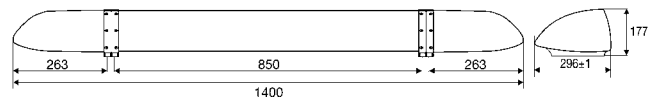




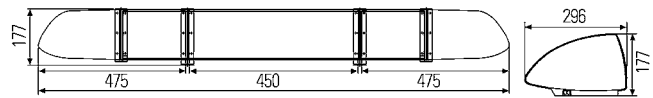
Advantages at a Glance

- Choose from 4 different widths and 3 different lighting systems in 12 V or 24 V designs – the perfect solution for every vehicle roof
- Wide range of housing covers plus retrofit add-on functions
- Tailored designs due to illuminating central panels with optional lettering (for use only if legally permissible – not approved for public roads in Germany, Austria or in Switzerland)
- Various attachment options, e.g. by rubber base or holder systems
- Control by single switches

Technical drawing



OWS xenon and rotating mirror variants



OWS multiple reflectors

General Technical Data

Rated voltage (U _N)	12 V	24 V
Operating temperature range	-40 °C to +60 °C	
Interference suppression	Conducted Class 5 (CISPR 25)	
Protective rating	IP 5K4K, IP 9K (resistant to dust and high-pressure jet cleaners)	

Technical Data OWS and OWS-MR

Rated voltage (U _N)	12 V	24 V
Operating voltage (U _B)	10,8–13,8 V	21,6–27,6 V
Power consumption, lighting: Central panel (OWS only)	4 A	2 A
Power consumption, beacons	2 (4) x 4,7 A	2 (4) x 2,7 A
Speed	160 U/min	

Technical Data OWS-X

Rated voltage (U _N)	12 V	24 V
Operating voltage (U _B)	10–15 V	20–30 V
Power consumption, flash beacons	2 x 3,5 A	2 x 1,6 A
Flash frequency	2 Hz double flash	
Electrical flash energy	10 + 2 Ws	






Technical details

Type Approval	OWS
Photometric homologation	Ⓔ 00817, (ECE-R65)
EMC	Ⓔ 021309

Type Approval	OWS-MR
Photometric homologation	Ⓔ 006516, (ECE-R65)
EMC	Ⓔ 021309

Type Approval	OWS-X
Photometric homologation	Ⓔ 006517, (ECE-R65)
EMC	Ⓔ 021309

Lighting Technologies		
Halogen single reflector system	OWS	
Halogen multiple reflector system	OWS-MR	
Xenon double flash system	OWS-X	

Range overview

OWS 540	Voltage	Part Numbers	
Rotating mirror	12 V	2RL 007 900-501	
	24 V	2RL 007 900-511	
Rotating mirror with magnet	12 V	2RL 007 900-521	

OWS 1000	Voltage	Part Numbers	
Rotating mirror	12 V	2RL 007 900-001	
Xenon	12 V	2RL 007 900-121	

OWS 1400	Voltage	Part Numbers	
Rotating mirror	12 V	2RL 007 900-201	
	24 V	2RL 007 900-211	
Xenon	12 V	2RL 007 900-221	
	24 V	2RL 007 900-241	
Multiple reflectors, 1.424 mm	12 V	2RL 007 900-701	





OWS 1600	Voltage	Part Numbers	
Rotating mirror	12 V	2RL 007 900-601	
	24 V	2RL 007 900-611	
Xenon	24 V	2RL 007 900-631	





Roof illumination




Accessories

Rubber Bases		Part Numbers		OWS 540	OWS/-X 1000	OWS/-X 1400	OWS/-X 1600	OWS-MR
For slightly arched vehicle roofs	9GD 862 080-001		Included in package (see spare parts section for part numbers)		■			
For heavily arched vehicle roofs	9GD 862 080-011				■			
	9GD 862 081-001					■		
	9GD 862 085-001						■	
Mountings		Part Numbers						
For direct installation	9XD 861 990-001				■			
	9XD 861 990-011					■		
	9XD 861 990-021						■	
Mounting Kits		Part Numbers						
For welding onto existing supports (for use straight under the OWS or the mounting for direct installation [9XD 861 990-...])	9XD 861 995-801				■	■	■	■



