

Characteristics:

The IDL is a high performance stepper motor for LED headlamps dynamic leveling.

Its modular concept allows an easy adaptation to headlamp interfaces and angle requirements.

Main function :

The IDL leveler adjusts the headlamp light beam vertical position by translation of a shaft. The motor is a linear bipolar stepper driven by the headlamp control unit.



Performance:

Performance (typical, other requirements can be passed)

■ Electrical stroke (mm)	7, 10.15 or 12mm+/-0.35 between hard stops.
■ Minimal axial force	20N at -40°C with recommended driving parameters
■ Nominal / Maximal axial force	15 N (Max force = 90N at 23°C)
■ Temperature range of operation	-40° to +120°C
■ Noise level	45 dBA max (with micro at 500mm)
■ Speed	10 mm /s typical (at 300 Full Step/s)
■ Initialization	In or out for top or bottom position on headlamp
■ Positioning accuracy (before/after life test)	+/-0.15mm / +/-0.20mm
■ Positioning accuracy (electric)	+/-0.07mm (15N load push or pull)
■ Axial Assembly strength max	250 N for headlamp reflector assembly by clipping (at in stop)
■ Axial play max (mm) (before/after life test)	0.15 / 0.20 (15N)
■ Weight (g)	100
■ Durability	> 10 million movements (dynamic leveling / motorway / high beam up)

Electrical connexion and control

■ Voltage range / Nominal	8 to 16V / 13.5V
■ Connexion	5 pins custom : fits with JST XA or Eh : 2 bobbins + ground
■ Connexion direction	Front or rear
■ Resolution	30 steps / mm
■ Motor type	Bipolar Stepper motor diam 36mm
■ Duty cycle	40% max @Tmax +120°C
■ Typical driving parameters	See drawing

Design features (see drawings for details)

■ Fixation on headlamp	By bayonet 3 lugs Φ 22mm or by side screws or by flange
■ Sphere diameter (mm)	8 or 10
■ Location	Internal to headlamp on top or bottom position
■ Protection	IP 40
■ Options (see corresponding datasheets)	Lin bus interface "IDL Lin" / Manual aiming "IDL Mag3"

