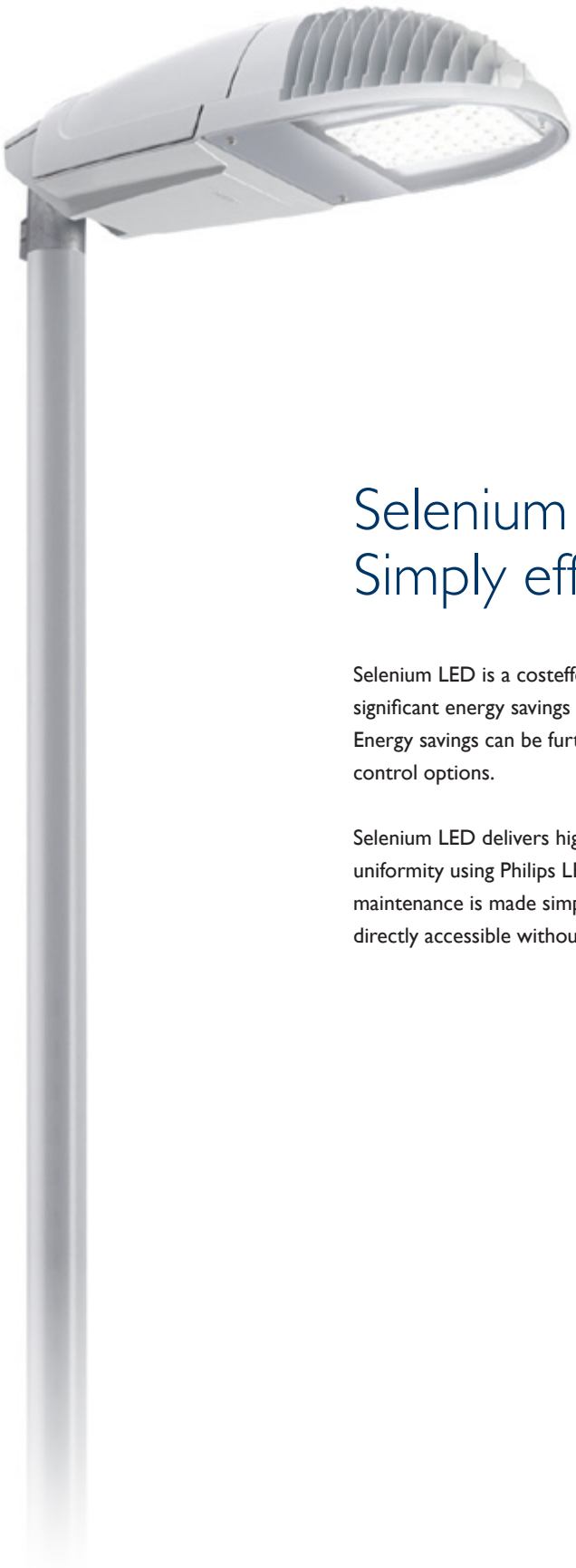
Selenium LED

Simply efficient

LEDGINE
BASED TECHNOLOGY

PHILIPS
sense and simplicity



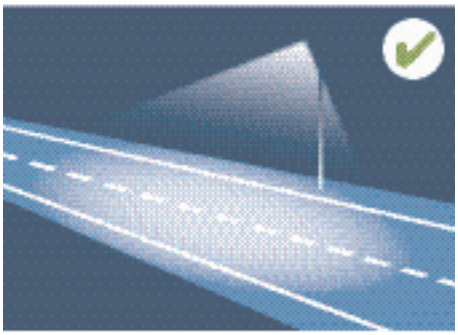
Selenium LED - Simply efficient

Selenium LED is a costeffective LED road lighting luminaire delivering significant energy savings compared with conventional solutions. Energy savings can be further enhanced with the range of integrated control options.

