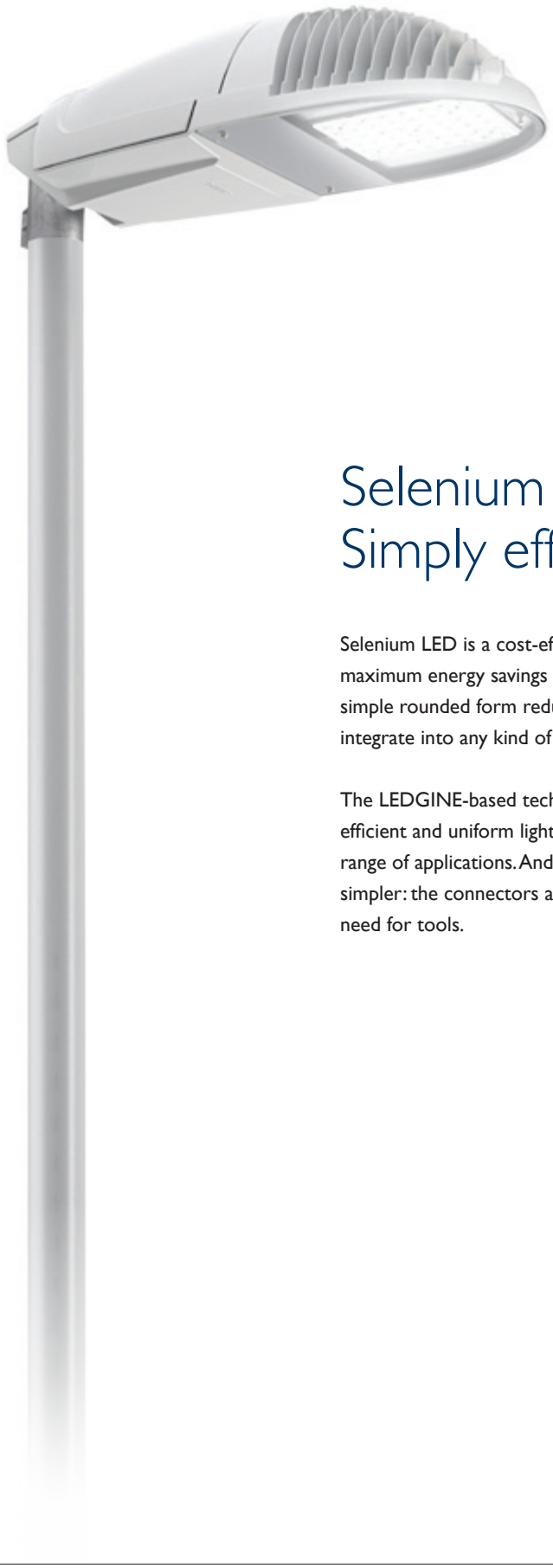
# Selenium LED

Simply efficient

LEDGINE
BASED TECHNOLOGY

PHILIPS
sense and simplicity



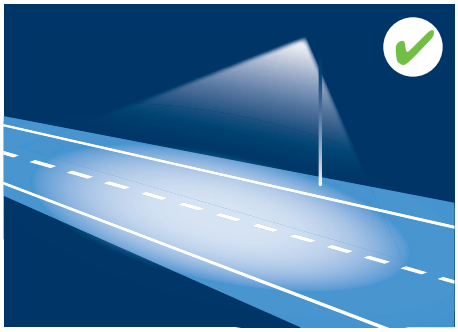
# Selenium LED - Simply efficient

Selenium LED is a cost-effective road-lighting luminaire that delivers maximum energy savings compared with conventional solutions. Its simple rounded form reduces its daytime visual impact, allowing it to integrate into any kind of environment.

