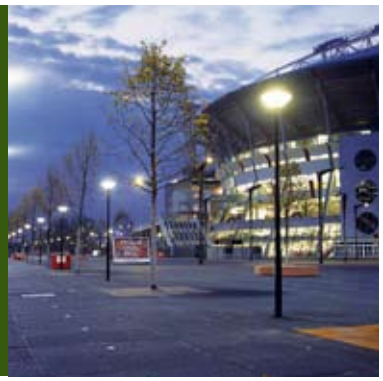
2000 Series

IP 66 **IK 08** **Class I** **Class II** ⧈



The basis of the Kegel series is represented by the 2000 series. A timeless and widely accepted concept of whom already more than one million pieces have been installed. A wide range of variations have been created in order to suit the specific demands and the environment. This modularity in combination with dedicated optics, offers an almost universal solution with high efficiency in many lighting applications.
All this wrapped up in an extreme vandal resistant package.

Applications
Consult pages 16-19
Lamps
Compact fluorescent
up to 55W (FSD)
up to 57W (FSM)
High pressure sodium
up to 150W
Ceramic metal halide
up to 150W
Low pressure sodium
up to 55W
Fluorescent tubular
up to 18W

Gear tray 1

Canopy Ø 411mm


2015


2035


2040

Canopy Ø 620mm


2017


2037


2042

Gear tray 1 (Bowl max. Ø 411mm)

Gear tray 2 (Bowl max. Ø 562mm)

Gear tray 3 (Bowl max. Ø 680mm)

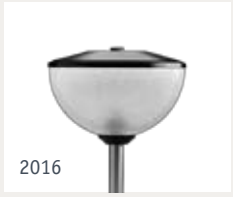
Gear tray 4 (Comfort bowl Ø 562-680mm)

Gear tray 1, 2 and 4

Canopy Ø 562mm


2000


2010


2016


2022


2025


2060

Canopy Ø 750mm


2003


2013


2019


2029


2023


2063

Canopy Ø 843mm


2005


2012


2018


2027


2020


2065

Canopy special Ø 680 mm


2030

Gear tray 1, 2, 3 and 4

Canopy Ø 680mm


2050

2000 Series

COMPONENTS

1 **Canopy** glass fibre reinforced polyester painted, standard RAL 9005 exterior and RAL 9016 white interior.

2 **Lock nut** die-cast (LM6 quality) aluminium, painted standard in RAL 9005.

3 **Bowl** made of high impact resistant and UV stabilized polycarbonate, available in a diamond structure or a fine frosted structure on the interior and a smooth exterior (IK 08).

4 **Spigot** die-cast (LM6 quality) aluminium, specific for post top Ø 76mm or Ø 60mm (specify on order). Standard painted in RAL 9005.

5 **Gasket** between canopy and bowl, spigot and bowl and closing nut and canopy seals lantern to IP 66. Controlled Breathing Technology (CBT), through the spigot prevents build up of condensation.

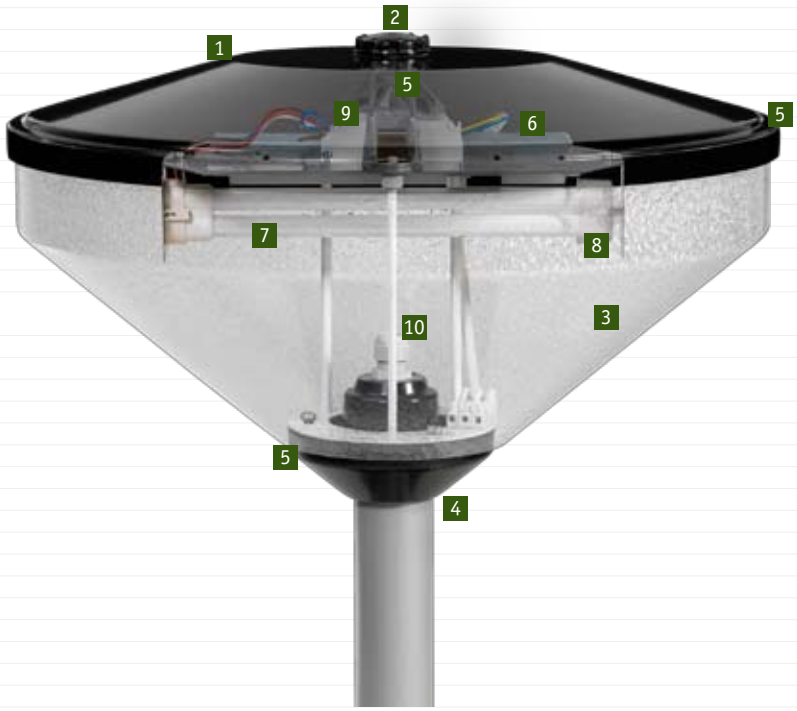
6 **Steel frame** (painted RAL 9016) holds the galvanised steel plate securely in place. Comfort optic steel plate, painted in white for reflection. The gear tray is hingable for easy access to the lamp.

