COLOR CODING PRODUCT GROUPS

- STANDARD
- LIFETIME
- XENON

ABBREVIATIONS/ SPECIFICATIONS

BL	Blue Light
DP	Double Power
HD	Heavy Duty
LL	Long Life
Amber	Amber bulb
Set	Contains 2 units

www.hella.com/bulbs

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BULBS FOR AGRICULTURE

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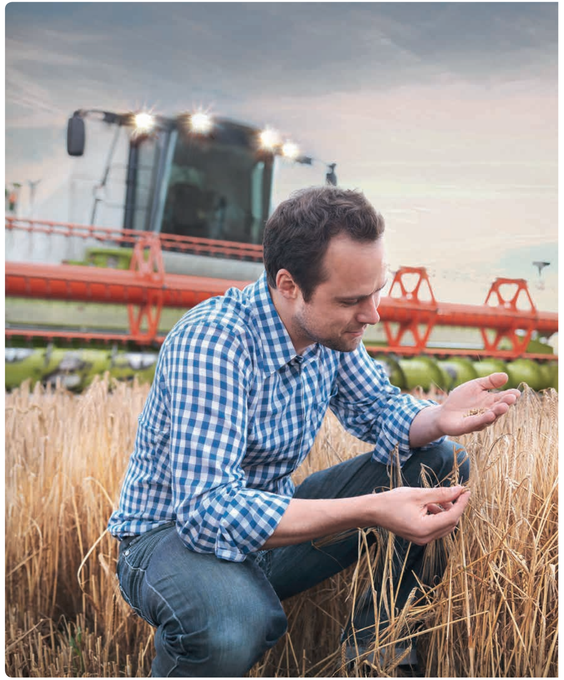


SYMBOLS

- Low beam
- High beam
- Fog lamp
- Rear fog lamp
- Daytime running light
- Parking lamp
- Position lamp
- Front indicator
- Rear indicator
- Auxiliary indicator
- Back-up light
- Brake lamp
- Tail lamp
- Glove compartment lighting
- Interior lighting
- Trunk lighting
- License plate lighting
- Dashboard lighting
- Side marker lamp
- Parking lamp
- Position lamp
- Clearance lamp
- Passenger cars
- Passenger cars and vans – 12V
- Commercial vehicles and buses – 24V
- Tractors
- Motorcycles – 12 V
- Packaging
- Voltage in volts
- Power in watts
- Bulb socket base
- Information

When switching bulbs, always replace them in pairs!

PREFACE

THE SAFE ALTERNATIVE – LIGHT BULBS FROM HELLA

As the expert and technological leader in smart light distribution systems, halogen, xenon and full LED headlamps, and as a partner to renowned vehicle manufacturers throughout the world, HELLA always meets the highest expectations and quality standards in agriculture and forestry.

These are the specific standards we apply to our extensive range of light bulbs: Product diversity—from traditional halogen lights all the way to efficient xenon light—leading technology with rigorously tested quality without any compromises and optimum light output levels, even in the harshest weather conditions.

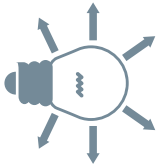
This ensures that our long-lasting, robust products not only prevent annoying and costly standstill time, but are also significantly safer. To brighten up your work day.

LIGHT SOURCES

Good visibility is the most important criterion for road safety. Various circumstances can impair this visibility, including twilight, adverse weather conditions, dirty windshields, etc. The risk of accidents is comparatively high under these kinds of driving conditions.

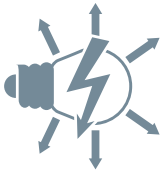
Changing and continually increasing mobility and traffic density also contribute to a higher risk. To meet these challenges successfully, we are constantly working towards improving existing lighting systems as well as developing new technical lighting equipment.

Here is a summary of the most important basic terms in lighting technology and the respective units of measure for lamp and light evaluation.

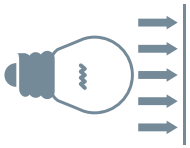


Luminous flux Φ
Unit: lumen [lm]
Luminous flux F is the term used to describe the complete luminous efficacy radiated from a light source.

