

Sammode  
Technical lighting since 1927



LED

Luminaire

Pascal





# Specialist

in technical lighting

Specializing in technical lighting, SAMMODE has been an active partner in the lighting manufacturing since 1927. Our luminaires meet the high quality and technical standards required, are designed to obtain an exceptional lifespan under extreme conditions. Sammode offers lighting solutions for all the agri-food processes, meeting all quality, security and hygiene standards and procedures in force (HACCP, IFS ...).

Pioneers into the use of LED solutions in industrial environment, since 2009 SAMMODE have developed the CELSIUS range, a solution for sustainable lighting between  $-45^{\circ}$  and  $-60^{\circ}\text{C}$ .

Today Sammode presents PASCAL, a range of LED luminaires specifically engineered to meet the requirements and technical constraints for illuminating production processing and storage facilities for food industry. Our expertise in our commitment to ongoing development allows us to offer solutions using the the most up to date technology relating to industrial lighting, specifically for cold ambients.

## 5 strong points



### ROBUST

Resulting from our engineering expertise, our luminaires are designed to be shock resistant IK10 (20 Joule). The robustness of the housing, the quality of selected materials and components are a guarantee of long-term investment.



### IMPERVIOUS

The absolute imperviousness (IP68) of our luminaires, even under high pressure jet cleaning (IP69K) guarantees their performance during their lifespan.



### RESISTANT

The quality of carefully selected materials such as stainless steel or coextruded polycarbonate/methacrylate especially stands chemical aggressions from detergents and cleaning agents.



### EFFICIENT

The high efficiency LED modules used for the PASCAL ranges enable an optimum lighting level whilst reducing energy consumption.

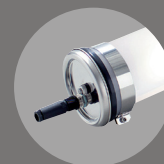


### EVOLUTIVE

The exceptionnal durability and the accessibility of the luminaire envelope will allow a retrofit of the LED modules (guaranteed for 5 years) with new generation, for lower energy consumption and saving of energy costs.

# Pascal

2 versions



If you wish to lower the energy consumption of your existing lighting installation with an option that gives instant start at -20°C and supplies a constant luminous flux between ambient temperatures of -20°C to +35°C, then the PASCAL is available in two versions.

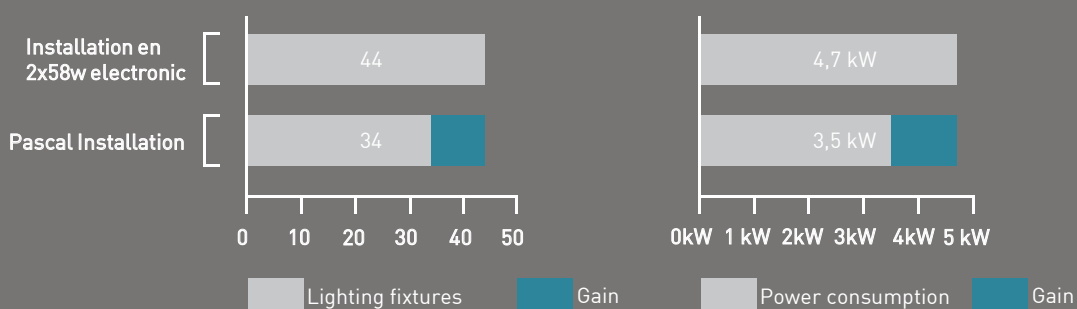
## NEW WORK VERSIONS

Because you also want to reduce the number of light fittings:

Sammode offers «New work versions» manufactured to give optimum light distribution using fewer luminaires than when using traditional fluorescent luminaires with the additional benefit of reduced energy consumption.

