Perforated Membranes

With nearly 400 options, Velaria Systems offers an almost limitless selection of perforated patterns that can be combined with colors and images to create a totally unique effect.

Enhance the acoustic performance by adding sound absorbing backing or combine with backlighting to animate the pattern.

Velaria Systems offers an enormous variety of perforated membrane patterns – so many that we cannot show them all here. For the full catalogue of patterns please refer to "DPS Perforations" found in the Resources section of the Velaria Systems website: velariasystems.com/resources

Some Examples

The patterns shown below are just a small selection of the possibilities offered. Each membrane has a unique hole pattern, hole size, total open area and maximum allowable width for perforations.

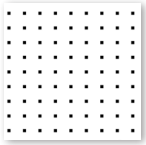
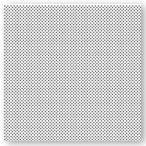
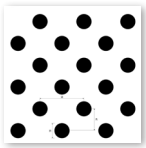
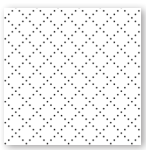
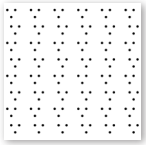
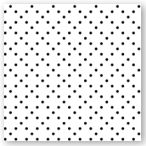
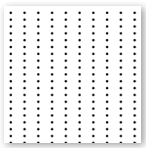
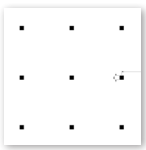
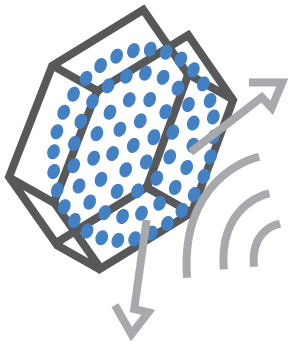
Image	Page #	Hole Pattern	Hole Size	Open Area	Max. Width
	197	WS10.1	0.16"	4.4%	39.4"
	43	WS3	0.05"	18.5%	63.0"
	160	WS23	0.79"	18.6%	18.3"
	169	WS24.5	0.07"	3.9%	39.5"

Image	Page #	Hole Pattern	Hole Size	Open Area	Max. Width
	299	WS9.21	0.12"	3.3%	63.0"
	187	WS27.2	0.12	7.4%	63.0
	249	WS5.2	0.11"	4.8%	39.4"
	200	WS10.4	0.16"	0.7%	39.4"

Acoustic Performance

Membrane systems incorporating perforated patterns naturally have an acoustic dampening effect because they allow sound waves to enter the ceiling or wall cavity to be absorbed by the materials from which they are made. Since there are so many patterns of varying hole size and density available, it is not possible to quantify the additional acoustic performance contributed by each pattern.

However, Velaria Systems is still able to provide a minimum known level of acoustic performance based on the other components of the system (as discussed in the Acoustics – Performance section of our website).



Comparison Tables

Non-Illuminated

Performance Level	Description	Noise Reduction Coefficient (NRC)
Standard	Single Layer of Acoustic Membrane	0.55
Enhanced	Single Layer of Acoustic Membrane + Acoustic Absorber	0.70
Ultra	Single Layer of Acoustic Membrane + Thick Acoustic Absorber	0.90
Basic	Single Layer of Non-acoustic Membrane	min. 0.20

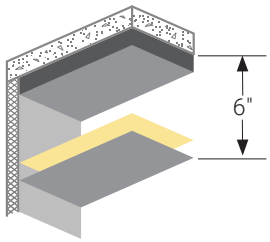
Illuminated

Performance Level	Description	Noise Reduction Coefficient (NRC)
Standard	Outer Layer Perforated Membrane + Inner Layer of Acoustic Membrane + Non-acoustic light sheet	0.70
Enhanced	Outer Layer Perforated Membrane + Inner Layer of Acoustic Membrane + Acoustic light sheet + Acoustic Absorber	0.85

