



BRIEF INFORMATION

90 mm LED MODULE L4060

- First provider for all 5 front light functions in LED with 2 headlamps
- For diverse applications and the highest demands
- Maximum design and technological 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 or direction indicator
 - **Conversion:** Existing halogen versions can be converted to LED modules (compatible installation solutions)
 - **90 mm LED upgrade:** All lighting functions available with LED technology, for maximum service life
 - **Design:** 40 x 60 mm polycarbonate and polymethylmethacrylate lenses for varying light distribution as low beam, fog light, high beam and fog light with cornering light
 - **Housing:** Sturdy die-cast aluminum housing with integrated electronics
 - **Resistant to impact from stones:** Polycarbonate cover lens
 - **Weight saving:** Lens made from lightweight yet durable polycarbonate and polymethylmethacrylate
- Drive 20 times around the world without needing to replace the bulb.**
- Bulb replacement has become a thing of the past. Maintenance-free due to passive cooling
 - No moving parts are necessary (e.g. fan)
 - Lower fuel consumption and reduced CO2 emissions due to lower power consumption of max. 20 W on low beam or high beam
 - LED headlamps improve safety. The illumination is similar to daylight, considerably improving vision and ease of driving (drivers do not tire as quickly)
 - Multi-voltage (12 V, 24 V)
 - ECE and SAE type-approved

TECHNICAL DETAILS

Technical Data

Operating voltage	Multivolt 9 – 32 V	
Functions	Low beam, high beam, fog light, daytime driving light, position light, cornering light and direction indicator	
Connection	Integrated 4-pin FEP plug; adaptation to DEUTSCH plug available	
Specification*	HELLA standard N67101 1.2 Car Premium / 3.2 Caravan Premium / 4.1 Bus / 6.1 Truck / 7.2 Agro Plus	
Type approval	ECE	SAE
Low beam	ECE-R112 S01	SAE J566, FMVSS108
High beam	ECE-R112 S01	SAE J566, FMVSS108
Fog light	ECE-R19 F3, series 04	SAE J583
Daytime running light	ECE-R87	SAE J2087
Position light	ECE-R7	SAE J222
Cornering light	ECE-R119	SAE J852

* A 3A fuse from HELLA must be used for all LED headlamps. 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 also always be used. If water gets in, incorrect protection can lead to damage ranging from melting to burning of the product.

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



Low beam with daytime running light and position light



High beam



High beam with daytime running light and position light



High beam and direction indicator

Auxiliary LED light functions



Fog light



Fog light and cornering light



Fog light with daytime running light and position light

90 mm configurator:

www.hella.com/90mm-modules

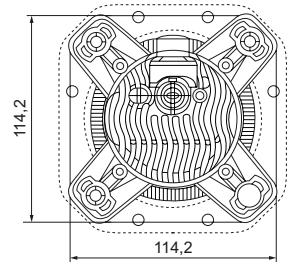
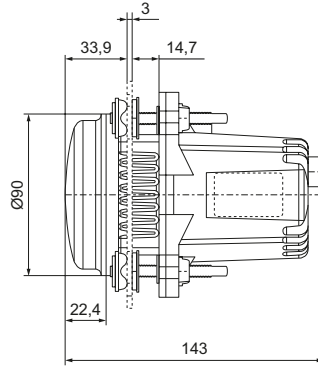
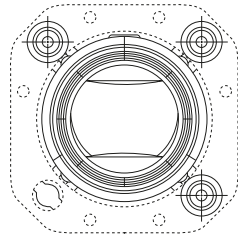
This tool shows you the options for equipping or upgrading a vehicle with 90 mm LED modules. See images from Europe's biggest light testing facility and compare the light distribution of halogen and LED modules, in order to help you make the right choice for your application.



Technical Drawings

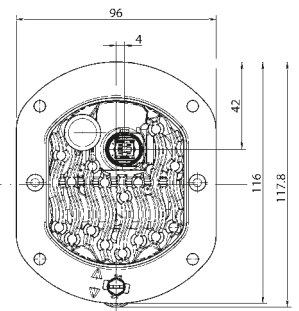
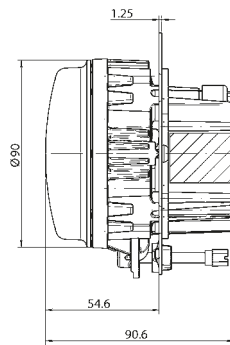
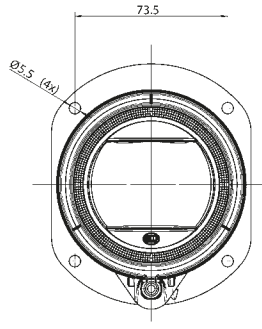
90 mm: L4060 low beam