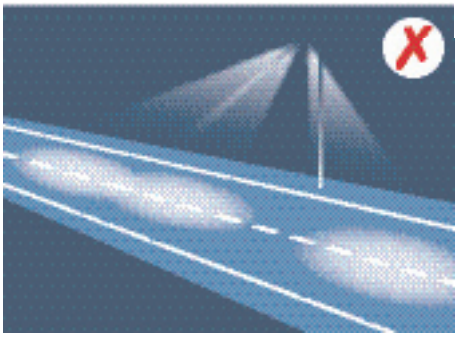
Selenium LED delivers high quality neutral white light with excellent uniformity using Philips LEDGINE-based technology. Installation and maintenance is made simple using plug connectors and drivers that are directly accessible without the use of tools.

Selenium LED: low initial investment with high performance

Selenium LED a high degree of uniformity thanks to its LEDGINE-based technology multi-layer optical concept. Featuring neutral white LEDs (4000 K), Selenium LED offers the optimum combination of light quality and performance.

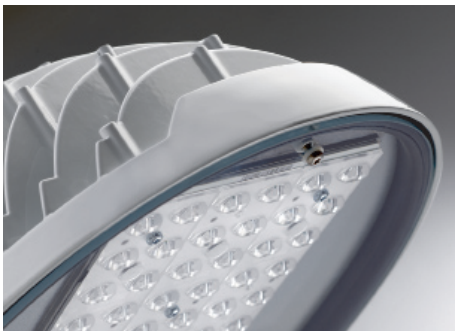


Multi-layer concept



Non-multi-layer concept (collimators, etc.)

Selenium LED's flat glass prevents glare and light pollution with 0 candela at 90°, and ensures the best possible maintenance factor.



Flat glass

Key photometric data

	Power	Lumen package source	Lumen package system
Simple offer with 5 lumen packages	40 W *	3,680 lm *	3,202 lm *
	55 W	5,520 lm	4,810 lm
	71 W	7,360 lm	6,372 lm
	89 W	9,200 lm	7,906 lm
	107W	11,040 lm	9,415 lm

Source Efficacy (lm/W)	up to 113 lm/W
LER - Luminaire Efficacy Rating (lm/W)	up to 90 lm/W
Lifetime	56
Lighting Distribution	Medium beam
Colour Temperature	Neutral White (4000 K)
Colour Rendering Index (CRI)	> 70

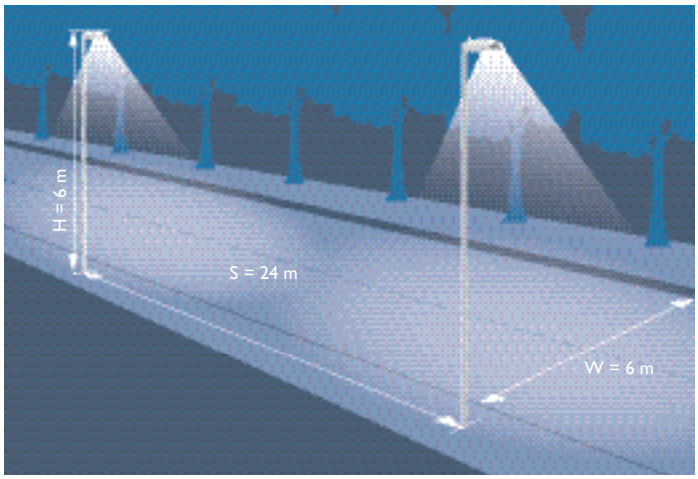
(*) available from Q4/2012

Selenium LED: minimum initial investment for maximum savings

Assumptions:

