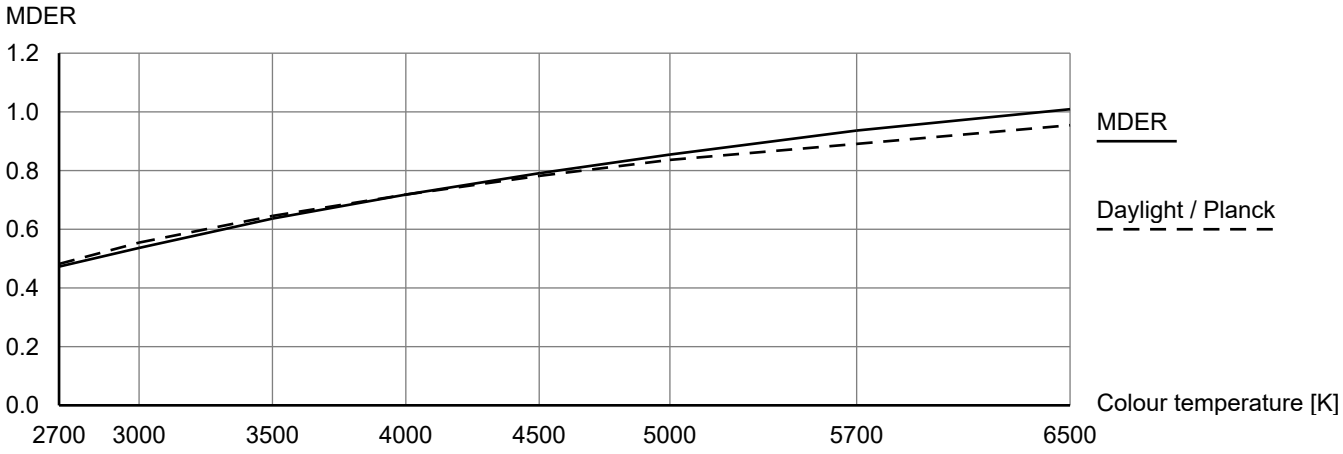
Melanopic LED action factors

To convert photopic (visual) evaluation parameters into melanopic (biological) evaluation parameters (according to CIE S 026 / E: 2018, DIN SPEC 5031-100).

CRI	Colour temperature	Luminaire luminous flux	MNER	MDER	MEER
>90	2700 K	4660 lm	1.03	0.48	0.52
	3000 K	4660 lm	1.04	0.55	0.60
	3500 K	4660 lm	1.03	0.64	0.71
	4000 K	4660 lm	1.00	0.71	0.78
	4500 K	4660 lm	0.99	0.77	0.85
	5000 K	4660 lm	0.97	0.82	0.91
	5700 K	4660 lm	0.96	0.89	0.98
	6500 K	4660 lm	0.95	0.95	1.04

CRI: Colour Rendering Index min.
Colour temperature: Values according to ANSI
Luminaire luminous flux: Luminaire rated luminous flux
MNER: Melanopic Natural Efficacy Ratio
≙ mv, mel, nat (conversion factor relative to the natural reference light, according to color rendering calculation, at equal color temperature)
MDER: Melanopic Daylight Efficacy Ratio, CIE S 026/E:2018
≙ mv, mel, D65 (DIN SPEC 5031-100, conversion factor relative to the type of D65 light, to calculate the melanopic daylight equivalent illuminance)
MEER: Melanopic Equal-energy Efficacy Ratio, CIE S 026/E:2018
≙ amel,v (DIN SPEC 5031-100, melanopic action factor)
≙ R (equivalent Melanopic Lux Metric, Melanopic Ratio)
suitable for calculations according to WELL Building Standard v2 (L03)
Daylight / Planck: As a natural reference light source, daylight is used from a color temperature of 5000K upwards, in the area below a Planck spectrum is used.



Note for the lighting design:
See supplement on how to calculate melanopic lighting effects or contact our lighting solution planners.
Supplement: https://www.zumtobel.com/com-en/knowledge.html#lightingtechnology

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