Performance module mount for 1:1 conversion of existing halogen versions



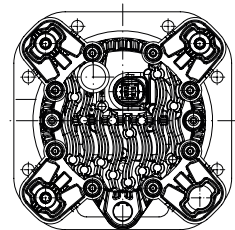
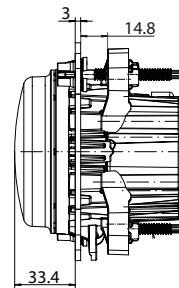
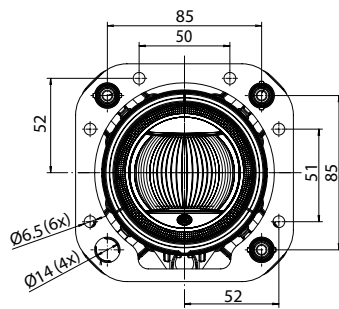
90 mm: L4060 high beam/fog light

With preassembled carrier frame



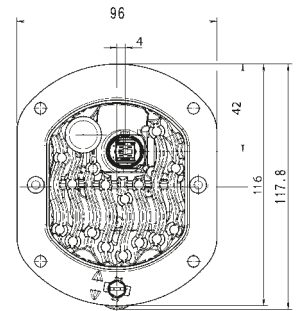
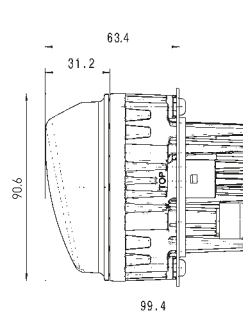
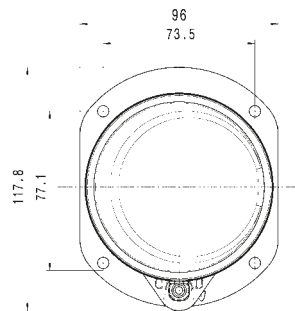
90 mm: L4060 high beam

Performance module mount for 1:1 conversion of existing halogen versions

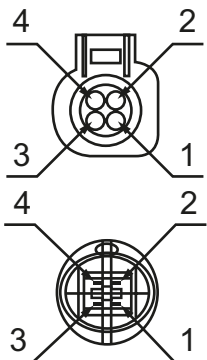


90 mm: L4060 fog light and cornering light

With preassembled carrier frame

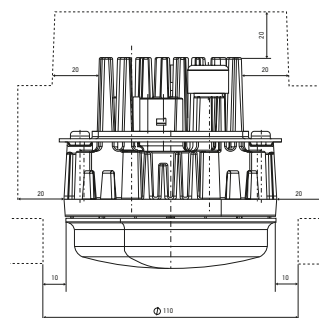


Pin assignment

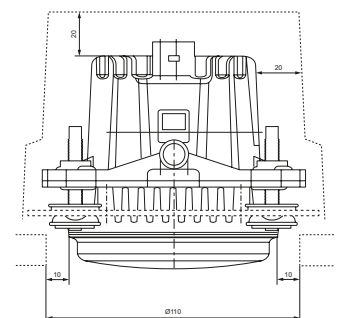


- 1) Central function (low beam, high beam, fog light and cornering light)
- 2) Position light (if available)
- 3) Ground
- 4) Daytime running light or direction indicator (if available)