7 **Optics** dedicated, high purity aluminium optics per lamp type for optimum results.
For high pressure sodium (ST) and ceramic metal halide (MT) lamps symmetric (SDN or SFN) or asymmetric (ADN or AFN).
For compact fluorescent (FSD and FSDH) lamps symmetric (SDN or SFN), lamp adjustable in horizontal (H) or vertical (V=standard) position for optimum (H) illuminance or (V) semi-cylindrical results.
For compact fluorescent (FSM) lamps symmetric (SDN or SFN) or asymmetric (ADN or AFN).
For 2000 Comfort version, symmetric (CDN or CFN), integrated in the white gear tray for optimum G classification (maximum G3).

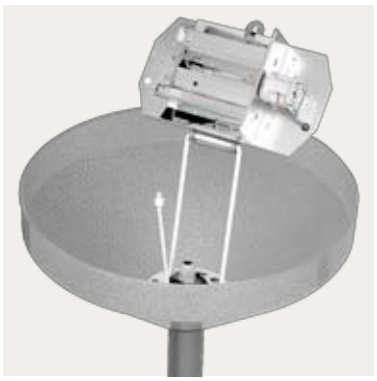
8 **Thermofix®** warrants optimal temperature behaviour for compact fluorescent (FSD and FSDH).

9 **Gear**
Compact fluorescent: standard electronic.
High pressure sodium: conventional, power factor corrected (PFC).
Ceramic metal halide: conventional, timed ignitor, power factor corrected (PFC).

10 **Cable connection** PG 16 gland, cable entry 6-14mm, with strain relief.



Optic FSD (reflector SDN).



Optic ST (reflector SDN).

Optic ST (reflector ADN).

Models
The 2000 series offers a very wide possibility to mix and match on the basis of a range of standardised components. This flexibility makes it possible to vary shapes from area to area whilst retaining the (light) technical heart of the lantern and limiting the number of necessary spare parts in the workshop.

2030
Square shape, offering a distinguishing and refined look to the surrounding.

2050
The large shape offers the possibility for higher wattages, while retaining the appearance in the surrounding.

2060
Contemporary redesign while retaining the strong proven technical concept.

Mounting
Reliable and easy column mounting with a stainless steel M10 bolt, perpendicular to the road axis for a correct position of the optic. There are versions for Ø 60mm and Ø 76mm column tops.

Fast connection of the power supply cable can be achieved quickly and easily through the plug/socket connection on the spigot.

Maintenance
The canopy can be removed, without using tools, after unscrewing the lock nut. The lock nut can only be tightened up to the stop, when locking the lantern to ensure that negative influence is not exerted on the gasket. The lamp can easily be reached by manually unhinging and, thus, opening the gear tray from the spring clip. When using the Lighting Comfort louvre frame, this frame can first be removed by only manually unhinging the second spring clip.

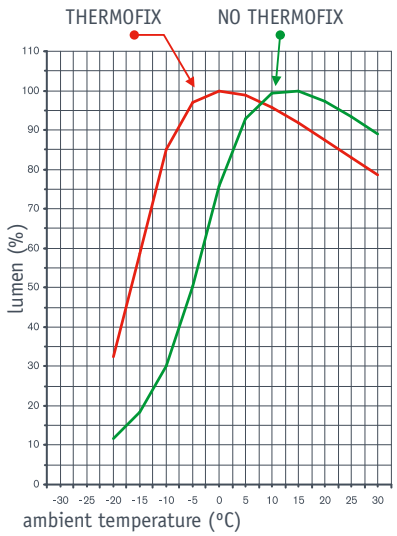
Lock nut.

Gear tray.

Gear tray secured.

Spring clip.

Temperature flux curve FSD-36

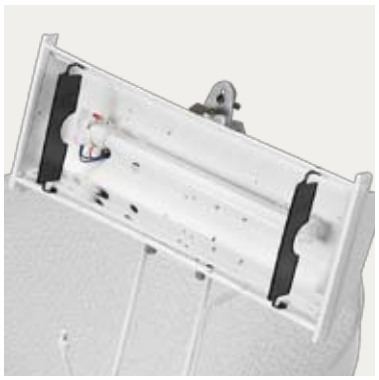


FSD-36: At 10° the light efficiency of a lantern without Thermofix declines to 30%. With Thermofix the light performance stays the same, 85%.