PATTERNS / CEILINGS

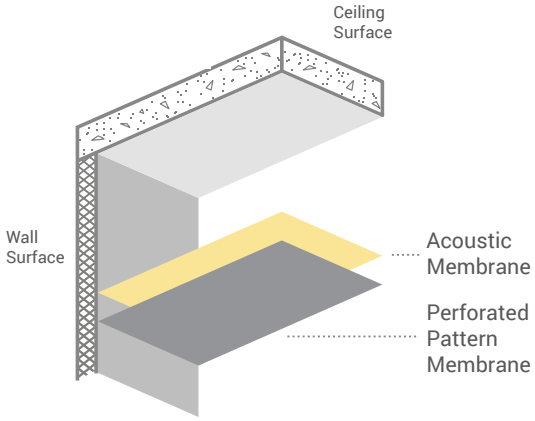
Non-Illuminated Configurations

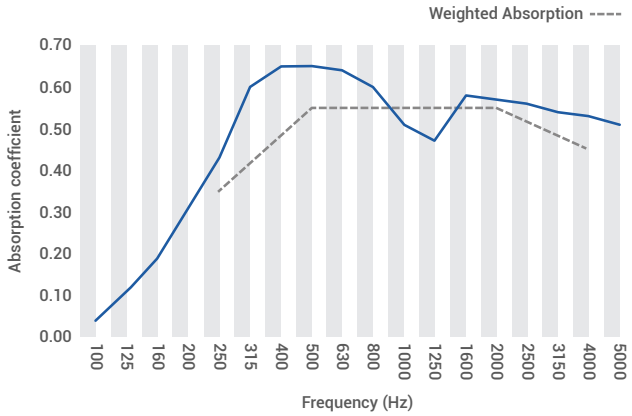
(based on typical 6" space between surface and outer membrane)



Standard

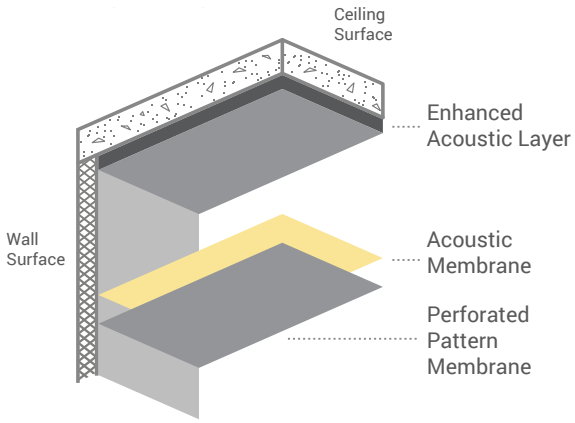
	Frequency (Hz)						Noise Reduction Coefficient	Weighted Sound Absorption Coefficient (ISO EN 11654)	Sound Absorption Class (ISO EN 11654)
	125	250	500	1000	2000	4000	NRC	α_w	Class
α_s	0.11	0.43	0.65	0.51	0.57	0.53	0.55	0.55	D

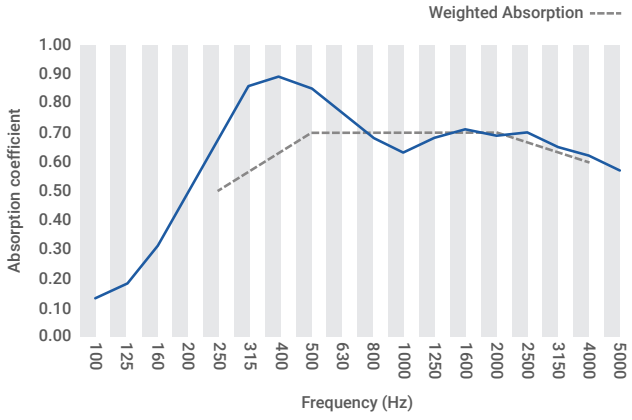




Enhanced

	Frequency (Hz)						Noise Reduction Coefficient	Weighted Sound Absorption Coefficient (ISO EN 11654)	Sound Absorption Class (ISO EN 11654)
	125	250	500	1000	2000	4000	NRC	α_w	Class
α_s	0.18	0.67	0.85	0.63	0.69	0.62	0.70	0.70	C