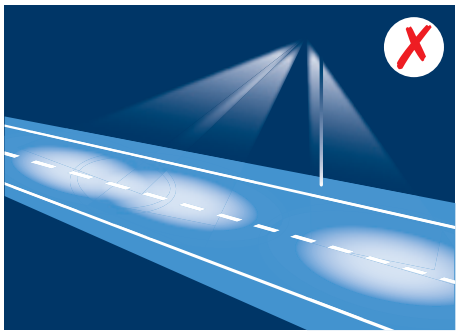
The LEDGINE-based technology inside the luminaire ensures an efficient and uniform light distribution, covering the widest possible range of applications. And installation and maintenance could not be simpler: the connectors and driver are directly accessible, without the need for tools.

# Selenium LED: low initial investment with high performance

Selenium LED uses LEDGINE-based technology with proven components and a high degree of uniformity thanks to its dedicated multi-layer concept. Featuring neutral white LEDs (4000 K), Selenium LED offers the best 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

## Main 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 |
| | 107 W | 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 |
| **Lumen depreciation** | L70 at > 100,000 hours |
| | L85 at 50,000 hours |
| **Lifetime** | 60,000 hours |
| **Lighting Distribution** | Medium beam |
| **Color Temperature** | Neutral White (4000 K) |
| **Color Rendering Index (CRI)** | > 70 |

(*) available from Q4/2012

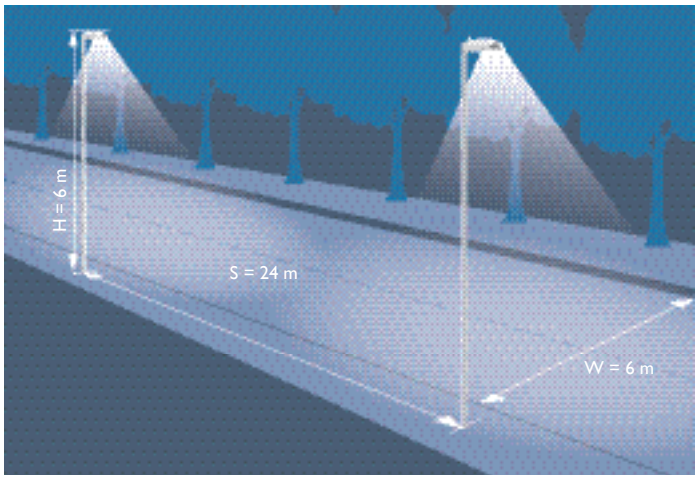
# Selenium LED: minimum initial investment for maximum savings

**Assumptions:**

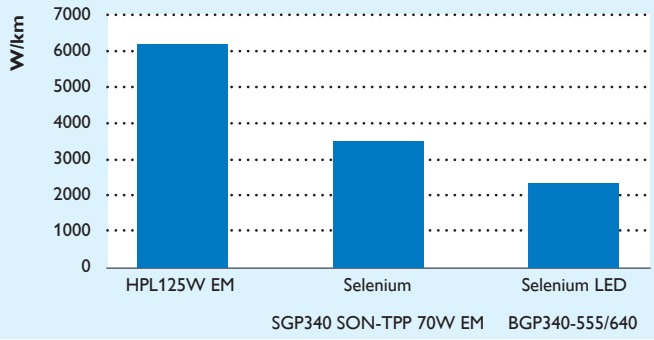
- Lighting class: ME4b (L ≥ 0.75 cd/m$^2$; Uo ≥ 0.4; Ui ≥ 0.5; Ti ≤ 15%; Sr ≥ 0.5)
- Carriageway: single
- Number of lanes: 2