### Example :

New built room 50m x 20mx 5m for an average illuminance of 300 lux according standards



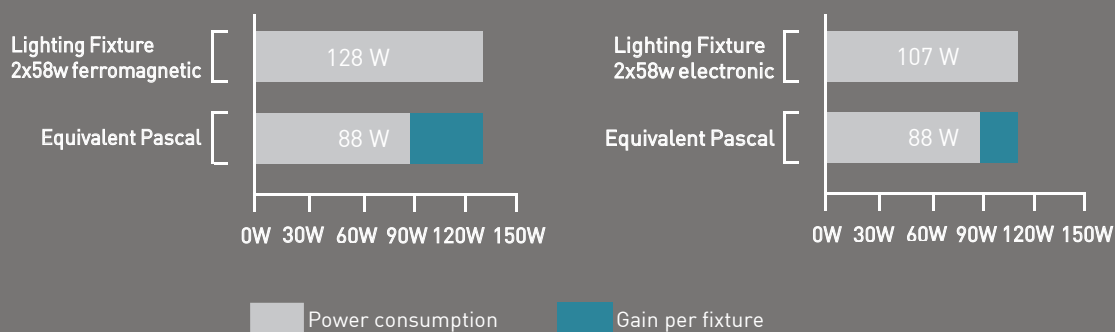
## ONE FOR ONE REPLACEMENT VERSIONS

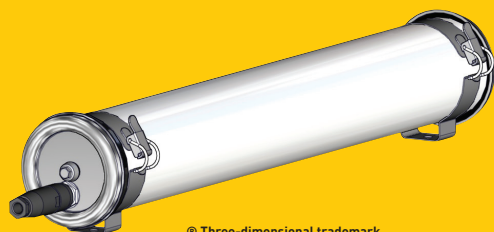
Because you do not want to change the layout of your installation but you just want a one for one direct replacement:

Sammode offers “Retrofit versions” made to accommodate a “one for one” replacement with a constant lighting level but for less power consumption.

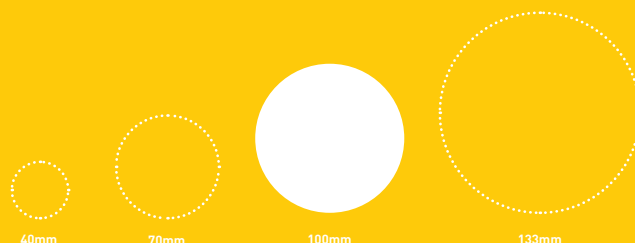
### Example :

Retrofitting existing 2x58W ferromagnetic or electronic lighting fixtures





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SUITABLE FOOD INDUSTRY - LED - FROM 1850 TO 5550 lm - CLASS 1

# PASCAL 100

## IMPERVIOUS TUBULAR LIGHT FITTING FOR FOOD INDUSTRY PROCESS

### LED TECHNOLOGY

Instant full flux independant from operating temperature

Insensitive to on/off switching cycles

No UV emission

### TUBULAR

Increased mechanical resistance

Easy to clean

Limited dirt accumulation

360° orientation

### IMPERVIOUS (IP68/IP69K)

Absolute imperviousness

No internal dust accumulation

Maximum light output

Adapted for pressure cleaning

### EASY INSTALLATION AND MAINTENANCE

Easy opening and closing with just one screw

Retrofittable LED modules and drivers

### ROBUST

Special coextruded diffuser with excellent mechanical and chemical resistance

### DURABLE

High resistance to corrosion and external aggression

Robustness of the housing, quality of the materials and components : long-term investment

LED and driver service life : 50 000h



<b>ELECTRICAL CLASS</b>	<b>CLASS 1</b>
<b>FIRE RESISTANCE</b>	<b>650°C</b>
<b>PROTECTION</b>	<b>IP68/IP69K</b>
<b>SHOCK RESISTANCE</b>	<b>IK10</b>
<b>OPERATING TEMPERATURE</b>	<b>-20°C +35°C</b>

## DESCRIPTION

### HOUSING

- Ø100mm diffuser in coextruded polycarbonate/ methacrylate associating :
  - the mechanical strength of the polycarbonate
  - the resistance to cleaning agents of the methacrylate
- End caps ½ ring press-formed in 304L stainless steel (316L also available)
- Gaskets moulded in EPDM
- Plug and play installation via disconnectable plug for maintenance out of process zone

