

PWM

Characteristics:

Main function 1 :

The ISL leveler PWM adjusts the headlamp light beam vertical position by translation of a shaft. Its command signal is PWM allowing direct operation from vehicle interior screen. It uses a DC motor driven by a circuit board (pcba) comparing the command signal with an internal voltage ratio given by a feed-back potentiometer.

Main function 2 (option) :

A manual aiming device, placed at the front of the actuator, allows the initial aiming of the headlamp.



Performance:

Performance (typical, other requirements can be passed)

■ Electrical slope	12.5% / mm. Option: -12.5 inverted Custom slopes are possible.
■ Stroke	4.8 mm+/-0.2 between 20% duty cycle and 80%
■ Nominal axial force	10 N (Max force = 50N at ambient temperature)
■ Température range of operation	-40° to +105°c
■ Noise level	60 dBA max (with micro at 400mm)
■ Speed	Typical 1.5 mm/s (at 13.5V, room T°, 10N)
■ Typical / Max current	100 mA (13.5V 23° 10N) / 800 mA (Stall 23°)
■ Axial Assembly strength	>250 N for headlamp reflector assembly by clipping
■ Axial play	0.15 mm max (10N) 0.2mm with aiming
■ Weight	55g
■ Min step between positions	6% duty cycle = 0.48mm
■ Vibration	To be tested on headlamp, reflector weight max 1kg with gravity center distance 30mm max from fixation plane
■ Durability	10 000 full strokes and return between -40 and +105° (load 10N) Use for autostatic function is possible: Max Nr of movements 150 000 balanced between small and big movements.

Electrical connexion and control

■ Max Input PWM duty cycle range	16% to 86%
■ Voltage Nominal / Range	13.5V / 9 to 16 V
■ Connector	JST S3B-EH
■ Solder type	SAC Leadfree
■ Position sensor	Linear vertical potentiometer
■ Connexion cut and short circuit	Stays in position

Design features (see drawing for details)

■ Fixation on headlamp	By bayonet 3 lugs Φ 22mm. Option: bracket for screws
■ Sphere diameter	Φ 8 or 10mm
■ Location	Internal to headlamp on top or bottom position
■ Dimensions	61 x 32 x 32 mm
■ Protection	IP 40
■ Manual aiming	Option, at the front of leveler, with stroke end protection by clutch

Validations (see test plans and conformity matrix for details)

■ EMC	AML or car maker: please consult us for specific case
■ Environment	AML or car maker: please consult us for specific case