Luminous intensity I
Unit: candela [cd]
This is the portion of the luminous flux radiating in a specific direction.



Luminous efficacy ŋ
Unit: lumen per watt [lm/W]
Luminous efficacy ŋ specifies how efficiently consumed electrical power is converted into light.



Illuminance E
Unit: lux [lx]
Illuminance E specifies the incident luminous flux per unit of illuminated area. Illuminance is 1 lx when a luminous flux of 1 lm strikes an area of 1 m^2.

Luminance L
Unit: candela per square meter [cd/m^2] Luminance L is the amount of brightness detected by the eye from a luminous or illuminated surface.

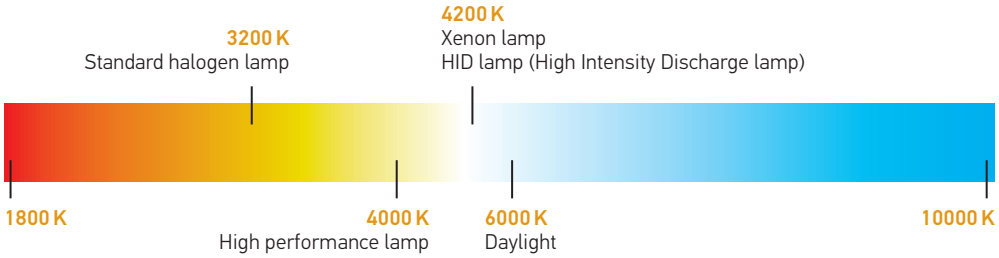
Light sources
Light sources are thermal radiators that produce light through heat energy. This means the more a light source is heated, the higher its luminous intensity will be.

THE RIGHT SOLUTION, EVERY TIME

COLOR SPECTRUM SHOWING TYPICAL COLOR TEMPERATURES

The color temperature of light sources is measured in kelvin (symbol K). Color temperatures over 4,000 K are called 'cold' colors (bluish white), while lower temperatures (yellowish to reddish) are considered 'warm'.

The higher the color temperature of a light source, the higher the proportion of blue in its color spectrum (see image below). An incandescent bulb has a warm white color temperature of approx. 2700 K. The following image depicts the color temperature spectrum.



TESTED QUALITY

All HELLA bulbs undergo thorough testing. The engineers in Hella's Quality Assurance department have specified a clear requirement profile for every bulb type.

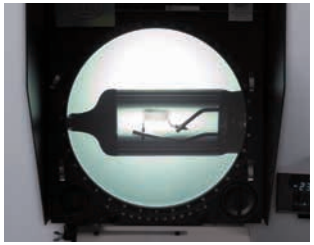
Headlamp bulbs, for example, are stringently tested by our engineers for their light distribution properties. The very latest in light measuring equipment is used for this.

Paint adhesion tests compliant with FAKRA guidelines (German Association of Automotive Experts), vibration and shock tests in line with IEC requirements, geometric measurements, light flux and efficacy measurements, plus endurance tests guarantee that wholesalers and garages receive perfect quality.

Quality assurance is very important to us
Ensuring you and your customers are satisfied. This is why HELLA's quality assurance engineers carry out exhaustive testing of all our bulbs to ensure their high quality.

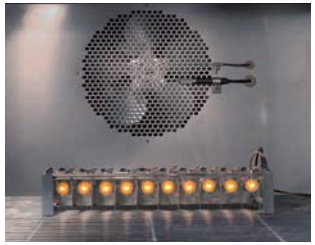
And it is thanks to these extensive tests and our OE lighting expertise that you can rely on our guaranteed quality standard.

The results of consistent quality testing
Renowned vehicle manufacturers have been relying on our technological innovations and trusting HELLA's expertise, experience and quality for years.



Geometrical measurement
A measuring projector is used to check the filament geometry for compliance with the statutory standards stipulated in IEC 60810. The filament must be dimensioned and positioned within the bulb as specified in the standard. This is the only way to achieve optimum headlamp power and prevent glare to oncoming traffic.

