BRIEF INFORMATION
90 MM LED MODULE L4060

→ For diverse applications and the highest demands
→ Ongoing expansion of the 90 mm module range
→ Maximum design and techological freedom thanks to modular system
→ More illumination and safety with innovative LED technology

PRODUCT FEATURES

→ **Striking design**
Ring-shaped homogeneous daytime running light/position light

→ **Conversion**
Existing halogen versions can be easily converted to LED modules (compatible installation solutions)

→ **90 mm LED upgrade**
All lighting functions available with LED technology for maximum design life

→ **Design**
40 x 60 mm polycarbonate lenses for varying light distribution as fog light, high beam and fog light with cornering light

→ **Housing**
Sturdy die-cast aluminum housing with integrated electronics

→ **Resistant to stone chippings**
Polycarbonate cover lens

→ **Weight saving**
Polycarbonate lens

co ach&bus sustainable mobility

Award for our 90 mm L4060 LED modules at Busworld 2013

FURTHER RANGE ADVANTAGES

Millions of 90 mm module headlights prove their worth daily under tough conditions. Our range currently includes a total of 5 series with an extraordinary number of varieties (Classic, Performance, Premium, L 70 and L4060). The new L4060 LED product group gives designers new degrees of freedom, made possible by a new form of lens (40 x 60 mm) as well as the colored lens openings!

Give your vehicle a striking look!
The design of this new headlight is very compact, but allows for three light functions to be realized in one module without additional electronics.

Drive 20 times around the world without needing to replace the bulb.
→ Bulb replacement has become a thing of the past. No maintenance due to passive cooling.
→ No moving parts are necessary (e.g. a fan)
→ Low fuel consumption and reduced CO_2 emissions due to the low power consumption of max. 20 W on high beam
→ LED headlights improve safety. The light color is similar to daylight, improving vision and ease of driving (drivers do not tire as quickly)
→ Multi-voltage (12 V, 24 V)
→ ECE and SAE type approval

Upgrade to LED
HELLA is currently the only provider that can offer you conversion to LED light technology for all 90 mm single and multifunctional modules in halogen and xenon.

Main LED light functions

| Low beam | High beam | Low beam and high beam | High beam and daytime running light | High beam and indicator |

Auxiliary LED light functions

| Fog light | Fog light and cornering light | Fog light and daytime running light | Daytime running light |

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90 mm configurator:
www.hella.com/90mm-modules

This tool shows you the options for equipping or upgrading a vehicle with 90 mm LED modules. See shots from Europe's biggest light testing facility and compare the light distribution of halogen and LED modules, in order to help you make the right choice for your application.

TECHNICAL DETAILS

Technical Data

Operating voltage	Multi-voltage 9 – 33 V
Functions	High beam, fog light, daytime running light, position light and cornering light
Electrical connection	Integrated 4-pin FEP plug; adaptation to DEUTSCH plug available
Specification*	HELLA Norm N67101 1.2 Car Premium / 3.2 Caravan Premium / 4.1 Bus / 6.1 Truck / 7.2 Agro Plus

| Type approval	ECE	SAE
High beam	ECE-R112 S01	SAE J566, FMVSS108
Fog light	ECE-R19 F3 Serie 04	SAE J583
Daytime running light	ECE-R87	SAE J2087
Position lamp	ECE-R7	SAE J222
Cornering light	ECE-R119	SAE J852

* A HELLA 3A fuse must be used for all LED headlights. A fuse of >3A is not sufficient to safely interrupt the power supply in the event of a fault. In the case of unknown protection, an external safety switch (e.g. 8JD 743 557-021) must always be used. If water gets in, incorrect protection can lead to damage ranging from melting to burning of the product.