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the cars of tomorrow

Accessories



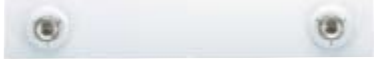


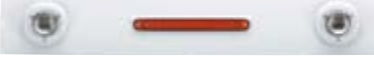
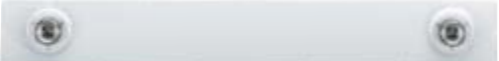
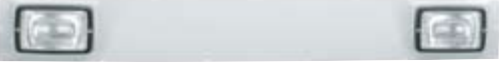
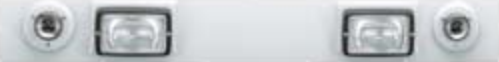
Permanent Installation		Part Numbers		OWS 540	OWS/-X 1000	OWS/-X 1400	OWS/-X 1600	OWS-MR
Attachment system kit (use screws to attach to bottom of mounting for direct installation [9XD 861 990-...])		9XD 857 445-801			■	■	■	■
Bulb Holders		Part Numbers						
Bulbs for central panel lighting included	12 V	9FT 861 790-001*			■	■	■	
	24 V	9FT 861 790-011*			■	■	■	
Switch with Control Light		Part Numbers						
1 switch for interior lighting, 1 switch for beacon operation (order separately)		6ED 004 778-011		■	■	■	■	■
Various switches from the Hella product range		Recommended 6FH 007 832-Serien		■	■	■	■	■

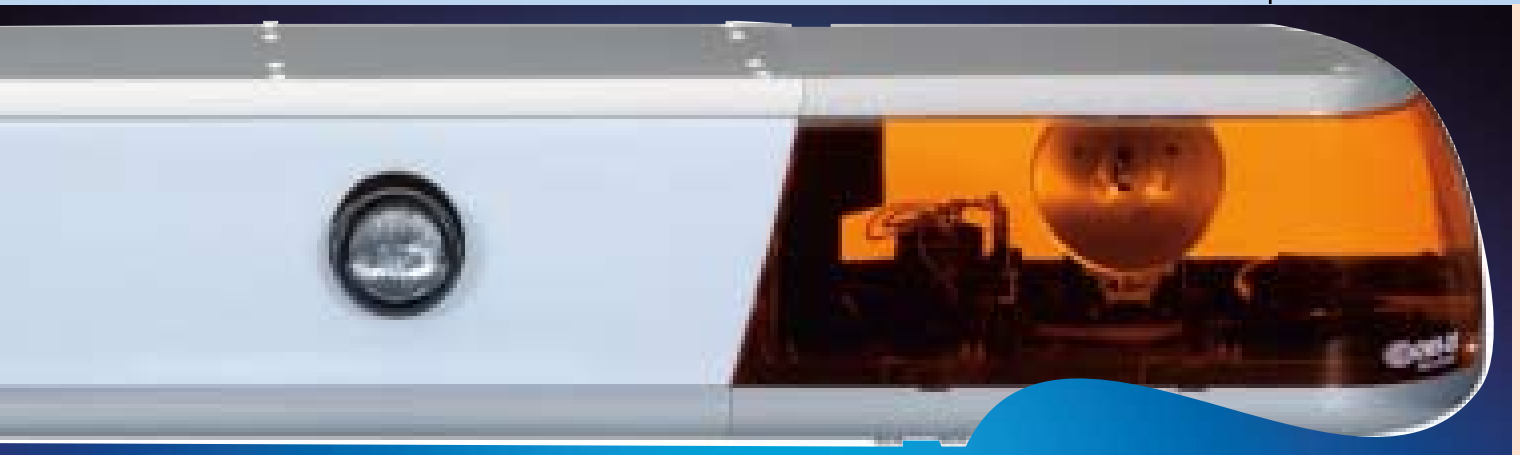
* Use of central panel lighting only if legally permissible. Not approved for use in the Federal Republic of Germany, Austria or in Switzerland.

■ = Not for OWS-X



The following retrofit covers are available for the optical warning systems:

OWS 1000		Part Numbers	
Rotating mirror	12 V 2RL 007 900-001	9HB 862 827-031	
Xenon	12 V 2RL 007 900-121		
Rotating mirror	12 V 2RL 007 900-001	9HB 862 827-041	
Xenon	12 V 2RL 007 900-121		
OWS 1400		Part Numbers	
Rotating mirror	12 V 2RL 007 900-201	9HB 862 827-011	
	24 V 2RL 007 900-211		
Xenon	12 V 2RL 007 900-221	9HB 862 827-051	
	24 V 2RL 007 900-241		
Rotating mirror	12 V 2RL 007 900-201	9HB 862 827-071	
	24 V 2RL 007 900-211		
Xenon	12 V 2RL 007 900-221	9HB 862 827-091	
	24 V 2RL 007 900-241		
Rotating mirror	12 V 2RL 007 900-201	9HB 862 827-021	
	24 V 2RL 007 900-211		
Xenon	24 V 2RL 007 900-631	9HB 862 827-061	
Rotating mirror	12 V 2RL 007 900-601		
	24 V 2RL 007 900-611	9HB 862 827-081	
Xenon	24 V 2RL 007 900-631		



