG-G is developed and manufactured by:

The company reserves the right to make amendments without prior notice.