Lighting Comfort System

The Compact Fluo Comfort optic is the newest development for the FSD-24 and 36W lamps often used in residential areas.
The Compact Fluo Comfort optic has an advanced 2D reflector system made of high-quality aluminium and the gear tray has a special reflective coating. This optic has been specifically designed for the compact fluorescent (FSD and FSDH) lamps so that a high 78% efficiency can be attained.
The reflectors are inside the gear tray to limit light emission in an undesirable direction. This adds a new dimension to the occurrence of glare, light pollution and obtrusive light.
They are, moreover, affixed to the gear tray to ensure exact positioning of the optic.
Unnecessary damage during installation, lamp replacement and maintenance is, thus, avoided.

Gear tray Comfort.



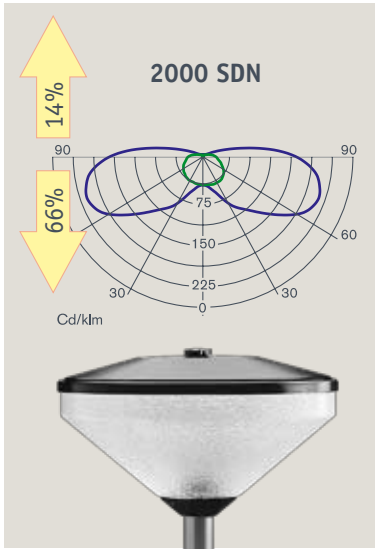
Gear tray Comfort with louvres.

Gear tray Comfort with Lighting Comfort louvre frame.

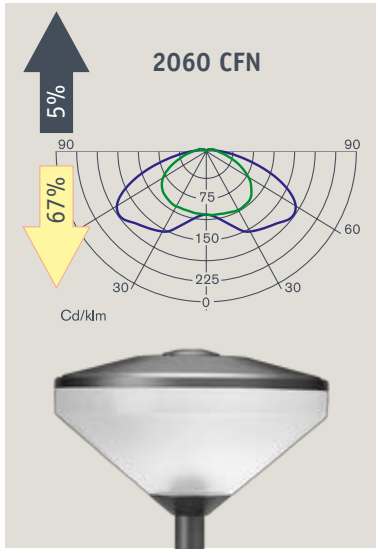
Light pollution

The Compact Fluo Comfort optic for the Kegel Comfort has been designed with a very high Light Output Ratio of 78% (72% with frosted bowl), to ensure that light is obtained where it is needed (on the street).
The lamp has, moreover, been positioned in the reflector optic, so that we can have an Upward Light Output Ratio of 6% which is very low for this type of lanterns (this is even 5% with a frosted bowl). In other words: glare has been limited to a minimum.

Result: up to 65% less light pollution with regard to many existing lanterns.



2000 Series with diamond bowl structure.



2060 Series with frosted bowl structure.

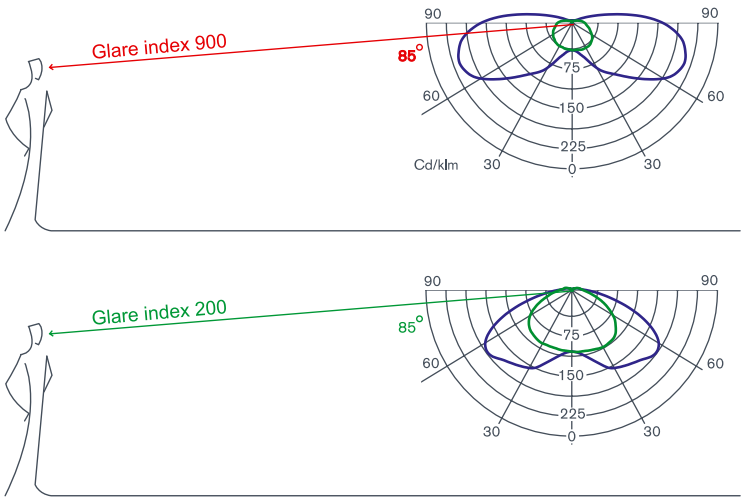
Discomfort Glare
It is becoming more and more important in residential areas to limit discomfort glare in situations not directly linked to traffic for people in and outside residential areas, as well as preventing glare situations for those who participate in traffic situations.
A benchmark specified for this in the EN 13201 is the D glare index.
D classes specify limits that the luminance of the light-emitting surface must meet in the horizontal direction for functional/decorative lanterns.

