

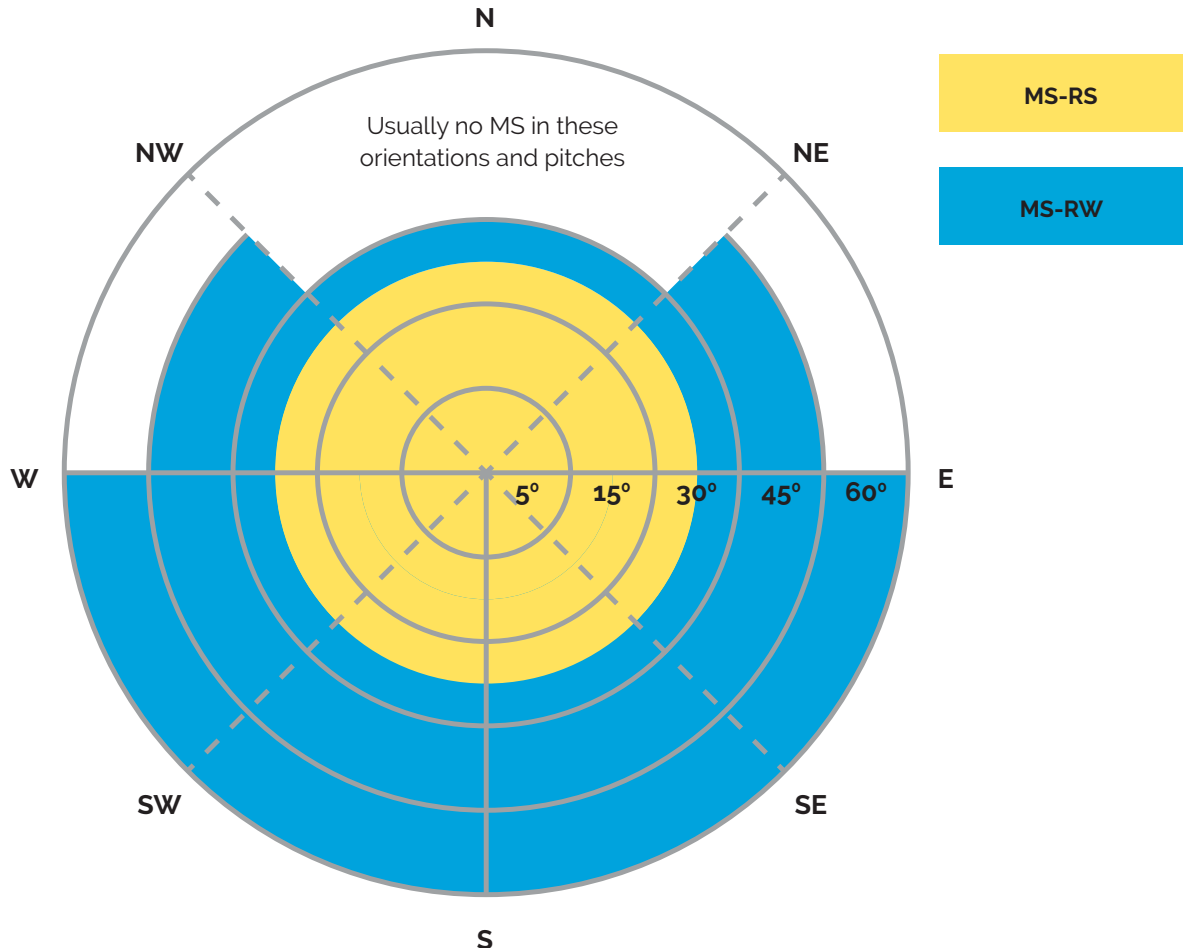
Selection Guideline for MicroShade® products

Copenhagen, Scandinavia – roof application

MicroShade® is a highly effective shading product containing microscopic shading lamellas. The shading efficiency depends on the incidence angle of the sun on the lamellas. When the sun is high in the sky during the summer, MicroShade® provides the strongest shading and during winter when the sun is low more heat is allowed into the building. Similarly, the shading efficiency also varies during the course of the day due to the different positions of the sun morning, noon and evening.

