

Characteristics:

Main function 1:

The ESL leveler adjusts the headlamp light beam vertical position by translation of a shaft. Its command signal is an analogic voltage ratio sent by a dashboard switch for manual leveling or a calculator for automatic static leveling. The ESL has a DC motor driven by a circuit board comparing the command signal with an internal voltage ratio given by a feedback potentiometer.

Main function 2:

The ESL has a manual aiming for vertical adjustment of the headlamp. It is protected by a stroke-end clutch.



Performance:

Performance (typical, other requirements can be passed)

Electrical stroke	5 mm+/-0.2 between 20 and 80% command ratios
Manual stroke	4mm min up and down with clutch
Nominal axial force	10 N (Max force = 50N at ambient temperature)
Temperature range of operation	-40° to +85°
Noise level	60 dBA (with micro at 400mm)
Speed	1 mm /s min (at 13.5V, room T°, 10N)
Typical / Max current	150 mA (13.5V 23°C 10N) / 800 mA (Stall 23°C)
Axial Assembly strength	>250 N for headlamp reflector assembly by clipping
Axial play	0.2 mm max (10N 23°C)
Weight	65g
Stall protection	2h (12V, room temperature)
Vibration	To be tested on headlamp, reflector weight max 1kg with gravity center distance 30mm max from fixation plane
Durability	Max Nr of movements 150 000 balanced between small and big movements

Electrical connection & control

Max Input voltage ratio range	18% (in) to 90% (out) of low beam voltage
Voltage range / Nominal	10 to 16V / 13.5V
Connection	Yazaki Eh 3 pins 0.64x0.64
DC motor Driver	Infineon TLE 4206
Extremum supply voltages	18 V / 1h
Solder	Leadfree
EMC	To be checked according to car maker specifications
Slope	12% / mm
Connection cut and short cut to power/ground	Stays in position
Min step between positions	5% voltage ratio

Design features (see drawing for details)

Fixation on headlamp	By bayonet 4 lugs Φ 22mm, locking angle 16.5°
Sphere diameter	Φ 8mm
Location	External to headlamp on top or bottom position
Manual aiming interface	Hex 6mm or cross Phillips Nr2
Dimensions	66 x 52 x 38 mm
Protection	IP 66, 100% line control under 50mbar, air leak 10cc/mn max