D CLASSIFICATION TABLE

Class:	D1	D2	D3	D4	D5	D6
Maximum glare index:	7000	5500	4000	2000	1000	500

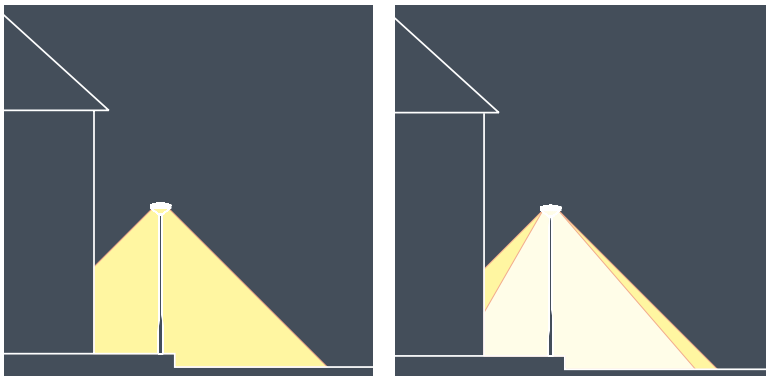
A = Light-emitting surface (m^2).
I = Maximum light intensity (cd) under 85°
(with downward vertical) around the lantern

Glare index D = I x A – 0,5
Source: EN13201



Obtrusive light
Residents are increasingly articulating their reactions to nuisance caused by public lighting and this is especially the case with obtrusive light onto houses. Sometimes irritating situations can be foreseen during the design phase, but often they only appear in practice.
The Lighting Comfort system in the Kegel Comfort offers a solution.
You can click a louvre frame beforehand or afterwards on the Compact Fluo Comfort optic in which a maximum of eight louvres can be mounted depending on requirement.
This is a unique option for designers and clients.

Result: the obtrusive light can be reduced with 30%, to no less than 80%, depending on the column height and the distances to the house fronts. A more comfortable lighting installation!



Standard obtrusive light facilities
There are also a number of bowl options available (that can also be mounted afterwards) for the standard Kegel for compact fluorescent and high pressure sodium lamps as well as the Lighting Comfort louvres in the 2000 Series Comfort.

Anti-glare reflectors for FSD/FSDH versions
White coated and can be mounted behind the lamp holder bracket.
Type 102017150 for small size bowl (Ø 411mm).
Type 112000340 for other bowl sizes.

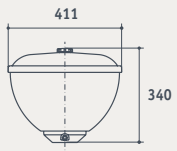
Anti-glare reflectors for ST and MT versions
White coated and can be mounted behind the lamp holder bracket.
Type 112000360 for all gear tray types.

Bowl segments
Opal quarter bowl segments are available for different 2000 series that can be slid on the inside of the bowl. For example, type 186541420 for version 2000/2005.