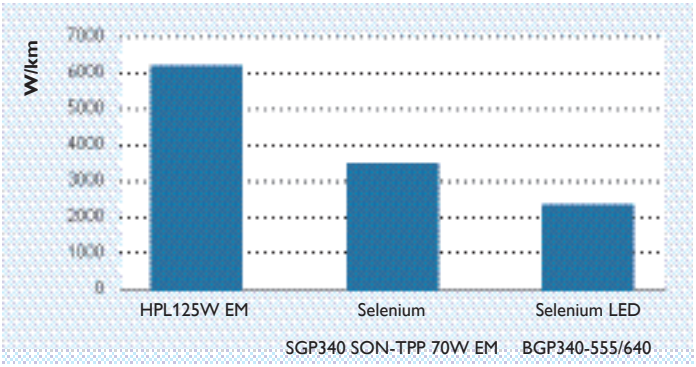
- Lighting class: ME4b (L ≥ 0.75 cd/m^2; Uo ≥ 0.4; Ui ≥ 0.5; Ti ≤ 15%; Sr ≥ 0.5)
- Carriageway: single
- Number of lanes: 2

A municipality asked an installer to renovate an old ME4b-class HPL125W mercury lamp installation. The existing configuration featured a 6-metre mounting height and 24metre inter-column spacing.



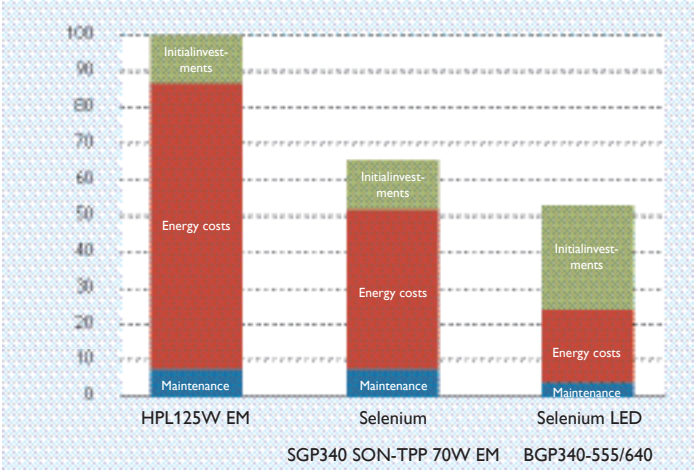
The replacement of the luminaires was done one-to-one using Selenium SGP340 SON-T70W EM and Selenium LED BGP340-55S/640.

Selenium LED enables energy savings of up to 70% compared with an old HPL installation and is around 40% more efficient than a SON-TPP luminaire in retrofit applications.



TCO over 10 years (base 100)

Selenium LED will have a very short payback compared with conventional solutions: 2 to 4 years when replacing an HPL installation, and 4 to 8 years when replacing a high-pressure sodium installation, depending on the application and energy cost. Additional control devices such as the integrated Dynadimmer will further reduce the payback time of Selenium LED over conventional solutions.

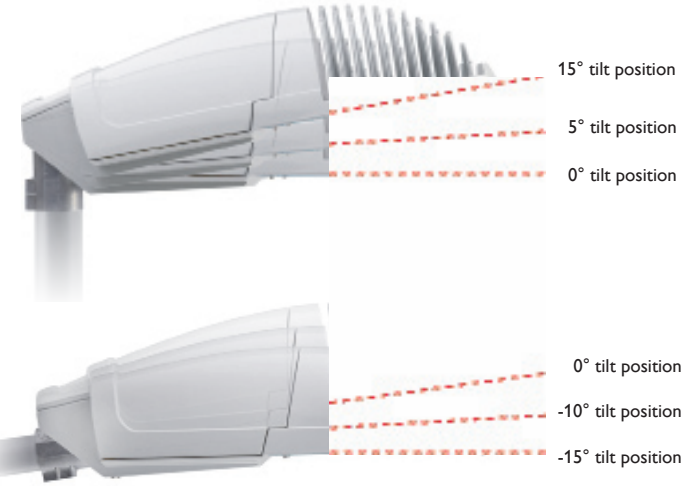


Selenium LED: easy and flexible installation

The simplicity of Selenium LED makes it very easy to install and maintain:

- The luminaire is always maintained from above to ensure an ergonomically sound posture for the service engineer
- Selenium LED can be easily opened without the use of tools

The spigot on Selenium LED is reversible and gives maximum flexibility in retrofit applications thanks to its three tilt positions.



