Road and urban luminaires

AstroDIM

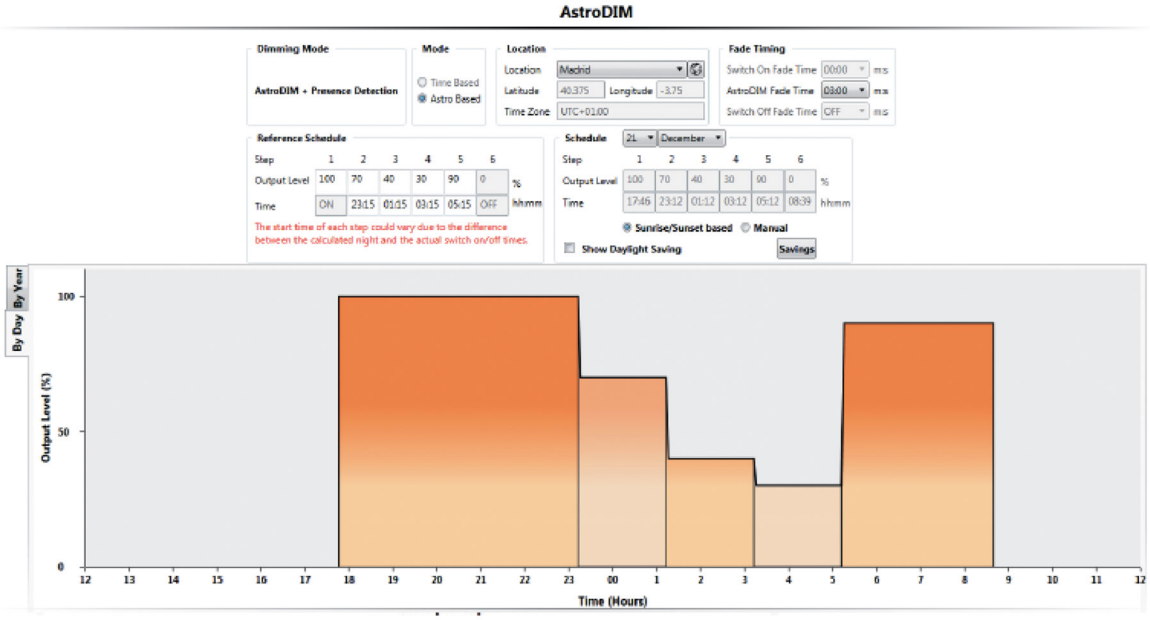
Automatic dimming via an integrated timer (no real - time clock): Five independent dimming levels and zones can be set with the Tuner4TRONIC® software. Brightness variation is possible in combination with an external presence sensor.

Astro-based mode

In this mode, the LED driver performs a dimming profile based on the daily power-on and power-off times. The dimming schedule is adapted according to the length of the night. The Tuner4TRONIC® software calculates the annual average middle of the night based on the theoretical sunrise and sunset times, which are related to the location selected in the software. Based on this average middle of the night, five independent dimming periods can be defined in the reference schedule. The minimum length of one dimming period has to be longer than the AstroDIM fade time. Valid time values can be set between 12:00 pm and 11:59 am. If less than five output levels need to be performed, two sequenced levels have to be set to the same value.
Note:
The maximum duration of one step is limited to ≤ 8 hours. The defined dimming profile is already performed after the second power-off/on cycle after programming.

Presence detection in AstroDIM mode

In the "AstroDIM + presence detection" dimming mode, it is possible to override the dimming profile of AstroDIM by shortening the 0 -10V interface with an external relay triggered by a sensor (e.g. motion sensor or presence sensor). If the 0 -10V interface is shortened, the output level is set to 100%.
Note:
The relay should be suitable for small currents (~1 mA for the 0 -10V interface) and also provide the sufficient insulation to maintain the insulation level between the primary and secondary side of the LED driver.