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

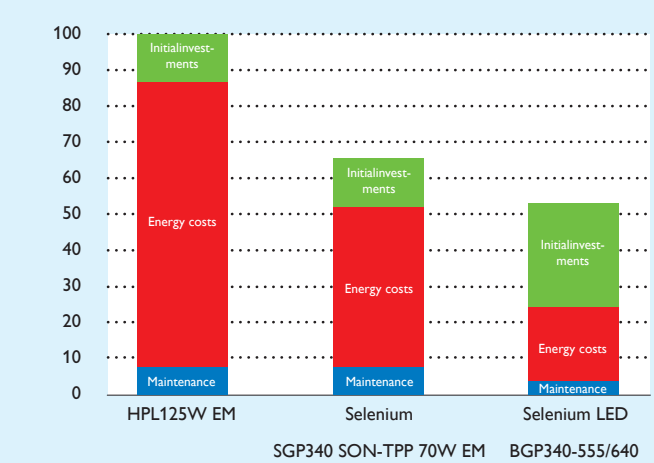



Selenium LED enables energy savings of up to 70% compared with an old HPL installation and is around 40% more efficient than a SON-TPP luminaire in retrofit applications.




**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.

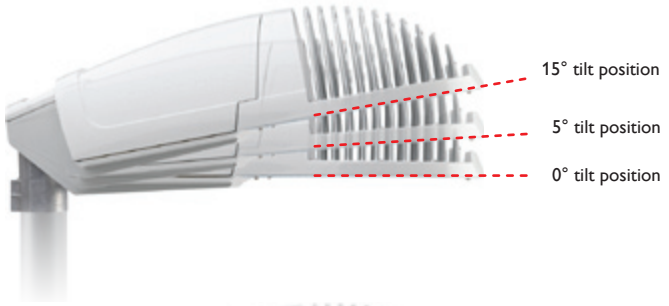


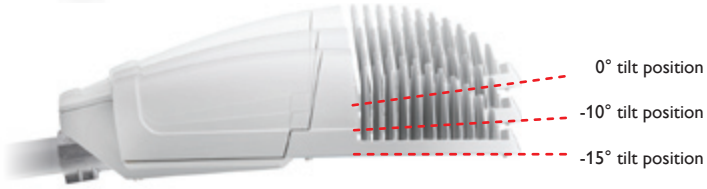
# Selenium LED: easy and flexible installation

**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 spigot is designed for pole or bracket diameters of 48 to 60 mm:



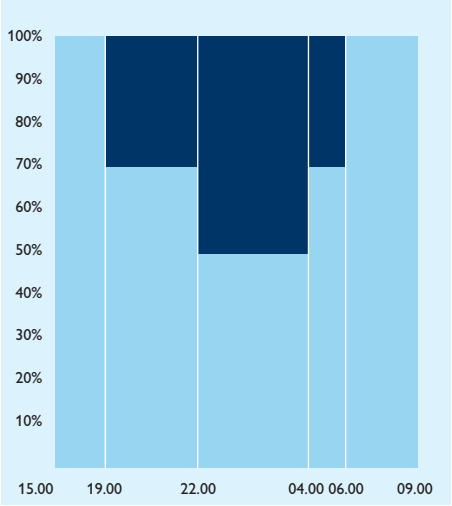

The connection to the mains cable is by means of a plug and socket connector:

# Integrated controls for additional energy savings

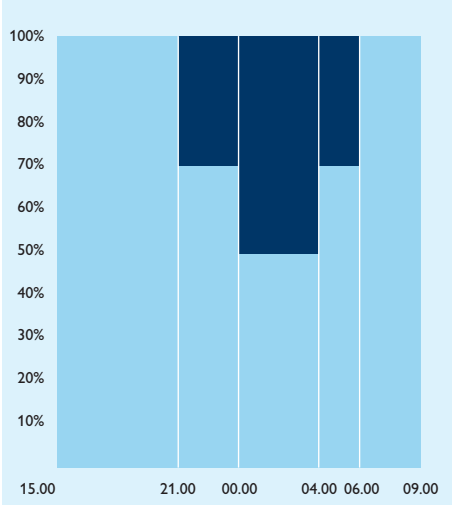
A good lighting system generates precisely the right level of lighting in the right place at the right time. Dynamic lighting control is an ideal means of saving energy without affecting light uniformity or safety.