Installation and thermal conditions

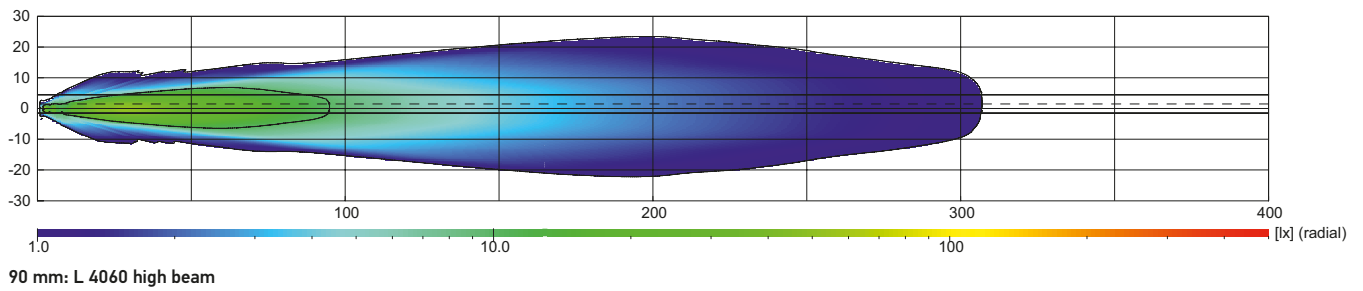
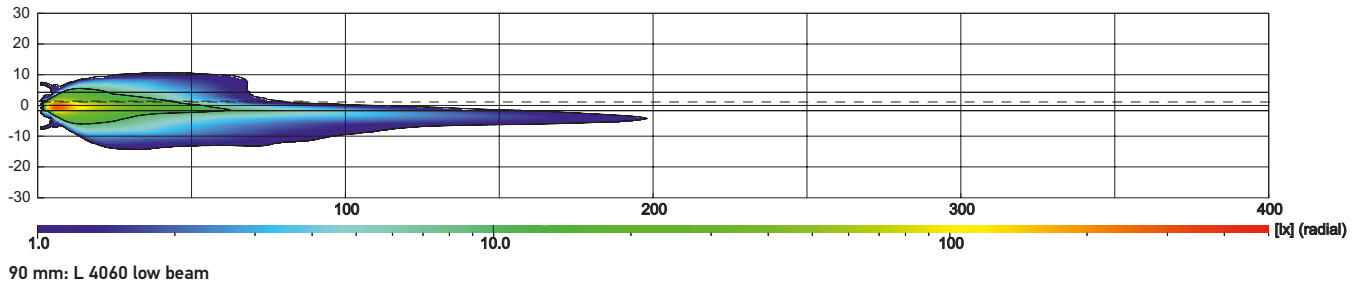


High beam

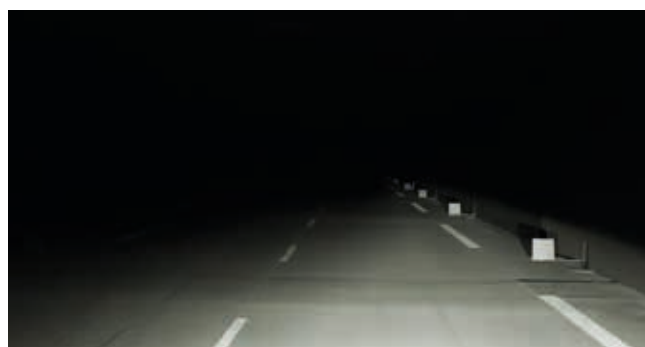
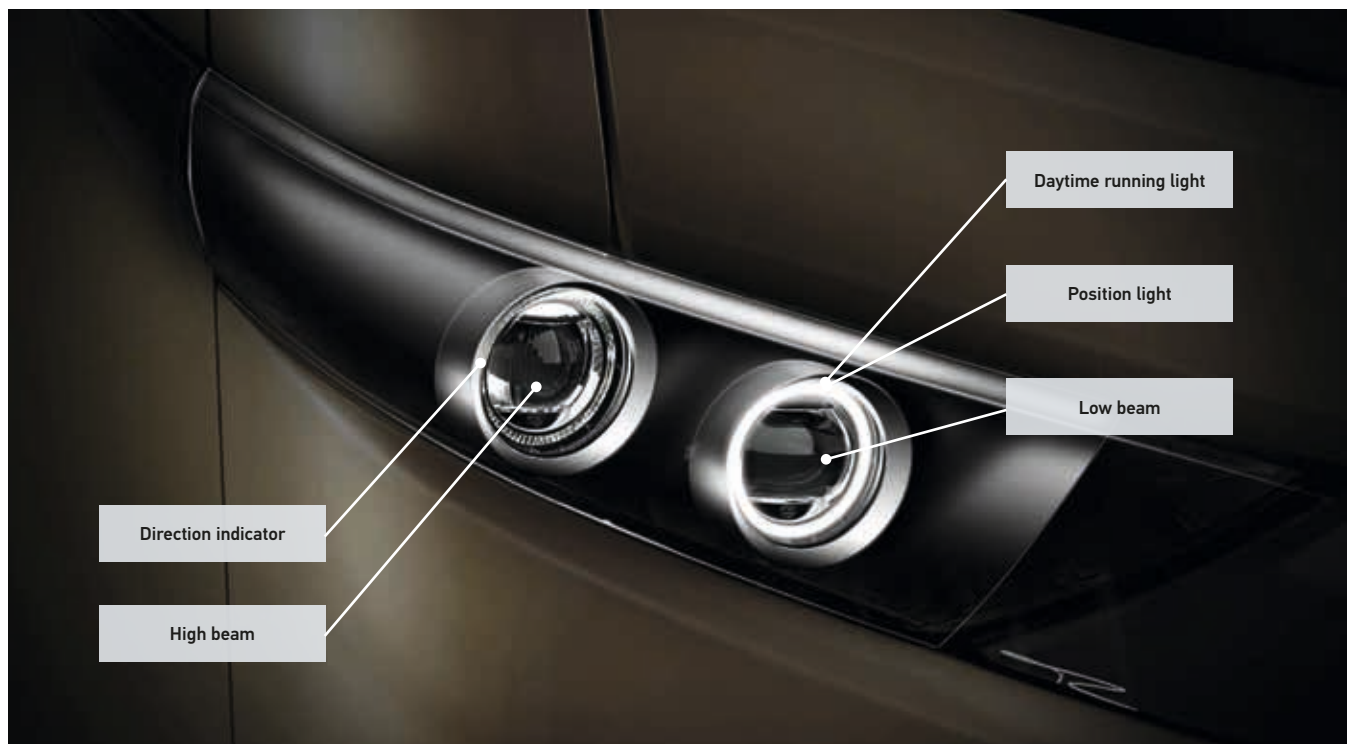