Possible scenarios for specification of tender requirements

M - Mandatory O - Optional	Description of parameter	DKS 352 35 Standart	DKS 352 40 Plus	DKS 352 60 Standart	DKS 352 60 Plus	DKS 352 80 Standart	DKS 352 80 Plus
Functionality							
M	Type of light diagram	Asymmetric for roads	Asymmetric for roads	Asymmetric for roads	Asymmetric for roads	Asymmetric for roads	Asymmetric for roads
M	System nominal luminous flux during lifetime, lm minimum	3600 lm	5600 lm	6100 lm	8400 lm	8300 lm	10800 lm
O	Dimming range, % of max luminous flux, not more %	10%	10%	No	10%	No	10%
M	Light distribution in accordance to EN 13032-1, supplier could be asked to supply photometric files in electronic form to check Luminary suitability for particular project	Yes	Yes	Yes	Yes	Yes	Yes
O	Driver control interface	PWM, 1-10V	PWM, 1-10V	No	PWM, 1-10V	No	PWM, 1-10V
O	Parameters readable from driver in diagnostic/maintenance mode (for DALI interface)	No	No	No	No	No	No
M	Correlated color temperature (CCT), °K	4750 - 5250 (neutral white)	4750 - 5250 (neutral white)	4750 - 5250 (neutral white)	4750 - 5250 (neutral white)	4750 - 5250 (neutral white)	4750 - 5250 (neutral white)
O	Difference of color temperatures in one series 50% of deviation defined in accordance to ANSI C78.377A requirements	Yes	Yes	Yes	Yes	Yes	Yes
M	Color rendering index (CRI)	≥ 70	≥ 70	≥ 70	≥ 70	≥ 70	≥ 70
O	"Gentle switch-on" function	No	No	No	No	No	No
Construction, materials and finishing							
M	Type of light source	LED module	LED module	LED module	LED module	LED module	LED module
M	Housing material	High-pressure die cast aluminum, coated	High-pressure die cast aluminum, coated	High-pressure die cast aluminum, coated	High-pressure die cast aluminum, coated	High-pressure die cast aluminum, coated	High-pressure die cast aluminum, coated
M	Gasket	Silicone rubber, heat resistant	Silicone rubber, heat resistant	Silicone rubber, heat resistant	Silicone rubber, heat resistant	Silicone rubber, heat resistant	Silicone rubber, heat resistant
M	Optics cover	Extra clear flat glass cover with UV cut, PC lenses	Extra clear flat glass cover with UV cut, PC lenses	Extra clear flat glass cover with UV cut, PC lenses	Extra clear flat glass cover with UV cut, PC lenses	Extra clear flat glass cover with UV cut, PC lenses	Extra clear flat glass cover with UV cut, PC lenses
M	Optics type	Multiple	Multiple	Multiple	Multiple	Multiple	Multiple
M	Light source cooling system	Passive, no fan	Passive, no fan	Passive, no fan	Passive, no fan	Passive, no fan	Passive, no fan
M	The driver positioned inside the luminary	Yes	Yes	Yes	Yes	Yes	Yes
M	Mechanical resistance (vandal proof) for housing with bracket and optical cover, not less	IK10	IK10	IK10	IK10	IK10	IK10
M	Ingress protection class for whole luminary	IP66	IP66	IP66	IP66	IP66	IP66
O	Ingress protection class (for other parts of luminaire) for light source or light source compartment, not less	IP66	IP66	IP66	IP66	IP66	IP66
O	Ingress protection class (for other parts of luminaire) for driver or driver compartment, not less	IP66	IP66	IP66	IP66	IP66	IP66
O	Breathing device	Yes	Yes	Yes	Yes	Yes	Yes
O	Space for installation of 3-rd parties control modules	Depends on the size of modules	Depends on the size of modules	Depends on the size of modules	Depends on the size of modules	Depends on the size of modules	Depends on the size of modules
Quality & standards							
M	Quality standards of manufacturer	ISO 9001	ISO 9001	ISO 9001	ISO 9001	ISO 9001	ISO 9001