Vibration and shock test
Here, vibration resistance of the bulbs and the filament in particular is tested on an electro-dynamic vibration table.



Paint adhesion test
The adhesion of paint on colored glass bulbs—such as the PY21W—is tested in a climate chamber at different temperatures and air humidity levels. Optimum adhesion of glass bulb paint guarantees the prescribed amber indicator light over the whole service life period.

Service life test
Sophisticated tests are used to demonstrate the high reliability of HELLA bulbs over long periods.

Luminous flux measurement
An Ulbricht sphere and goniometer are used to determine the luminous flux and luminous intensity of HELLA bulbs. This guarantees the optimum luminous efficacy of our bulbs.

These tests and measurements form the basis of our tested quality.

SAFETY INFORMATION

BULB REPLACEMENT AND INSTALLATION

When inserting a new lamp, you should not touch the glass bulb, because fingerprints may burn in, leaving "clouds" on the glass.

Standard bulbs and halogen lamps do not contain environmentally damaging substances and can be disposed of as household waste

Check your local regulations to ensure correct disposal

HELLA recommends replacing both lamps when one has blown

XENON UPGRADE LAMPS

For more than a hundred years, HELLA has been a technological leader for drivers who want to be sure they can see and be seen. Modern xenon technology is a proven milestone for both driving safety and comfort. With a color temperature of 4300 K, twice the brightness of halogen lamps and around three times their luminous efficacy, the white light of these new generation xenon lamps guarantees safety and relaxed driving.

The newly developed HELLA Xenon +30 lamps have a color temperature of up to 5,000 K, which is almost as much as modern vehicles' extremely white LED daytime running lights, offering maximum illumination and visibility similar to daylight.

Advantages of HID lamps

- → Bright and broad light distribution
- → Long service life
- → Low power consumption
- → High color temperature provides whiter light
- → Homogenous light distribution (no shadows)
- → Vibration-resistant

	ECE DIN	W		K	T_C	B_3	i
HELLA Xenon							
8GS 009 028-111	D1S*	35 W	PK32d-2	4300 K	3000 h	2000 h	New generation
8GS 007 949-261	D2S*	35 W	P32d-2	4300 K	3000 h	2000 h	New generation
8GS 007 001-151	D2R*	35 W	P32d-3	4300 K	3000 h	2000 h	New generation
8GS 009 028-311	D3S**	35 W	PK32d-5	4300 K	2500 h	1500 h	New generation
8GS 007 949-311	D4S**	35 W	P32d-5	4300 K	3000 h	2000 h	New generation
HELLA Xenon +30							
8GS 009 028-621	D1S*	35 W	PK32d-2	5000 K	2500 h	1500 h	+30% more light
8GS 007 949-251	D2S*	35 W	P32d-2	5000 K	2500 h	1500 h	+30% more light
8GS 007 001-241	D2R*	35 W	P32d-3	5000 K	2500 h	1500 h	+30% more light

* To be used only with an approved electrical ballast
** Free of mercury

STANDARD: FOR GREATER ECONOMY

Standard bulbs for agriculture provide original equipment manufacturer quality and are a very good value for your money. Excellent luminous efficacy, reliability and durability.

- → Comprehensive range of products for all standard requirements
- → Strong luminous efficacy
- → Long service life
- → Very good value for money

	ECE DIN	V	W	
HELLA 12 V Standard halogen				
8GH 002 089-133	H1	12 V	55 W	P14,5s
8GH 002 090-133	H3	12 V	55 W	PK22s
8GJ 002 525-131	H4	12 V	60/55 W	P43t
8GH 007 157-121	H7	12 V	55 W	PX26d
8GH 008 357-001	H9	12 V	65 W	PGJ19-5
8GH 005 635-121	HB3	12 V	60 W	P20d
8GH 005 636-121	HB4	12 V	51 W	P20d
8GD 002 088-141	R2	12 V	45/40 W	P45t
HELLA 24 V Standard halogen				
8GH 002 089-251	H1	24 V	70 W	P14,5s
8GH 002 090-251	H3	24 V	70 W	PK22s
8GJ 002 525-251	H4	24 V	75/70 W	P43t
8GH 007 157-241	H7	24 V	70 W	PX26d
8GD 002 088-271	R2	24 V	55/50 W	P45t

LIFETIME: FOR A LONGER SERVICE LIFE

HELLA Long Life halogen lamps (12 V) have a longer service life and are more environmentally friendly*, because they do not have to be replaced as often.