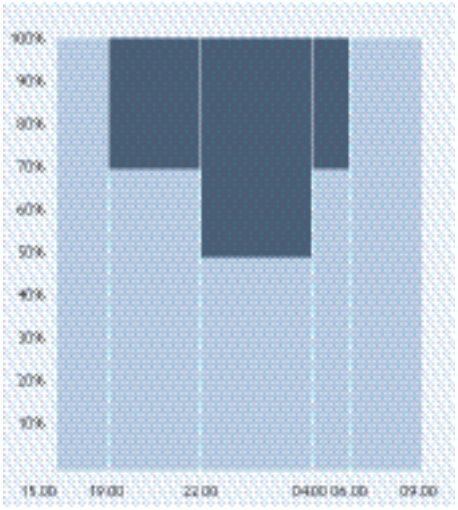
The connection to the mains cable is by means of a plug and socket connector:

Integrated controls for additional energy savings

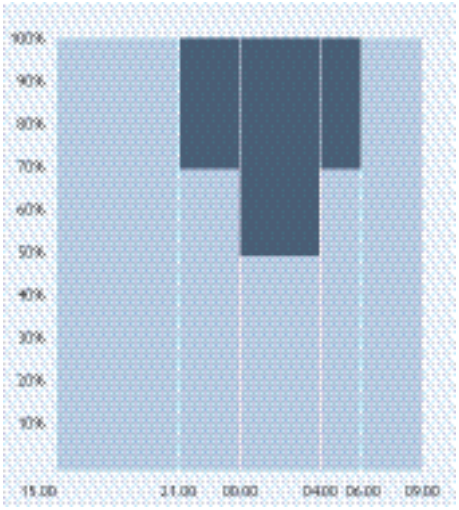
A good lighting system generates precisely the right level of lighting in the right place at the right time. Dynamic lighting control is an ideal means of saving energy without affecting light uniformity or safety.

Integrated Dynadimmer (DDF)

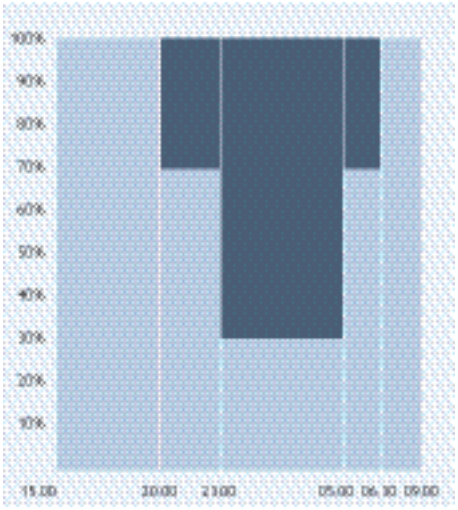
The integrated Dynadimmer is a stand-alone dimming device, programmed in the factory, which delivers energy savings of up to 50%. Three standard programs are available with different levels of dimming (DDF1, DDF2 & DDF3).



DDF1 standard program, allowing 40% energy savings over non-dimming version



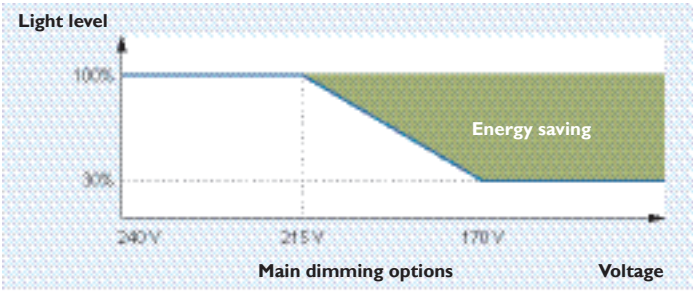
DDF2 standard program, allowing 32% energy savings over non-dimming version