### Integrated Dynadimmer (DDF)

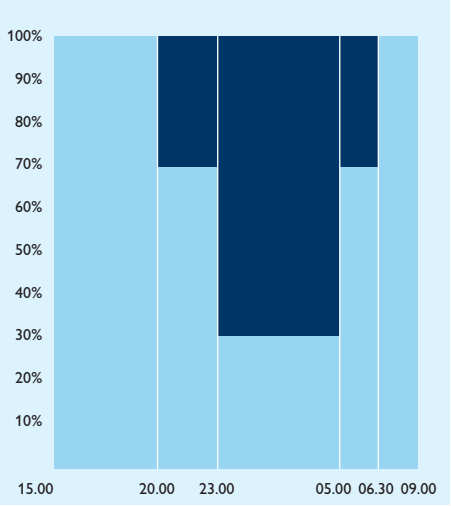
The integrated Dynadimmer is a stand-alone dimming device, programmed in the factory, which allows savings of up to 50% on your electricity bill. Three standard programs are available with different levels of dimming (DDF1, DDF2 & DDF3).




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



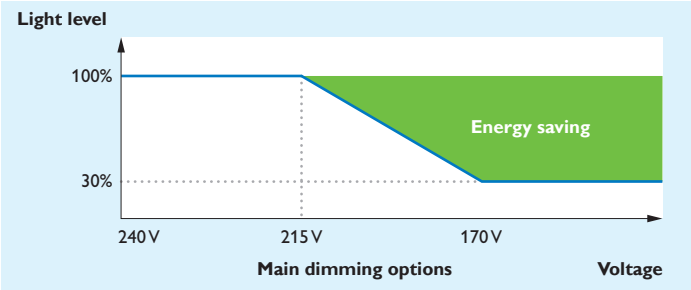

DDF2 standard program, allowing 32% energy savings over non-dimming version




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

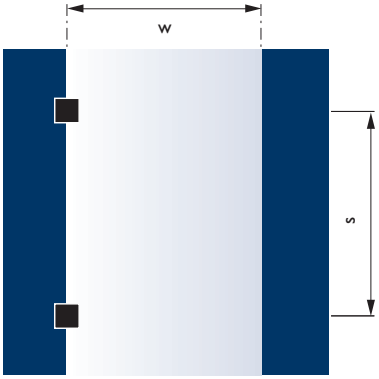
# Which configuration to choose for a given application?

The following overview indicates the installation parameters and the right Selenium LED configuration to choose in order to meet the EN 13-201 norm for 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