Technical Drawings

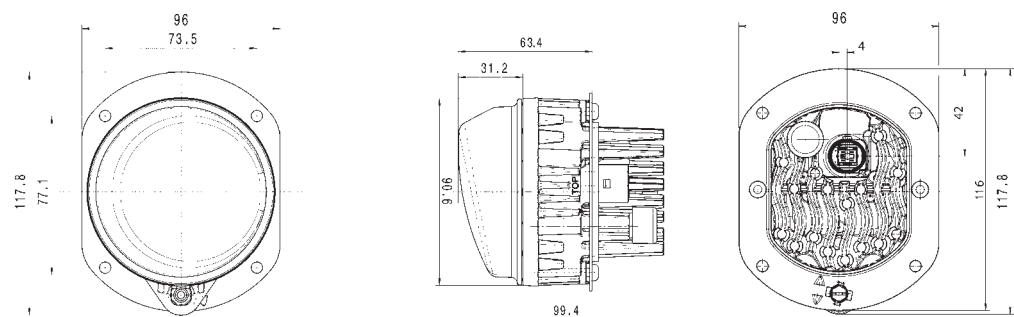**90 mm: L4060 high beam/fog light**
With pre-mounted carrier frame
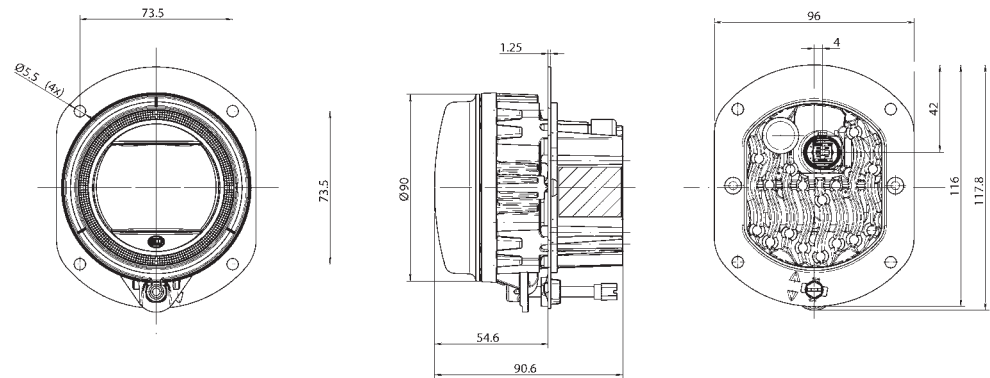
90 mm: L4060 high beam
Performance module mount for 1:1 conversion of existing halogen versions
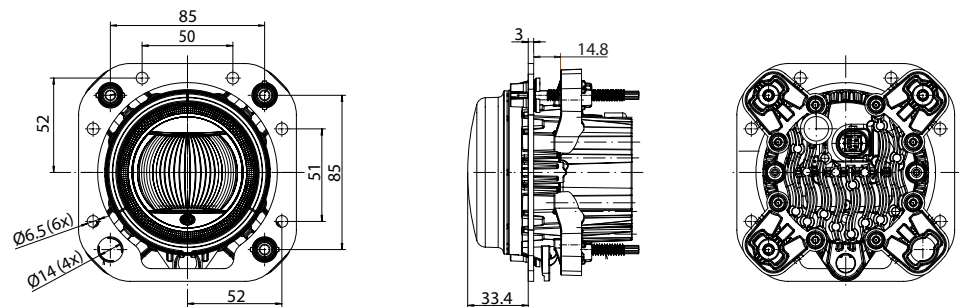
90 mm: L4060 fog light and cornering light
With pre-mounted carrier frame

INSTALLATION
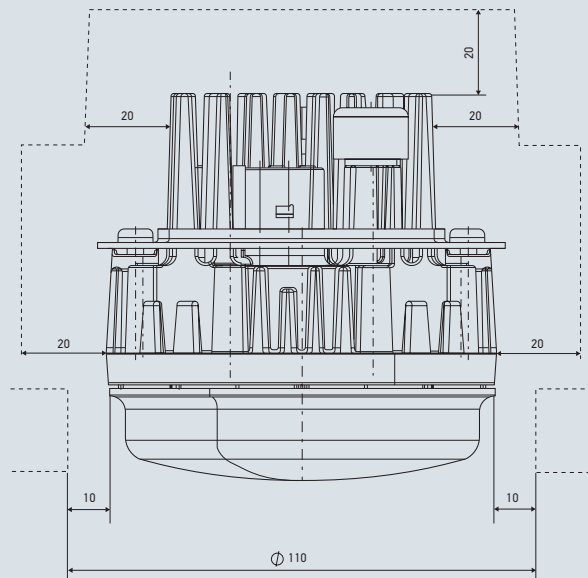
* Minimum installation distance from vehicle body:
1) 10 mm all round (at the cover lens)
2) 20 mm all round (at the housing)

The modules are designed to work without a fan since passive cooling and adherence to the minimum installation distances ensures perfect thermal conditions for operation.

APPLICATION EXAMPLES

RANGE OVERVIEW

Product photos	Description	Mounting concept	Part number
	LED spotlight L4060 Module headlight with 40 x 60 mm polycarbonate lens, Sturdy die-cast aluminum housing, Silver design cover, (black design cover on request)	Pre-mounted carrier frame	**1F0 011 988-021**
		Performance mount	**1F0 011 988-121**
	LED spotlight L4060, with daytime running light and position light Module headlight with 40 x 60 mm polycarbonate lens, Sturdy die-cast aluminum housing Silver design cover, (black design cover on request)	Pre-mounted carrier frame	**1F0 011 988-031**
		Performance mount	**1F0 011 988-131**
	LED spotlight L4060 with indicator Module headlight with 40 x 60 mm polycarbonate lens, Sturdy die-cast aluminum housing Silver design cover, (black design cover on request)	with pulse generator Pre-mounted carrier frame	**1F0 011 988-081***
		with pulse generator Performance mount	**1F0 011 988-181***
		without pulse generator Pre-mounted carrier frame	**1F0 011 988-071***
		without pulse generator Performance mount	**1F0 011 988-171***
	LED fog light L4060 Module headlight with 40 x 60mm polycarbonate lens, Sturdy die-cast aluminum housing Silver design cover, (black design cover on request)	Pre-mounted carrier frame	**1N0 011 988-001**
	LED fog light L4060, with daytime running light and position light Module headlight with 40 x 60mm polycarbonate lens, Sturdy die-cast aluminum housing Silver design cover, (black design cover on request)	Pre-mounted carrier frame	**1N0 011 988-011**
	LED fog light L 4060, with cornering light Module headlight with 40 x 60mm polycarbonate lens, Sturdy die-cast aluminum housing Silver design cover, (black design cover on request)	Pre-mounted carrier frame on the right	**1N0 011 988-061**
		Pre-mounted carrier frame on the left	**1N0 011 988-051**