DDF3 standard program, allowing 50% energy savings over non-dimming version

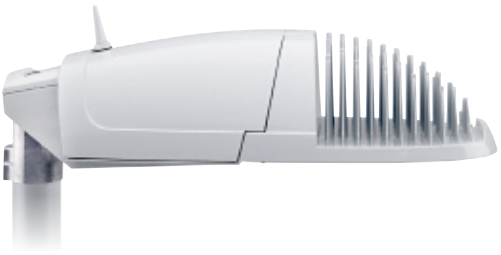
Mains dimming

This new option allows you to dim the light by lowering the mains supply. This will enable you to use LED luminaires on installations already set up with mains dimming or to use our new Amplight solution to monitor and control a group of light points at a competitive price.



Telemanagement

Selenium LED is available with our new RF antenna and is CityTouch ready. CityTouch provides full control and monitoring of each individual light point to maximize energy savings and optimize preventive maintenance.



CityTouch

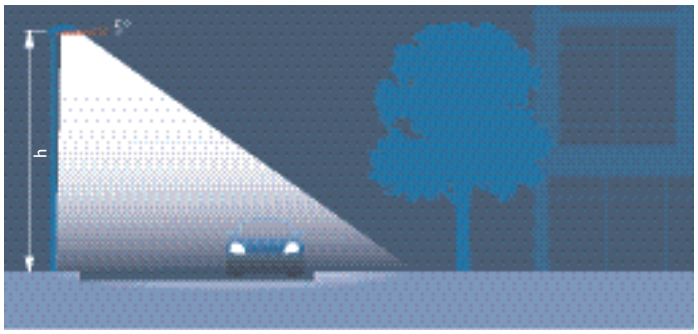
Which configuration to choose for a given application?

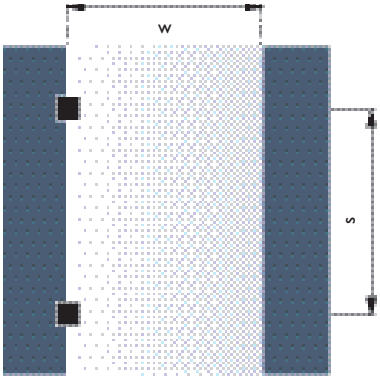
The following overview indicates suitable Selenium LED configurations for EN 13-201 lighting classes ME3a, ME4b and ME5

Selenium LED	System power (W)	Lumen package source (lm)	LOR	LER (lm/W)
BGP340LED110S	107	11,040	0.86	88
BGP340LED92S	89	9,200	0.86	89
BGP340LED74S	71	7,360	0.87	90
BGP340LED55S	55	5,520	0.87	87

Installation parameters

- Installation: single sided left
- Maintenance factor: 0.77 at 60,000 hours
- Tilt of 5°
- No overhang

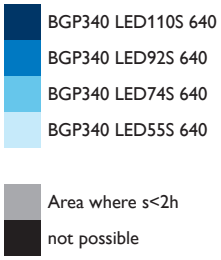




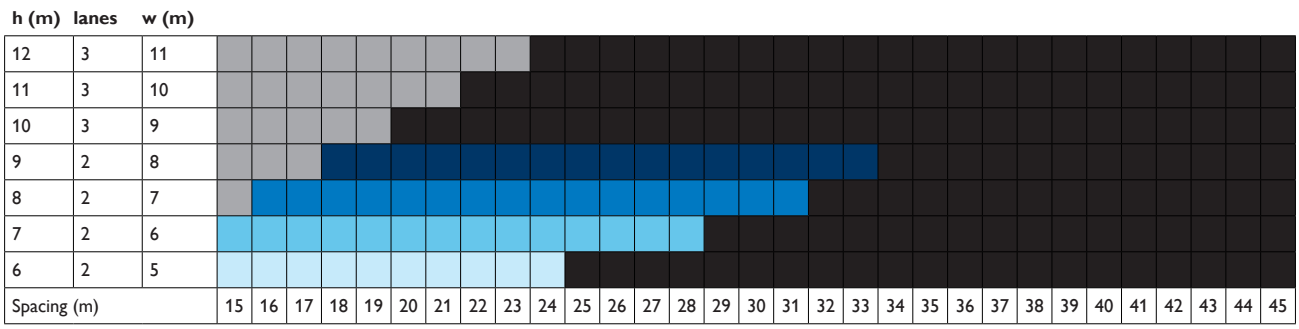
h: mounting height
s: spacing
w: road width