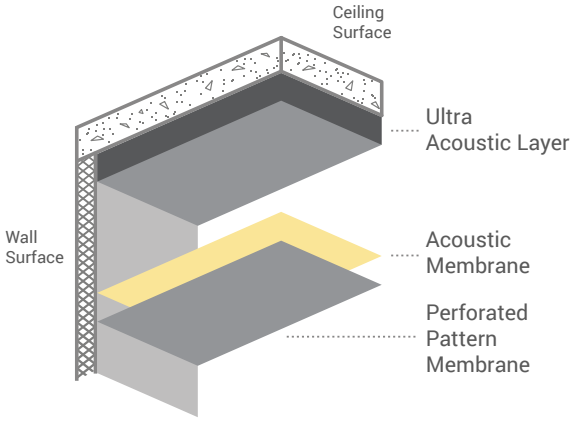


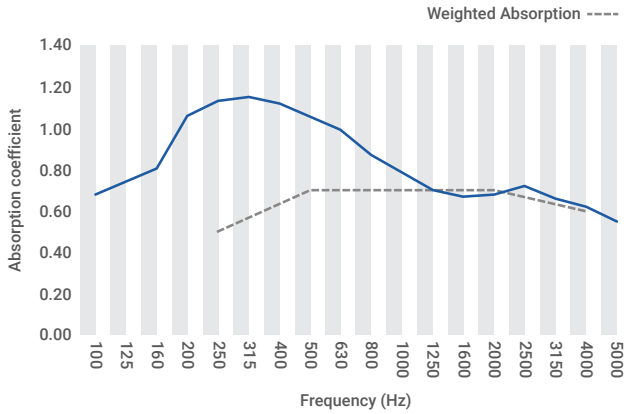


PATTERNS / CEILINGS

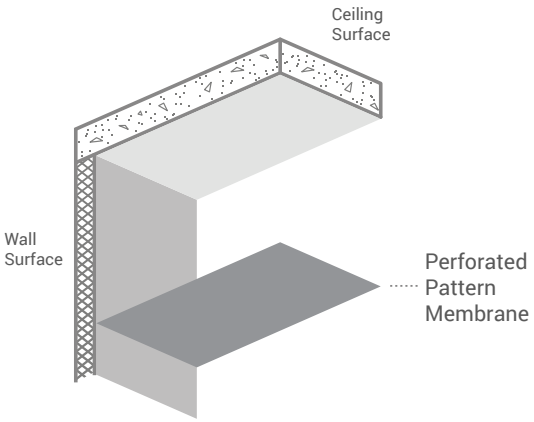
Ultra

	Frequency (Hz)						Noise Reduction Coefficient	Weighted Sound Absorption Coefficient (ISO EN 11654)	Sound Absorption Class (ISO EN 11654)
	125	250	500	1000	2000	4000	NRC	α_w	Class
α_s	0.74	1.13	1.05	0.79	0.68	0.62	0.90	0.75 (L, M)	C





Basic



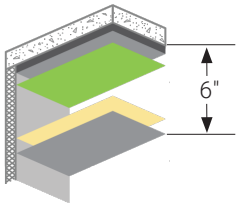
Test Data Unavailable due to variation in perforations for single layer