M - Mandatory O - Optional	Description of parameter	DKS 352 35 Standart	DKS 352 40 Plus	DKS 352 60 Standart	DKS 352 60 Plus	DKS 352 80 Standart	DKS 352 80 Plus
Electrical parameters							
M	Mains voltage, V	220 V	220 V	220 V	220 V	220 V	220 V
M	Mains voltage safety (AC)	170V/280V	120V/277V	198V/264V	120V/277V	198V/264V	120V/277V
M	Driver efficiency @ nominal power (no dimming)	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90
M	Isolation class	I	I	I	I	I	I
M	Line frequency, Hz	50	50	50	50	50	50
M	Power factor (Cos ϕ) w/o dimming, not less	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9
M	Inrush current peak /TFWHM (Full width half maximum)	49 A@160µs 277V	49 A@160µs 277V	50 A@270µs 277V	32 A@50µs 277V	50 A@270µs 277V	32 A@50µs 277V
M	Surge protection (a) For class II (b) For class I	(b) Differential / common mode 2kV	(b) Differential / common mode 6kV	(b) Differential / common mode 4kV	(b) Differential / common mode 6kV	(b) Differential / common mode 2kV	(b) Differential / common mode 6kV
M	Power consumption, W maximum:	35 W	40 W	63 W	60 W	80 W	80 W
M	Change of power consumption during lifetime, % maximum:	20 %	CLO function	20 %	CLO function	20 %	CLO function
Operating parameters							
M	Light source lifetime @ Ta = 25°C, 95% survivors, hours not less	50 000	80 000	50 000	80 000	80 000	80 000
M	Driver lifetime @ Ta = 25°C, 95% survivors, hours not less	50 000	80 000	50 000	80 000	40 000	80 000
M	Light source lumen depreciation factor @ Ta = 25°C @ lifetime, not less	0,7 (L70)	0,8 (L80)	0,7 (L70)	0.8 (L80)	0.7 (L70)	0,8 (L80)
M	Windage area Cx, m2 not more	0.18	0.18	0.18	0.18	0.18	0.18
M	Net weight per piece, kg not more	7 kg	7 kg	7 kg	7 kg	7 kg	7 kg
M	Operating temperature range with nominal functionality and nominal electrical parameters	-25°C ÷ +25°C	-25°C ÷ +25°C	-25°C ÷ +25°C	-25°C ÷ +25°C	-25°C ÷ +25°C	-25°C ÷ +25°C
M	Survival temperature range with decreased functionality – dimming up to 30%	-40°C ÷ +40°C	-40°C ÷ +50°C	-40°C ÷ +40°C	-40°C ÷ +50°C	-40°C ÷ +40°C	-40°C ÷ +50°C
M	Lifetime of passive parts of luminary, years not less	15	15	15	15	15	15
O	Temperature protection *Optionally light source with programmable decrease of light output The driver shall include a NTC function with a thermal sensor on the LED module for measuring temperature all time and adapt the level of current to ensure long lifetime of the LED.	Active temperature protection of driver	Active temperature protection of driver*	Active temperature protection of driver	Active temperature protection of driver*	Active temperature protection of driver	Active temperature protection of driver*
Installation and maintenance							
M	Installation on a pole	60 mm	60 mm	60 mm	60 mm	60 mm	60 mm
O	Housing opening	With tools	With tools	With tools	With tools	With tools	With tools
M	Service & repairing	Modular construction, All electronic modules replaceable on a site without special tools	Modular construction, All electronic modules replaceable on a site without special tools	Modular construction, All electronic modules replaceable on a site without special tools	Modular construction, All electronic modules replaceable on a site without special tools	Modular construction, All electronic modules replaceable on a site without special tools	Modular construction, All electronic modules replaceable on a site without special tools
Environmental protection							
M	Recyclability	"No-Glue" construction with full recyclability	"No-Glue" construction with full recyclability	"No-Glue" construction with full recyclability	"No-Glue" construction with full recyclability	"No-Glue" construction with full recyclability	"No-Glue" construction with full recyclability
M	Preventing of pollution with light	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution	The flat glass shall guarantee 0 candelas at 90° to obtain dark sky preservation and to reduce light pollution
M	Manufacturer is certified for environmental standard ISO 14001-2004	No	No	No	No	No	No

OUTDOOR LUMINAIRES