Lighting classes

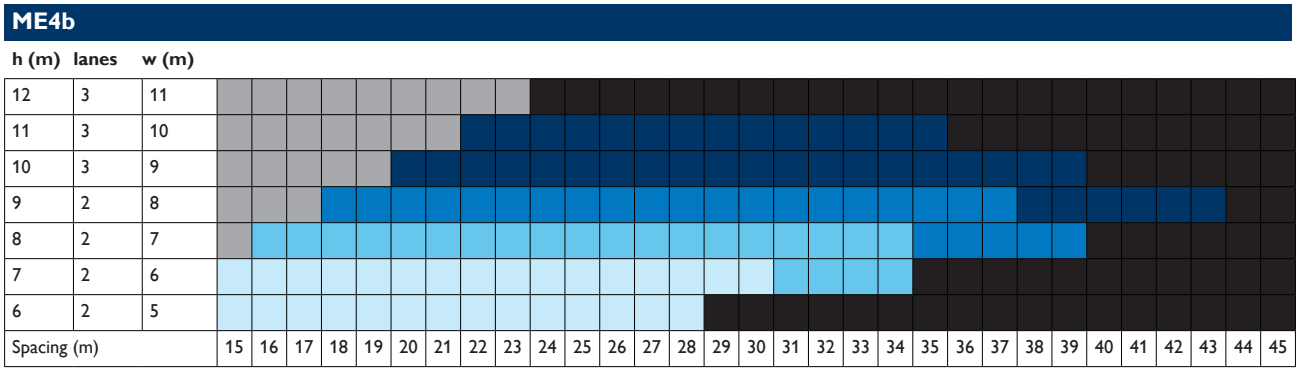
Class ME3a	Class ME4b	Class ME5
L ≥ 1 cd/m^2	L ≥ 0.75 cd/m^2	L ≥ 0.5 cd/m^2
Uo ≥ 0.4	Uo ≥ 0.4	Uo ≥ 0.35
UI ≥ 0.7	UI ≥ 0.5	UI ≥ 0.4
TI ≤ 15%	TI ≤ 15%	TI ≤ 15%
SR ≥ 0.5	SR ≥ 0.5	SR ≥ 0.5