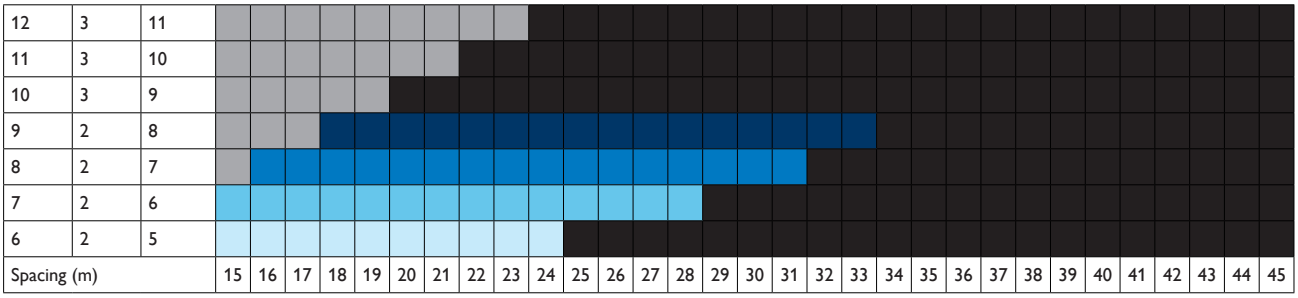
## Lighting classes

| 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 |

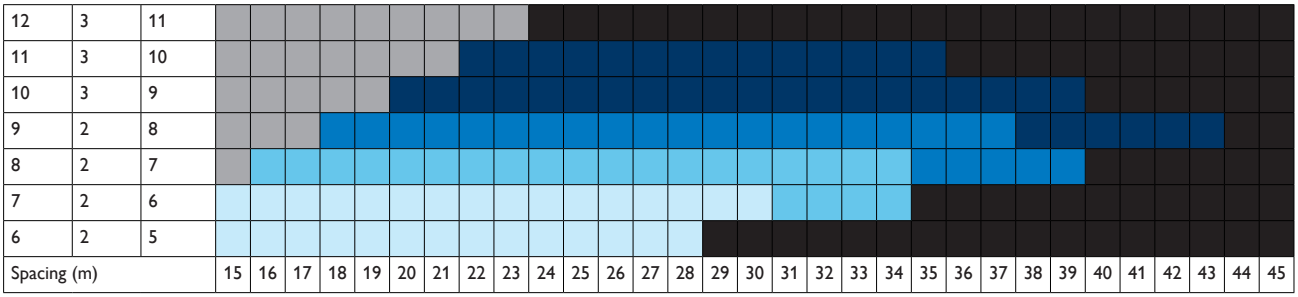
BGP340 LED110S 640
BGP340 LED92S 640
BGP340 LED74S 640
BGP340 LED55S 640

Area where s<2h
not possible

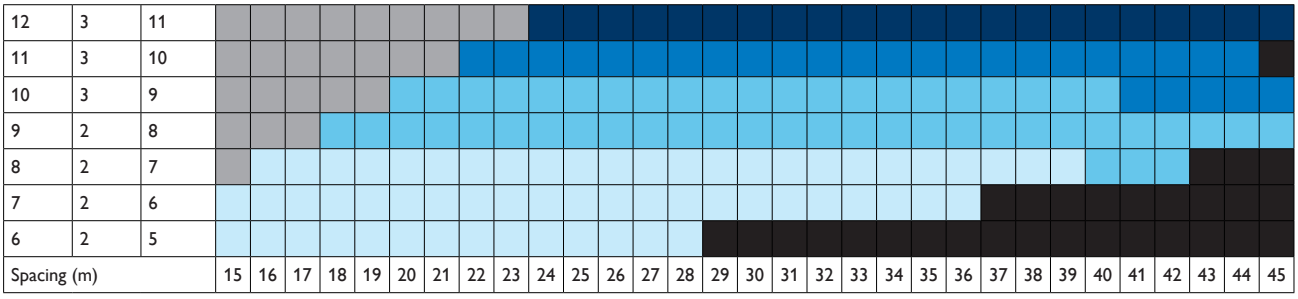
## ME3a




## ME4b



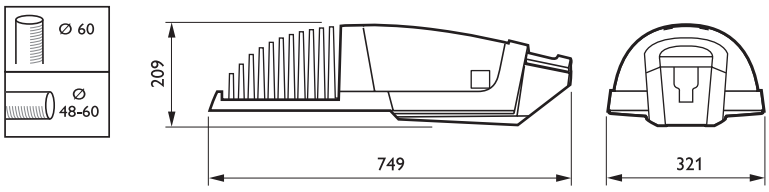

## ME5



# 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 or II |
| Glass cover | Flat glass, extra clear |
| Housing | Aluminum |
| Standard color | Grey (RAL 7035) |
| Weight max. | 11 kg |
| | |
| Opening of the luminaire | From the top without tool |
| Mounting 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 • LED37S/ • LED55S/ • LED74S/ • LED92S/ • LED110S/ |
| 640 | **Light Source CRI / Light source color** | 640 = CRI > 70 and color 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 • II = Safety Class II |
| 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)<br>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 |
| BGP340 LED92S/640 PSU II DM FG MSP 48/60 | 06437400 |
| 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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