NRC = min. 0.20

PATTERNS / CEILINGS

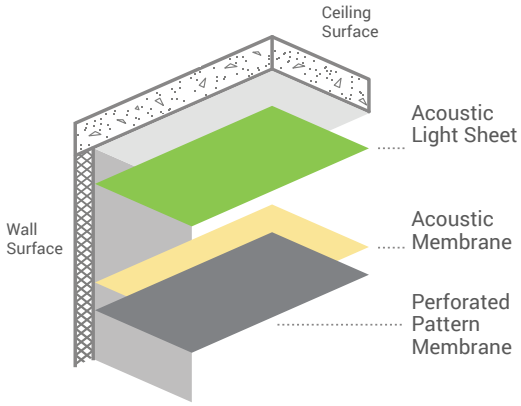
VELARIA SYSTEMS™

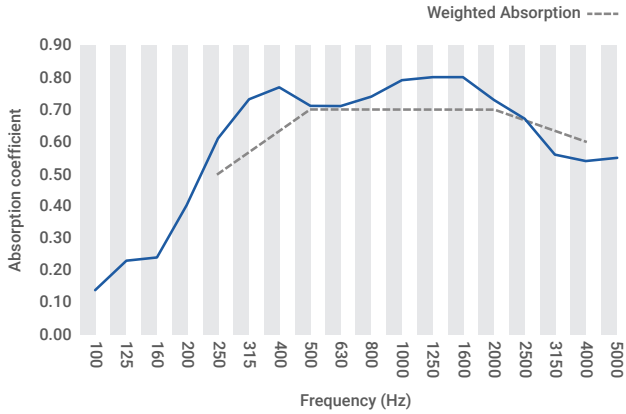
Illuminated Configurations



Standard

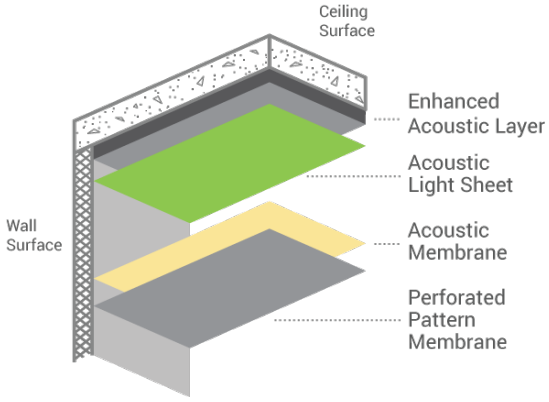
	Frequency (Hz)						Noise Reduction Coefficient	Weighted Sound Absorption Coefficient (ISO EN 11654)	Sound Absorption Class (ISO EN 11654)
	125	250	500	1000	2000	4000	NRC	α_w	Class
α_s	0.11	0.43	0.65	0.51	0.57	0.53	0.70	0.70	C

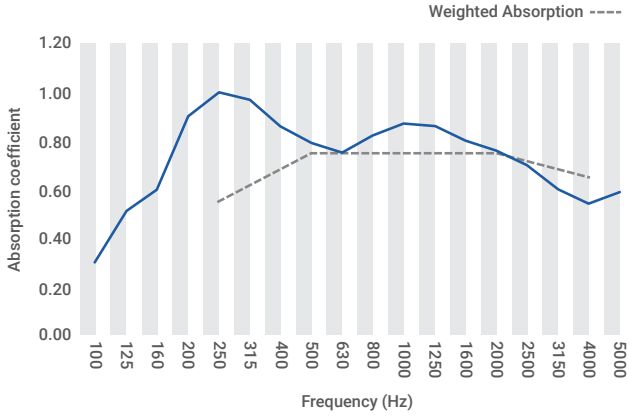




Enhanced

	Frequency (Hz)						Noise Reduction Coefficient	Weighted Sound Absorption Coefficient (ISO EN 11654)	Sound Absorption Class (ISO EN 11654)
	125	250	500	1000	2000	4000	NRC	α_w	Class
α_s	0.51	1	0.79	0.87	0.76	0.54	0.85	0.75(L)	C

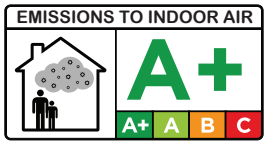




Fire Ratings

The fire rating for perforated pattern membranes will be the same as the non-perforated version. For example if you have chosen a glossy color as the perforated membrane with an ASTM E84 Class A fire rating is maintained.

Environmental



A+ rating for Volatile Organic Compounds (VOC) emissions

100% Recyclable

Additional Design Options Available

Backlighting

Accentuates your pattern with even illumination

Certifications

CE certificate of conformity
EN 14716 1488-CPD-0106/W

CE CERTIFICATE OF CONFORMITY CE: 1488-CPD-0106/W COMPLIANCE WITH STANDARD: EN 14716:2008 (system of assessment and verification of performance constancy 1)

How to Specify

Using our simple process, specifying a pattern membrane system is easy.

1. Select your color or image for the membrane that will have a pattern
2. Select your pattern from the nearly 400 options
3. Select your backing membrane color
4. Enhance the acoustic performance (or not)
5. Add backlighting (or not)
6. Contact Velaria Systems - In addition to your selections, we will need to know:
    - Size
    - Mounting Requirements (so we can select the correct profile to meet your requirement)*

*A wide selection of profiles is available to suit your specific requirements. Velaria Systems experts will recommend the best option to meet those requirements. No need for you to sort through a huge catalogue.