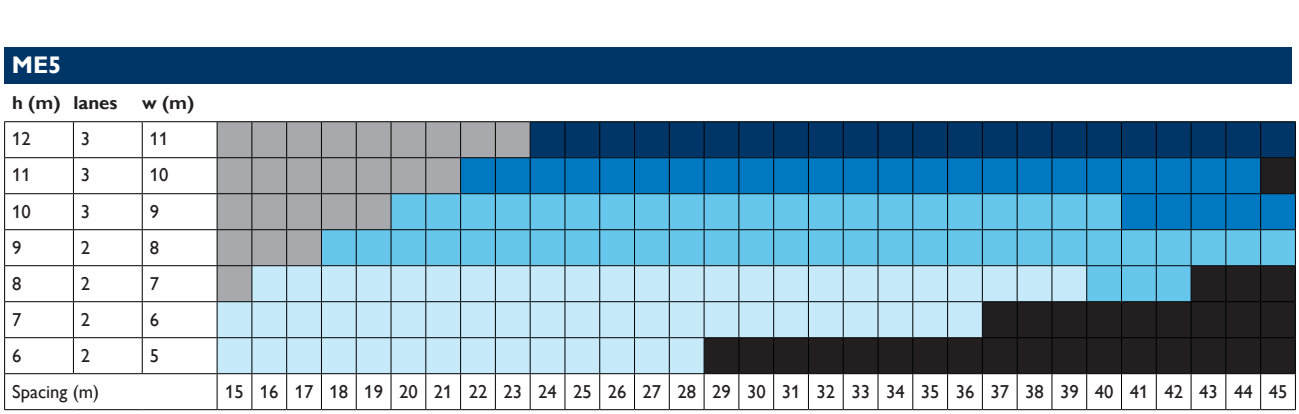
ME3a



ME4b



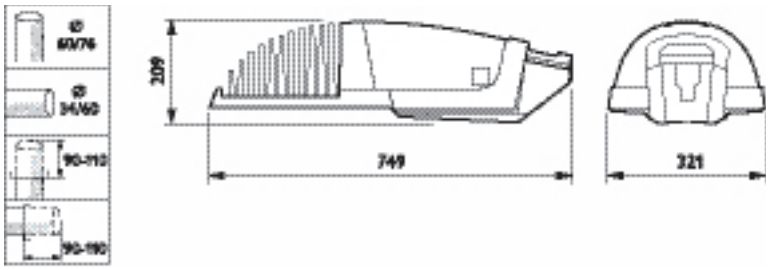
ME5



Technical data

Product features	Variations
Main specifications	
IP of the luminaire	IP66
Mechanical resistance	IK08
Nominal voltage	230 V – 50/60 Hz
Electrical class	I
Glass cover	Flat glass, extra clear
Housing	Aluminum
Standard colour	Grey (RAL 7035)
Weight max.	11 kg
Opening of the luminaire	Tool-less from above
Recommended ounting height	5 to 10 m
Installation	
Post-top position	0°, 5°, 15°
Post-top diameter	60 to 76 mm
Side-entry position	0°, -10°, -15°
Side-entry diameter	34 to 60 mm
Fastening	2 M10 screws

Product features
Control devices
Integrated Dynadimmer (DDF)
Mains dimming (D13)
Telemanagement with RF antenna (RF)
Options
Minicell 35 lux
Nema socket



Selenium LED ordering information

Many configurations are possible with Selenium LED: the table below gives a brief overview.

BGP340	LED55S/	640	PSR	I	DM	FG	DDF1	48/60

Designation	Product features	
BGP340	**Product type**	BGP340 = Selenium LED
LED55S/	**Light Source / Source flux**	LED55S/ = Light source is LED and source flux is 5500 lm • LED55S/ • LED74S/ • LED92S/ • LED110S/
640	**Light Source CRI / Light source colour**	640 = CRI > 70 and colour temperature of the LED is 4000 K
PSR	**Driver type**	PSR = Power Supply unit Regulated • PSU = Power Supply Unit • PSD = Power Supply unit DALI
I	**Electrical class**	I = Safety class I
DM	**Light Distribution**	DM = Ditribution Medium (Medium beam)
FG	**Glass cover**	FG = Flat Glass
DDF1	**Dimming option**	DDF1/DDF2/DDF3 = Integrated Dynadimmer (3 standard programs - see page 7) D13 = Mains dimming • RF = Radio Frequency antenna for telemanagement
MSP	**Die cast painting**	MSP = Marine Spray protected Paint (resisting 1000 hours salt spray test instead of 500 hours for standard painting)
48/60	**Spigot**	48/60 = spigot can be installed on 48 to 60 mm mast & bracket

The following table gives some ordering information based on a selection of configurations. Other possibilities are also available on request.