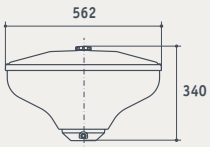
2000 Series

DIMENSIONS & PHOTOMETRY

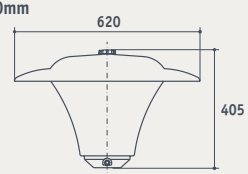
Ø 411mm



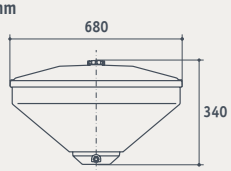
Ø 562mm



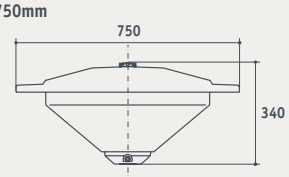
Ø 620mm



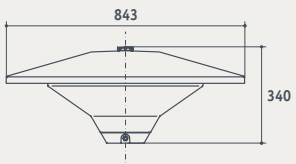
Ø 680mm



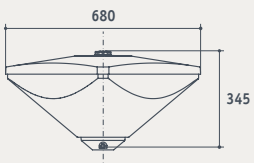
Ø 750mm



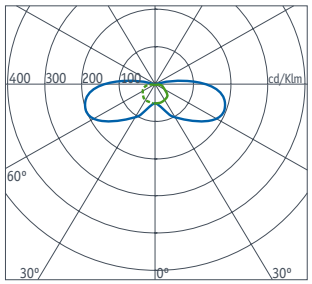
Ø 843mm



Ø 680mm



2000 Series

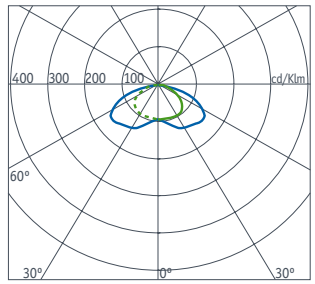


Reflector
SDN/V

Lamp
FSD-36

Performance
ULOR: 14%
DLOR: 66%

2060 Series

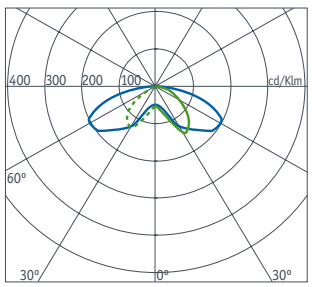


Reflector
CFN

Lamp
FSD-36

Performance
ULOR: 5%
DLOR: 67%

2000 Series

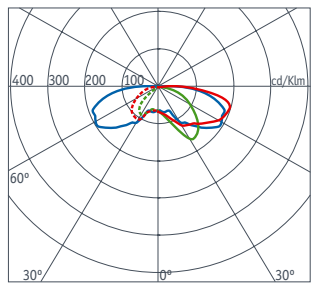


Reflector
SDN/V

Lamp
ST-70

Performance
ULOR: 5%
DLOR: 69%

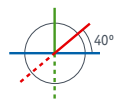
2000 Series



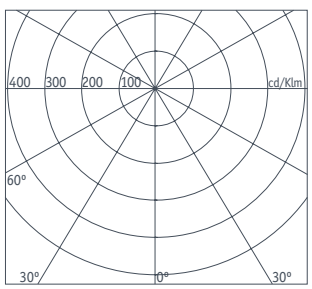
Reflector
ADN

Lamp
ST-70

Performance
ULOR: 6%
DLOR: 67%



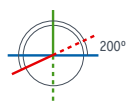
2060 Series



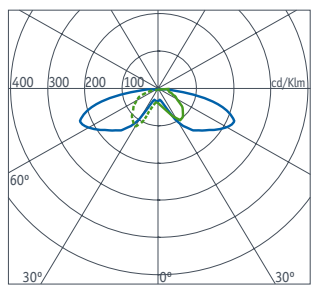
Reflector
SFN

Lamp
ST-70

Performance
ULOR: 6%
DLOR: 70%



2015 Series



Reflector
SDN

Lamp
MT-90

Performance
ULOR: 6%
DLOR: 74%

MODEL	TYPE	SHAPE	LAMP HOLDER	GEAR TRAY				REFLECTOR(1)					W.a. (m^2)	Kg
				1	2	3	4	S	A	W	C	L		
2000 Series	FSD-18/24		2G11	•			•	•			•	•	0.11 - 0.17	4 - 8.5
(all tipes)	2FSD-24		2G11	•				•						
	FSD-36		2G11		•		•	•			•	•		
	2FSD-36		2G11		•			•						
	FSDH-55		2G11			•		•						
	FSM-26/32/42		GX24q-3/4	•				•	•					
	FSM-57		GX24q-5	•				•	•					
	ST/MT-50/70		E27	•				•	•	•				
	ST/MT-70/50		E27	•				•	•	•				
	2ST/MT-70/50		E27		•			•	•	•				
	ST/MT-100		E40	•				•	•	•				
	ST/MT-150		E40		•			•	•	•				
	SE-50-70		E27	•				•		•				
	SE-70-50		E27	•				•		•				
	MT-35		G12	•				•	•					
	MT-45		PGZ12	•				•	•					
	MT-60		PGZ12	•				•	•					
	MT-70		G12	•				•	•					
	MT-90		PGZ12	•				•	•					
	MT-140		PGZ12	•				•	•					
	MT-150		G12	•				•	•					
	LSE-E26		BY22d		•			•						
	LS-35		BY22d		•			•						
	LSE-E36		BY22d			•		•						
	LS-55		BY22d			•		•						
	FD-18		G13			•		•						
	2FD-18		G13			•		•						

FSM-FSD-FSDH (Compact fluorescent)
ST-SE (High pressure sodium)
MT (Ceramic metal halide)
FD (Fluorescent tubular)
LS-LSE (Low pressure sodium)

W.a. (Windage area)
Kg (Weight)

(1) S = Symmetric
A = Asymmetric
W = White coated gear tray
C = Comfort
L = Lighting Comfort louvre

For more information about lamps, consult pages 386-389. For model and gear tray combinations, consult page 143.

OPTIONS

Including lamp and cable
Wired for cell (WFC), mini Photocell or NEMA version
Other RAL colours on request
DIM versions
Class II versions
Electronic ballast for ST/MT

ACCESSORIES

784890000	Adapter Ø 76-60mm
902000100	Louvre frame without louvres
902000200	Louvre frame with 2 louvres
902000300	Louvre frame with 8 louvres
902000400	Set of 8 louvres