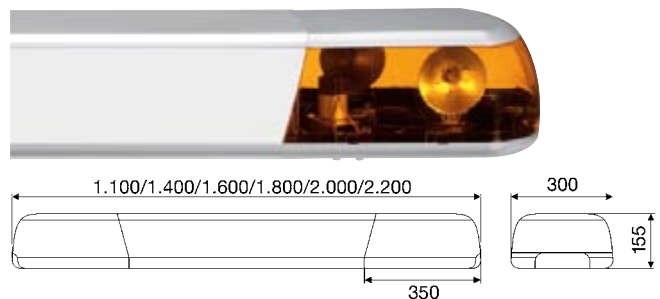
The Advantages at a Glance

- Attractive, modern design in silver (RAL 9006) with white central panels and amber domes
- Individual configuration possibilities on account of modular design
- The main beacons can be equipped as a halogen rotating mirror system (single or multiple reflector technology) or alternatively in xenon technology as a double flash system or particularly efficient parabolic trough system
- In each case, the systems are available in 12 or 24 V
- In order to install the system both on straight as well as arched roofs, a variable positioning mounting set as well as various rubber bases are available as accessories
- The design of the system is service-friendly (e.g. replacement of the light source from above without having to dismantle the dome)
- The system is controlled by a single switch
- The white central panel allows individual lettering and also offers the possibility of lighting from the inside
- For use only where legally permitted - not approved for use within the public road system in Germany, Austria and Switzerland.

General Technical Data

Rated voltage (U _N)	12 V	24 V
Operating temperature range	-40 °C to +60 °C	
Current capacity	4 A	2 A
Central panel lighting		
Interference suppression	Conducted Class 5 (CISPR 25)	
Protective rating	IP 5K4K, IP 9K (resistant to dust and high-pressure jet cleaners)	

Product picture and technical drawing



Type Approval

KL-ER



Lighting technology (ECE-R65)	A1 (E)001719
EMC protection	[e1] 033829

Type Approval

KL-MR

Lighting technology (ECE-R65)	A1 (E)001720
EMC protection	[e1] 033829



Technical Data Halogen Rotary Mirror System: KL-ER and KL-MR			The Halogen Optics		
Rated voltage (U _N)	12 V	24 V	Halogen single reflector system	KL-ER	
Operating voltage (U _B)	10,8–13,8 V	21,6–27,6 V			
Current consumption – beacons	2 (4) x 4,7 A	2 (4) x 2,7 A	Halogen multiple reflector system	KL-MR	
Speed	160 rpm				

Range overview

Part Numbers	Width/mm	Voltage	Lighting Systems	Auxiliary Lighting
2RL 009 688-001	1.100 mm	12 V	Single reflector (KL-ER)	
2RL 009 688-031	1.100 mm	12 V	Multiple reflector (KL-MR)	
2RL 009 688-121	1.100 mm	12 V	Multiple reflector (KL-MR)	Alley Lights
2RL 009 688-131	1.100 mm	12 V	Single reflector (KL-ER)	Alley Lights
2RL 009 688-251	1.100 mm	24 V	Single reflector (KL-ER)	
2RL 009 279-001	1.400 mm	12 V	Single reflector (KL-ER)	
2RL 009 279-011	1.400 mm	24 V	Single reflector (KL-ER)	
2RL 009 279-691	1.400 mm	12 V	Single reflector (KL-ER)	Alley Lights
2RL 009 279-081	1.400 mm	12 V	Multiple reflector (KL-MR)	
2RL 009 279-091	1.400 mm	24 V	Multiple reflector (KL-MR)	
2RL 009 279-581	1.400 mm	12 V	Multiple reflector (KL-MR)	2 worklights at the rear
2RL 009 279-591	1.400 mm	24 V	Multiple reflector (KL-MR)	2 worklights at the rear
2RL 009 279-101	1.600 mm	12 V	Single reflector (KL-ER)	
2RL 009 279-111	1.600 mm	24 V	Single reflector (KL-ER)	
2RL 009 279-601	1.600 mm	24 V	Single reflector (KL-ER)	2 worklights at the rear
2RL 009 279-181	1.600 mm	12 V	Multiple reflector (KL-MR)	
2RL 009 279-191	1.600 mm	24 V	Multiple reflector (KL-MR)	
2RL 009 279-511	1.600 mm	24 V	Multiple reflector (KL-MR)	2 worklights at the rear
2RL 009 279-211	1.800 mm	24 V	Single reflector (KL-ER)	
2RL 009 279-291	1.800 mm	24 V	Multiple reflector (KL-MR)	
2RL 009 279-721	1.800 mm	24 V	Multiple reflector (KL-MR)	2 worklights at the rear
2RL 009 279-711	1.800 mm	24 V	Single reflector (KL-ER)	2 worklights at the rear
2RL 009 279-391	2.000 mm	24 V	Multiple reflector (KL-MR)	
2RL 009 279-421	2.000 mm	24 V	Multiple reflector (KL-MR)	2 worklights at the rear
2RL 009 279-411	2.200 mm	24 V	Single reflector (KL-ER)	