* Available from May 2014

ACCESSORIES

	Part number	Low beam 010 820	Low beam and high beam 010 820	Fog light 011 988-001	Fog light + daytime running light + position light 011 988-011	Fog light + bend light 011 988-051/061	High beam 011 988-021	High beam 011 988-121	High beam + daytime running light + position light 011 988-031	High beam + daytime running light + position light 011 988-131	High beam + turn indicator (with impulse) 011 988-081	High beam + turn indicator (with impulse) 011 988-181	High beam + turn indicator (without impulse) 011 988-071	High beam + turn indicator (without impulse) 011 988-171
Carrier frame														
Carrier frame, black	**9AH 169 580-011**	xx	xx	–	–	–	–	xx	–	xx	–	xx	–	xx
Surplus supply, LED AMP Supersealed, 3-pin														
Housing, 10 units	**8JA 746 184-032**	x	x	–	–	–	–	–	–	–	–	–	–	–
Socket contact, 50 units	**8KW 744 837-002**	x	x	–	–	–	–	–	–	–	–	–	–	–
Individual conductor seal, 50 units	**9GD 746 185-002**	x	x	–	–	–	–	–	–	–	–	–	–	–
Surplus supply, LED FEP 4-pin plug														
Housing	**8JA 202 231-002**	–	–	x	x	x	x	x	x	x	x	x	x	x
Blade contact, 50 units	**8KW 863 933-013**	–	–	x	x	x	x	x	x	x	x	x	x	x
Individual conductor seal 0.35 – 0.5 mm² or	**8KW 863 952-022**	–	–	x	x	x	x	x	x	x	x	x	x	x
individual conductor seal 0,75 mm²	**8KW 863 952-012**	–	–	x	x	x	x	x	x	x	x	x	x	x
Blind plug, 50 units	**9GB 863 952-002**	–	–	x	–	x	x	x	–	–	x	x	x	x
Surplus supply, LED DEUTSCH 4-pin DEUTSCH plug (together with adapter cable see[1])														
Male connector housing, 10 units	**8JA 201 022-042**	–	–	x	x	x	x	x	x	x	x	x	x	x
Interlock / wedgelock, 10 units	**9NB 201 024-042**	–	–	x	x	x	x	x	x	x	x	x	x	x
Contact sleeve 0.5 – 1.5 mm², 50 units	**9NB 201 025-112**	–	–	x	x	x	x	x	x	x	x	x	x	x
Blind plug, 50 units	**9NB 201 026-012**	–	–	x	–	x	x	x	–	–	x	x	x	x
Set packaging (1 x plug housing, 1 x interlock / wedgelock, 5 x contact sleeves and 3 x blind plugs)	**8JA 201 022-821**	–	–	x	x	x	x	x	x	x	x	x	x	x
Headlight range adjustment systems														
Headlamp leveling system	**6NM 007 282-221**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Bracket for right-side mounting of actuator	**8HG 138 619-007**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Bracket for left-side mounting of actuator	**8HG 138 620-007**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Headlight cleaning systems														
Headlight cleaning system set with 4 fixed nozzles	**8WS 008 549-001**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Headlight cleaning system set with 2 telescoping single nozzles	**8WT 008 549-101**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Headlight cleaning system set with 2 telescoping double nozzles	**8WT 008 549-201**	xx	xx	–	–	–	–	–	–	–	–	–	–	–
Bend lighting accessories														
Lead for LED module, bend lighting control unit, 1 unit	**8KB 163 160-011**	–	–	–	–	xx	–	–	–	–	–	–	–	–
Bend lighting control unit, 24 units	**5DF 009 244-007**	–	–	–	–	xx	–	–	–	–	–	–	–	–
Adapter lead														
[1] adapter from FEP plug to (4-pin) Deutsch plug	**8KA 202 117-001**	–	–	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Adapter from FEP plug to performance module (247.043) or DynaView (009 295)	**8KA 202 117-011**	–	–	–	–	–	xx	xx	xx	xx	–	–	–	–

x = accessory for proper attachment

xx = optional accessory