For roof applications two MicroShade® product types are commonly used – the MicroShade® MS-RS and MS-RW. The MS-RS is intended for use at lower pitches whilst the MS-RW is intended for higher pitches. MS-RW needs to be rotated at certain pitches and orientations and hence the lines may be horizontal or vertical. Therefore special caution must be taken in cases where several pitches and orientations are present in the same project using MS-RW. MS-RS can be freely rotated without any influence on the lines.

The obtained shading is best expressed using the effective solar transmission factor, called effective g-value – and with MicroShade® MS-RW or MS-RS glazing, this value depends on the orientation and pitch of the roof. The figure below shows which MicroShade® product is suitable at given pitches and directions.



¹Roof application means glazing mounted in a position between 0° (horizontally) to 60° tilt.

Key performance data for 2-layer glazing with MicroShade® MS-RS or MS-RW

The tables below indicate the light transmittance LT_0 and the mean effective g-value in the summer period (June to end of August) for two-layer MicroShade® glazing in Copenhagen.

MS-RS	U-value (W/m ² K)	LT_0	Effective g-value, summer period (June to end of August)							
			45° NE	90° E	135° SE	180° S	225° SW	270° W	315° NW	0° N
Orientation Pitch										
5°	1,12	0,49	0,19	0,19	0,20	0,20	0,20	0,19	0,19	0,18
15°			0,18	0,20	0,21	0,22	0,21	0,20	0,18	0,16
30°			0,18	0,22	0,23	0,23	0,23	0,22	0,18	0,15
45°			-	-	-	-	-	-	-	-
60°			-	-	-	-	-	-	-	-

MS-RW	U-value (W/m ² K)	LT_0	Effective g-value, summer period (June to end of August)							
			45° NE	90° E	135° SE	180° S	225° SW	270° W	315° NW	0° N
Orientation Pitch										
5°	1,12	0,33	-	-	-	-	-	-	-	-
15°			-	-	-	-	-	-	-	-
30°			0,19	0,22	0,23	0,24	0,23	0,22	0,19	0,18
45°			-	0,22	0,22	0,21	0,22	0,22	-	-
60°			-	0,21	0,20	0,18	0,20	0,21	-	-

- 1) The optical and thermal data above are valid for glazing structure: 4 mm Heat tempered float+ MS – 16 mm argon – 4 mm lowE.
- 2) The performance of the MicroShade® system depends on the glazing structure – for exact information about your glazing, please contact MicroShade® support – support@microshade.dk
- 3) U-value is calculated according to EN 673:2011.
- 4) Effective g-value calculated according to EN 410:2011.

Key performance data for 3-layer glazing with MicroShade® MS-RS or MS-RW

The tables below indicate the light transmittance LT_0 and the mean effective g-value in the summer period (June to end of August) for two layer MicroShade® glazing in Copenhagen.

MS-RS	U-value (W/m ² K)	LT ₀	Effective g-value, summer period (June to end of August)							
			45° NE	90° E	135° SE	180° S	225° SW	270° W	315° NW	0° N
Orientation Pitch										
5°	0,72	0,43	0,14	0,15	0,15	0,16	0,16	0,15	0,14	0,14
15°			0,14	0,15	0,17	0,17	0,17	0,16	0,14	0,12
30°			0,14	0,17	0,18	0,19	0,18	0,17	0,14	0,11
45°			-	-	-	-	-	-	-	-
60°			-	-	-	-	-	-	-	-

MS-RW	U-value (W/m ² K)	LT ₀	Effective g-value, summer period (June to end of August)							
			45° NE	90° E	135° SE	180° S	225° SW	270° W	315° NW	0° N
Orientation Pitch										
5°	0,72	0,29	-	-	-	-	-	-	-	-
15°			-	-	-	-	-	-	-	-
30°			0,14	0,17	0,19	0,19	0,19	0,17	0,14	0,12
45°			-	0,18	0,18	0,17	0,17	0,18	-	-
60°			-	0,17	0,15	0,14	0,16	0,17	-	-

- 1) The optical and thermal data above are valid for glazing structure: 4 mm Heat tempered float + MS – 12 mm argon – 4 mm lowE – 12 mm argon – 4 mm lowE
- 2) The performance of the MicroShade® system depends on the glazing structure – for exact information about your glazing, please contact MicroShade® support – support@microshade.dk
- 3) U-value is calculated according to EN 673:2011.
- 4) Effective g-value calculated according to EN 410:2011.