Designation	EOC
BGP340 LED55S/640 PSU I DM FG 48/60	06343800
BGP340 LED55S/640 PSU I DM FG P1 48/60	06358200
BGP340 LED55S/640 PSU I DM FG P3-35 48/60	06363600
BGP340 LED55S/640 PSR I DM FG DDF1 48/60	06368100
BGP340 LED55S/640 PSR I DM FG DDF2 48/60	06378000
BGP340 LED55S/640 PSR I DM FG DDF3 48/60	06388900
BGP340 LED55S/640 PSD I DM FG RF 48/60	06401500
BGP340 LED74S/640 PSU I DM FG 48/60	06344500
BGP340 LED74S/640 PSU I DM FG P1 48/60	06359900
BGP340 LED74S/640 PSU I DM FG P3-35 48/60	06364300
BGP340 LED74S/640 PSR I DM FG DDF1 48/60	06369800
BGP340 LED74S/640 PSR I DM FG DDF2 48/60	06379700
BGP340 LED74S/640 PSR I DM FG DDF3 48/60	06389600
BGP340 LED74S/640 PSD I DM FG RF 48/60	06399500
BGP340 LED92S/640 PSU I DM FG 48/60	06345200
BGP340 LED92S/640 PSU I DM FG P1 48/60	06360500
BGP340 LED92S/640 PSU I DM FG P3-35 48/60	06365000
BGP340 LED92S/640 PSR I DM FG DDF1 48/60	06370400
BGP340 LED92S/640 PSR I DM FG DDF2 48/60	06380300
BGP340 LED92S/640 PSR I DM FG DDF3 48/60	06390200
BGP340 LED92S/640 PSD I DM FG RF 48/60	06400800
BGP340 LED110S/640 PSU I DM FG 48/60	06346900
BGP340 LED110S/640 PSU I DM FG P1 48/60	06361200
BGP340 LED110S/640 PSU I DM FG P3-35 48/60	06366700
BGP340 LED110S/640 PSR I DM FG DDF1 48/60	06371100
BGP340 LED110S/640 PSR I DM FG DDF2 48/60	06381000
BGP340 LED110S/640 PSR I DM FG DDF3 48/60	06391900
BGP340 LED110S/640 PSD I DM FG RF 48/60	06401500

Designation	EOC
BGP340 LED55S/640 PSU II DM FG 48/60	06348300
BGP340 LED55S/640 PSR II DM FG D13 48/60	06353700
BGP340 LED55S/640 PSR II DM FG DDF1 48/60	06373500
BGP340 LED55S/640 PSR II DM FG DDF2 48/60	06383400
BGP340 LED55S/640 PSR II DM FG DDF3 48/60	06393300
BGP340 LED55S/640 PSU II DM FG MSP 48/60	06435000
BGP340 LED55S/640 PSD II DM FG RF 48/60	06403900
BGP340 LED74S/640 PSU II DM FG 48/60	06349000
BGP340 LED74S/640 PSR II DM FG D13 48/60	06354400
BGP340 LED74S/640 PSR II DM FG DDF1 48/60	06374200
BGP340 LED74S/640 PSR II DM FG DDF2 48/60	06384100
BGP340 LED74S/640 PSR II DM FG DDF3 48/60	06394000
BGP340 LED74S/640 PSU II DM FG MSP 48/60	06436700
BGP340 LED74S/640 PSD II DM FG RF 48/60	06404600
BGP340 LED92S/640 PSU II DM FG 48/60	06350600
BGP340 LED92S/640 PSR II DM FG D13 48/60	06355100
BGP340 LED92S/640 PSR II DM FG DDF1 48/60	06375900
BGP340 LED92S/640 PSR II DM FG DDF2 48/60	06385800
BGP340 LED92S/640 PSR II DM FG DDF3 48/60	06395700
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BGP340 LED92S/640 PSD II DM FG RF 48/60	06405300
BGP340 LED110S/640 PSU II DM FG 48/60	06351300
BGP340 LED110S/640 PSR II DM FG D13 48/60	06356800
BGP340 LED110S/640 PSR II DM FG DDF1 48/60	06376600
BGP340 LED110S/640 PSR II DM FG DDF2 48/60	06386500
BGP340 LED110S/640 PSR II DM FG DDF3 48/60	06396400
BGP340 LED110S/640 PSU II DM FG MSP 48/60	06438100
BGP340 LED110S/640 PSD II DM FG RF 48/60	06406000

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Document order number: 3222 635 66992
03/2012
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