Low beam

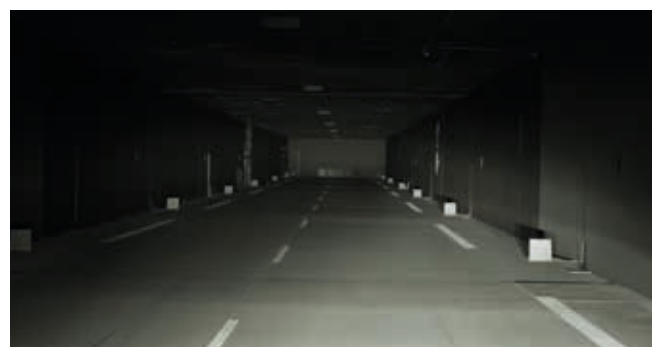
ISOLUX DIAGRAMS



APPLICATION EXAMPLES





L4060 low beam



L4060 low beam and high beam

RANGE OVERVIEW

Product photos	Description	Mounting concept/ versions	Part number
	<p>L4060 low-beam headlamp Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover, performance mount</p>	<p>ES / SAE version, FEP connector</p> <hr/> <p>LES version, FEP connector</p> <hr/> <p>ES / SAE version, DEUTSCH connector</p> <hr/> <p>LES version, DEUTSCH connector</p>	<p>1BL 012 488-001</p> <hr/> <p>1ML 012 488-011</p> <hr/> <p>1BL 012 488-101</p> <hr/> <p>1ML 012 488-111</p>
	<p>LED low-beam headlamp L4060 with daytime running and position light Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover, performance mount</p>	<p>ES / SAE version, FEP connector</p> <hr/> <p>LES version, FEP connector</p> <hr/> <p>ES / SAE version, DEUTSCH connector</p> <hr/> <p>LES version, DEUTSCH connector</p>	<p>1BL 012 488-021</p> <hr/> <p>1ML 012 488-031</p> <hr/> <p>1BL 012 488-121</p> <hr/> <p>1ML 012 488-131</p>
	<p>LED high-beam headlamp L4060 Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>Preassembled carrier frame</p> <hr/> <p>Performance mount</p>	<p>1FO 011 988-021</p> <hr/> <p>1FO 011 988-121</p>
	<p>LED high-beam headlamp L4060, with daytime running and position light Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>Preassembled carrier frame</p> <hr/> <p>Performance mount</p>	<p>1FO 011 988-031</p> <hr/> <p>1FO 011 988-131</p>
	<p>LED high-beam headlamp L4060 with direction indicator Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>with pulse generator, preassembled carrier frame</p> <hr/> <p>with pulse generator, Performance mount</p> <hr/> <p>without pulse generator, preassembled carrier frame</p> <hr/> <p>without pulse generator, Performance mount</p>	<p>1FO 011 988-081</p> <hr/> <p>1FO 011 988-181</p> <hr/> <p>1FO 011 988-071</p> <hr/> <p>1FO 011 988-171</p>
	<p>LED front fog lamp L4060 Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>Preassembled carrier frame</p>	<p>1NO 011 988-001</p>
	<p>LED front fog lamp L4060, with daytime running light and position light Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>Preassembled carrier frame</p>	<p>1NO 011 988-011</p>
	<p>L 4060 LED front fog lamp, with cornering light Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover</p>	<p>Preassembled carrier frame, right</p> <hr/> <p>Preassembled carrier frame, left</p>	<p>1NO 011 988-061</p> <hr/> <p>1NO 011 988-051</p>