Auxiliary Lighting Systems

As an option you can integrate various auxiliary lighting systems, e.g. adjustable worklights „Alley Lights“ with H7 bulbs for illumination alongside the vehicle or integrated H3 worklights to the front or rear.



OWS-QS with H3 worklights





LED Module KL-LR2

- Lowest power consumption: 40 % less than rotating mirror models
- Optimised luminous power due to homogeneous signal and smooth beam pattern
- Non-wear design for perfect operational safety
- Maintenance-free, replacing of bulbs not required
- Insensitive to shock and vibration, long life
- The new LED module extends the range to 5 signal modules with 3 lighting technologies

■ Rotating Mirror Variants:

Single reflector (KL-ER) and multiple reflector (KL-MR)

■ Xenon Variants:

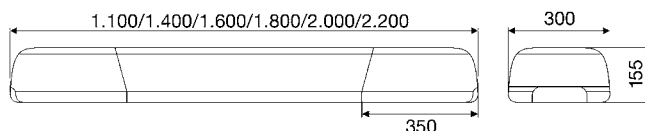
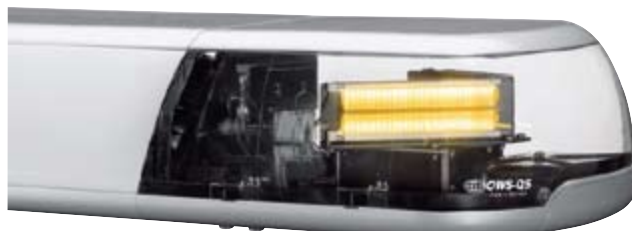
Double flash XL2 and parabolic trough XR2

■ LED Technology:

Parabolic system KL-LR2

Technical Data		
Rated voltage (U _N)	12 V	24 V
Average current for double flash	2 x 2,6 A	2 x 1,3 A
Flash frequency	2,05 Hz	
Light source	LED	
Quantity	2 x 2 reflectors with 30 LEDs each	
Flash sequences	ECE	single, double
	Other	three times, four times
	SAE	single, 1 Hz
Operating temperature range	-40 °C to +60 °C	
Sectional mode	rear signal optionally switches off (e.g. when driving in convoy)	
Self-diagnosis	yes	
Interference suppression	Conducted Class 5 (CISPR 25)	
Protective rating	IP 5K4K, IP 9K (resistant to dust and high-pressure jet cleaners)	

Product picture and technical drawing



Type Approval

Photometric homologation	TA1 MD (E1) 002466
EMC protection	according to 72/245/EG as amended 2006/28/EG [e1] 03 3829
General	ECE R65



Product Overview

Part Numbers	Width/mm	Voltage	Lighting Systems	Auxiliary Lighting
2RL 009 688-231	1.100 mm	12 V	LR2 module	Alley Lights
2RL 009 279-441	1.400 mm	12 V	LR2 module	

Accessories and Spare Parts

Part Numbers	
Single module	2XD 171 067-001



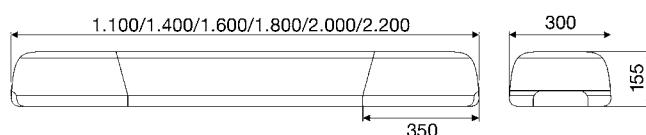


Xenon Modules KL-XL2/KL-XR2 and their Advantages

- Maximum signalling effect thanks to excellent light values and intensive, large-surface road illumination
- Simple programming of 8 different flash frequencies via rotary coding switch (single to quad flash, synchronous or alternating – single and double flash synchronous in accordance with ECE standard). The dome does not have to be dismantled.
- More cost-effective replacement of bulbs on account of individually replaceable flash tubes
- Protection from inverse polarity Optional reduction of the radiation angle to 180° by switching off the front or rear reflectors (e.g. when driving in convoy)

For use only where legally permitted – not approved for use within the public road system in the European Union.