Thanks to single coil technology, HELLA Double Power halogen lamps (24 V) have greater intensity and double the service life*.

HELLA Super Long Life halogen lamps (12 V), with an operating time* of up to 3x longer, provide optimum value for money and the best selection for frequent travelers.

HELLA Heavy Duty halogen lamps (24 V) are specially designed for extreme demands, and can be found on construction equipment and agricultural machinery. Heavy Duty combines exceptional toughness and vibration resistance with impressive brightness and long service life.

Lifetime stands for

- → Environmental friendliness through long usability
- → Strong luminous efficacy
- → Longer service life
- → Optimum price-performance ratio
- → Less frequent bulb replacement

	ECE DIN	V	W		i
HELLA Halogen Long Life					
8GH 002 089-351	H1	12 V	55 W	P14,5s	Increased service life
8GJ 002 525-481	H4	12 V	60/55 W	P43t	Increased service life
8GH 007 157-201	H7	12 V	55 W	PX26d	Increased service life
HELLA Halogen Super Long Life					
8GJ 002 525-891	H4	12 V	60/55 W	P43t	Maximum service life
8GH 007 157-451	H7	12 V	55 W	PX26d	Maximum service life
HELLA Halogen Double Power					
8GH 002 090-471	H3	24 V	70 W	PK22s	Twice the service life
8GH 007 157-231	H7	24 V	70 W	PX26d	Twice the service life
HELLA Halogen Heavy Duty					
8GH 002 089-361	H1	24 V	70 W	P14,5s	Vibration-resistant
8GJ 002 525-281	H4	24 V	75/70 W	PX26d	Vibration-resistant

* Compared to standard halogen lamps.