ACCESSORIES

Part number	Low beam 012 488-001/-011	Low beam, daytime running light and position light 012 488-021 / -031	Low beam 012 488-101/-111	Low beam, daytime running light and position light 012 488-121 / -131	Fog light 011 988-001	Fog light, daytime running light and position light 011 988-011	Fog and bend lighting 011 988-051 / -061	High beam 011 988-021	High beam 011 988-121	High beam, daytime running light and position light 011 988-031	High beam, daytime running light and position light 011 988-131	High beam, direction indicator (with pulse) 011 988-081	High beam and direction indicator (with pulse) 011 988-181	High beam and direction indicator (without pulse) 011 988-071	High beam and direction indicator (without pulse) 011 988-171	
Carrier frame																
Premium carrier frame (up to Truck)	9AH 169 580-011	XX	XX	XX	XX	-	-	-	-	XX	-	XX	-	XX	-	XX
Performance carrier frame (all classes)*	9AH 254 228-012	XX	XX	XX	XX	-	-	-	-	XX	-	XX	-	XX	-	XX
Surplus supply, LED FEP 4-pin plug																
Housing, 10 units	8JA 202 231-002	X	X	-	-	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	X	X
Individual conductor seal 0.35 – 0.5 mm ² or individual conductor seal 0.75 mm ² , 50 units	9GD 863 952-002	X	X	-	-	X	X	X	X	X	X	X	X	X	X	X
Blind plug, 50 units	9GD 863 952-002	X	-	-	-	X	-	X	X	X	-	-	X	X	X	X
Surplus supply, LED DEUTSCH connector 4-pin (together with adapter cable, see¹, except for 012 488-1xx)																
Male connector housing, 10 units (**1 unit in set)	8JA 201 022-042	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Lock/wedgeloek, 10 units (**1 unit in set)	9NB 201 024-042	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Contact sleeve 0.5 – 1.5 mm ² , 50 units (**5 units in set)	8KW 201 025-112	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Blind plug, 50 units (**3 units in set)	9NB 201 026-012	-	-	X	-	X	-	X	X	-	-	X	X	X	X	X
Set packaging Amount, see **	8JA 201 022-821	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Headlight beam throw adjustment system																
Headlamp leveling system, 12 V	6NM 007 282-221	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Headlamp leveling system, 24 V	6NM 008 299-501	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Bracket for right-side mounting of actuator	8HG 138 619-007	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Bracket for left-side mounting of actuator	8HG 138 620-007	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Mounting set for leveling actuators (bracket and articulated element)	8HG 183 586-001	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Headlight cleaning systems																
SRA set with fixed nozzles, 12 V, 4 nozzles	8WS 008 549-001	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
SRA set with telescoping single nozzles, 12 V, 2 single nozzles	8WT 008 549-101	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
SRA set with telescoping double nozzles, 12 V, 2 double nozzles	8WT 008 549-201	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
SRA set with fixed nozzles, 24 V, 4 nozzles	8WS 008 549-501	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
SRA set with telescoping single nozzles, 24 V, 2 single nozzles	8WT 008 549-601	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
SRA set with telescoping double nozzles, 24 V, 2 double nozzles	8WT 008 549-701	XX	XX	XX	XX	-	-	-	-	-	-	-	-	-	-	-
Bend lighting accessories																
Connecting cable for LED module, bend lighting control unit, 1 unit	8KB 163 160-811	-	-	-	-	-	-	XX	-	-	-	-	-	-	-	-
Bend lighting control unit, 24 units	5DF 009 244-007	-	-	-	-	-	-	XX	-	-	-	-	-	-	-	-
Adapter cable																
¹ Adapter from FEP connector to Deutsch connector (4-pin), 1 unit	8KA 202 117-001	XX	XX	-	-	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Adapter from FEP connector to Performance module series or DynaView (009 295), 1 unit	8KA 202 117-011	XX	-	-	-	-	-	-	XX	XX	-	-	-	-	-	-
Other accessories (only if the vehicle was registered i.a.w. ECE-R48, series 05. As of ECE-R48, series 06, supplement 03, no more mandatory accessories)																
Function monitoring device 12 V, 1 unit	5DS 011 630-001	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
Function monitoring device 24 V, 1 unit	5DS 011 630-211	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-

X Accessory for proper connection
 XX Optional accessories
 * Still in development for AgroPlus low beam modules