Product picture and technical drawing





General Technical Data		
Rated voltage (U _N)	12 V	24 V
Operating temperature range	-40 °C to +60 °C	
Current capacity	4 A	2 A
Flash beacons		
Interference suppression	Conducted Class 5 (CISPR 25)	
Protective rating	IP 5K4K, IP 9K (resistant to dust and high-pressure jet cleaners)	

Technical Data Xenon System	KL-XL2	KL-XR2
Rated voltage (U _N)	12 V 24 V	12 V
Operating voltage (U _B)	10–15 V 20–31 V	10–15 V
Current capacity	2 x 3,5 A 2 x 1,6 A	2 x 4 A
Flash beacons		
Flash frequency	2 Hz double flash	2,1 Hz
Electrical flash energy	12 + 2 Ws	/
Single flash	/	18 Ws
Double flash	/	14 + 3 Ws



Technical details

Type Approval		KL-XL2	Xenon Patterning		
Lighting technology (ECE-R65)	A1	Ⓔ1 001721	Xenon double flash system	KL-XL2	
EMC protection		Ⓔ1 023829			
Type Approval		KL-XR2	Xenon parabolic trough system	KL-XR2	
Lighting technology (ECE-R65)	TA1	Ⓔ1 002243			
EMC protection		Ⓔ1 023829			

Range overview

Part Numbers	Width/mm	Voltage	Lighting Systems	Auxiliary Lighting
2RL 009 688-011	1.100 mm	12 V	Xenon double flash (KL-XL2)	
2RL 009 688-021	1.100 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 688-141	1.100 mm	12 V	Xenon double flash (KL-XL2)	
2RL 009 688-151	1.100 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-021	1.400 mm	12 V	Xenon double flash (KL-XL2)	
2RL 009 279-031	1.400 mm	24 V	Xenon double flash (KL-XL2)	
2RL 009 279-611	1.400 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-751	1.400 mm	12 V	Xenon double flash (KL-XL2)	
2RL 009 279-121	1.600 mm	12 V	Xenon double flash (KL-XL2)	
2RL 009 279-131	1.600 mm	24 V	Xenon double flash (KL-XL2)	
2RL 009 279-651	1.600 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-221	1.800 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-231	1.800 mm	24 V	Xenon double flash (KL-XL2)	
2RL 009 279-321	1.800 mm	24 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-341	1.800 mm	24 V	Xenon parabolic trough (KL-XR2)	2 worklights at the rear
2RL 009 279-351	2.000 mm	12 V	Xenon parabolic trough (KL-XR2)	
2RL 009 279-431	2.200 mm	24 V	Xenon double flash (KL-XL2)	



Roof illumination

Accessories

Rubber Bases	Width/mm	Voltage	Part Numbers
for flat vehicle roofs	1.100 mm		9GD 864 285-001
for arched vehicle roofs	1.100 mm		9GD 864 286-001
for arched vehicle roofs	1.400 mm		9GD 864 286-011
for arched vehicle roofs	1.600 mm		9GD 864 286-021
Mounting Kit with variable positioning supports for flat or arched vehicle roofs	1.400 mm 1.600 mm 1.800 mm 2.000 mm 2.200 mm		9GD 863 122-001



Central Panel Lighting

Bulb holder including bulbs for lighting the central panel. Set consists of 2 parts	1.400 mm 1.600 mm 1.800 mm	12 V	9FT 861 790-021*
Bulb holder including bulbs for lighting the central panel. Set consists of 2 parts	1.400 mm 1.600 mm 1.800 mm	12 V	9FT 861 790-031*



* Use of central panel lighting only where legally permitted – not approved for use within the public road system in Germany, Austria and Switzerland.

Control

Switch with control light,
1 for central panel lighting
and 1 for beacon operation
(order separately)

6ED 004 778-011



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the cars of tomorrow**

Spare Parts

Central Panel Lighting	Voltage	Part Numbers
H1 bulb	12 V/55 W	8GH 002 089-133
H1 bulb	24 V/70 W	8GH 002 089-251
Bulbs for bulb holder (10 each)	12 V/5 W	8GP 003 594-133
Bulbs for bulb holder (10 each)	24 V/5 W	8GP 003 594-251
Halogen rotating mirror module, single reflector KL-ER (including motor)	12 V	2RL 863 132-021
Halogen rotating mirror module, single reflector KL-ER (including motor)	24 V	2RL 863 132-031
Drive belts x2		9XR 855 975-001
Dome, amber (for all lighting systems)		9EL 863 117-071
Side-mounted „Alley Light“ (x1)		1GA 008 284-101