D1S D2R/D2S D3S D4S H1 H3 H7 H4 R2 H9 HB3 HB4 F2 S2

W5/ 1,2W BX5,4d B8,4d 1,2W B8,3d 1,2W BX8,4d 2W B8,3d 2W B8,5d 2W

D1S D2R/D2S H1 H3 H9 HB3

P21W P21/5W PY21W K

W3W W5W T4W C5W

T4W R5W R10W J H W5W C5W M K

C21W P21W W16W

P21W P21/5W W16W M K

D1S

12 V / 24 V		V	W		i
8GS 009 028-111	1	85*	35	PK32d-2	4,300K
8GS 009 028-621	1	85*	35	PK32d-2	5,000K | +30%

D2S

12 V / 24 V		V	W		i
8GS 007 949-261	1	85*	35	P32d-2	4,300K
8GS 007 949-251	1	85*	35	P32d-2	5,000K | +30%

D2R

12 V / 24 V		V	W		i
8GS 007 001-151	1	85*	35	P32d-3	4,300K
8GS 007 001-241	1	85*	35	P32d-3	5,000K | +30%

D3S

12 V / 24 V		V	W		i
8GS 009 028-311	1	42*	35	PK32d-5	Free of Mercury

D4S

12 V / 24 V		V	W		i
8GS 007 949-311	1	42*	35	P32d-5	Free of Mercury

H1

12 V / 24 V		V	W		i
8GH 002 089-133	1	12	55	P14.5s	
8GH 002 089-251	1	24	70	P14.5s	

H3

12 V / 24 V		V	W		i
8GH 002 090-133	1	12	55	PK22s	
8GH 002 090-251	1	24	70	PK22s	

H4

12 V / 24 V		V	W		i
8GJ 002 525-131	1	12	60/55	P43t	
8GJ 002 525-251	1	24	75/70	P43t	

H7

12 V / 24 V		V	W		i
8GH 007 157-121	1	12	55	PX26d	
8GH 007 157-241	1	24	70	PX26d	

H9

12 V / 24 V		V	W		i
8 GH 008 357-001	1	12	65	PGJ19-5	

* Lamps to be used with electrical ballast units for 12 V and 24 V vehicles

12 V / 24 V		V	W		i

HB3

8GH 005 635-121	1	12	60	P20d		

HB4

8GH 005 636-121	1	12	51	P22d		

R2

8GD 002 088-141	1	12	45/40	P45t	Halogen	
8GJ 004 173-121	1	12	60/55	P45t	Halogen	
8GD 002 088-271	1	24	55/50	P45t	Halogen	

S2

8GD 002 084-131	1	12	35/35	BA20d		
8GD 002 084-151	1	12	45/40	BA20d		

J

8GP 002 066-121	10	12	2	BA7s		
8GP 002 066-241	10	24	3	BA7s		

12 V / 24 V		V	W		i

H

8GP 002 068-121	10	12	2	BA9s		
8GP 002 068-131	10	12	3	BA9s		
8GP 002 068-241	10	24	2	BA9s		

T4W

8GP 002 067-121	10	12	4	BA9s		
8GP 002 067-241	10	24	4	BA9s		

R5W

8GA 002 071-121	10	12	5	BA15s		
8GA 002 071-241	10	24	5	BA15s		

R10W

8GA 002 071-131	10	12	10	BA15s		
8GA 002 071-251	10	24	10	BA15s		

R

8GA 002 072-121	10	12	18	BA15s		
8GA 002 072-241	10	24	18	BA15s		

12 V / 24 V			V	W		i
P21W						
	8GA 002 073-121	10	12	21	BA15s	
	8GA 002 073-281	10	12	21	BA15d	dualpole
	8GA 002 073-241	10	24	21	BA15s	
PY21W						
	8GA 006 841-121	10	12	21	BAU15s	Amber
P21/5W						
	8GD 002 078-121	10	12	21/5	BAY15d	
	8GD 002 078-241	10	24	21/5	BAY15d	
F2						
	8GA 002 083-131	1	12	35	BA20s	

12 V / 24 V			V	W		i
K						
	8GM 002 091-121	10	12	18	SV8.5-8	approx. 15.5/40 mm
	8GM 002 091-131	10	12	10	SV8.5-8	approx. 11/40 mm
	8GM 002 091-141	10	12	15	SV8.5-8	approx. 15.5/40 mm
	8GM 002 091-241	10	24	18	SV8.5-8	approx. 15.5/40 mm
	8GM 002 091-251	10	24	10	SV8.5-8	approx. 11/40 mm
C5W						
	8GM 002 092-121	10	12	5	SV8.5-8	approx. 11/35 mm
	8GM 002 092-241	10	24	5	SV8.5-8	approx. 11/35 mm
C21W						
	8GM 002 091-181	?	12	21	SV8.5-8	approx. 15/40 mm
M						
	8GM 002 094-121	10	12	3	SV7-8	approx. 8.2/30 mm
	8GM 002 094-241	10	24	3	SV7-8	approx. 8.2/30 mm

12 V / 24 V			V	W		i
W5/1,2W						
	8GP 002 095-121	10	12	1,2	W2x4.6d	
	8GP 002 246-241	10	24	1,2	W2x4.6d	
W3W						
	8GP 003 594-141	10	12	3	W2.1x9.5d	
W5W						
	8GP 003 594-121	10	12	5	W2.1x9.5d	
	8GP 003 594-251	10	24	5	W2.1x9.5d	
W16W						
	8GA 008 246-001	10	12	16	W2.1x9.5d	

12 V / 24 V			V	W		i
Plastic Socket Lamps						
	8GA 007 997-121	10	12	1,2	BX8.4d	black
	8GA 007 997-041	10	12	1,2	B8.3d	black, contact at the bottom
	8GS 007 677-121	10	12	2	BX8.4d	white-green
	8GA 007 997-001	10	12	2	B8.3d	white
	8GA 007 997-081	10	12	2	B8.5d	green