### GEAR TRAY WITH LED MODULES

- Gear tray in white powder coated steel
- Light mixing chamber
- Heat sink in aluminum
- High efficiency (133lm/W) LED modules :
  - service life 50 000h
  - color temperature : 3000°K (4000°K available)

- IRC > 80

- Integrated 220/240V 50/60Hz constant current LED driver

### INSTALLATION - MAINTENANCE

- Connection via disconnectable plug 3x1,5 mm² with aluminium threaded ring (no tool necessary)
- Installation with 2 stainless steel straps with snap lock with variable centre distance and allowing 360° orientation (available in a reinforced model)
- Maintenance by removing the end-cap and sliding the guided gear plate (patented system)
- Electronic components (LED modules and driver) with very long service life (50 000h) can be easily retrofitted to take advantage of the resistance of the luminaire and ensure the efficiency of your investments and protection of environment

## OPTIONS

DESCRIPTION	OPTION CODE	DESCRIPTION	OPTION CODE
<b>FINISHINGS</b>		<b>ACCESSORIES</b>	
End caps and fixing straps in 316L stainless steel	MR	Upstand kit (5 or 20cm) for fire safety standards	
<b>FIXINGS</b>			
Reinforced bolt-fitted fixing straps	BRS		

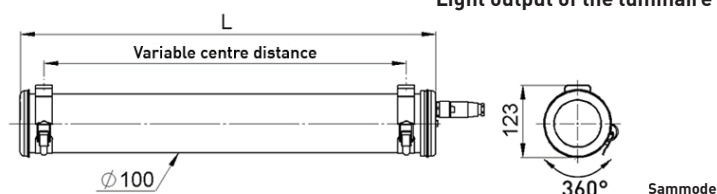
## MAIN REFERENCES - ONE FOR ONE REPLACEMENT VERSIONS

POWER	DESIGNATION	CODE	OPTICS	FLUX* (lm)	L (mm)	WEIGHT (kg)
	<b>Equivalent to 1x36W T8</b>					
26W	PAS100 13H830 POME PS3 SA	4160 0060		2775	1018	3
	<b>Equivalent to 1x58W T8</b>					
44W	PAS100 15H830 POME PS3 SA	4160 0080		4625	1618	4,4

## MAIN REFERENCES - NEW WORK VERSIONS

POWER	DESIGNATION	CODE	OPTICS	FLUX* (lm)	L (mm)	WEIGHT (kg)
18W	PAS100 12H830 POME PS3 SA	4160 0100		1850	708	2,1
35W	PAS100 14H830 POME PS3 SA	4160 0070		3700	1318	3,6
52W	PAS100 16H830 POME PS3 SA	4160 0090		5550	1850	5,2

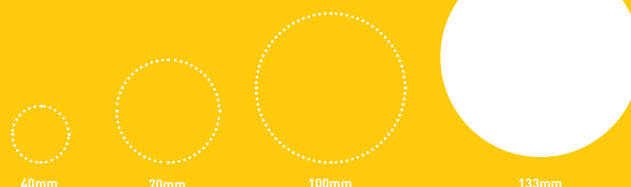
\* Light output of the luminaire



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SUITABLE FOOD INDUSTRY - LED - FROM 5550 TO 11100 lm - CLASS 1

# PASCAL 133

## IMPERVIOUS TUBULAR LIGHT FITTING FOR FOOD INDUSTRY PROCESS

### LED TECHNOLOGY

Instant full flux independant from operating temperature  
 Insensitive to on/off switching cycles  
 No UV emission

### TUBULAR

Increased mechanical resistance  
 Easy to clean  
 Limited dirt accumulation  
 360° orientation

### IMPERVIOUS (IP68/IP69K)

Absolute imperviousness  
 No internal dust accumulation  
 Maximum light output  
 Adapted for pressure cleaning

### EASY INSTALLATION AND MAINTENANCE

Easy opening and closing with just one screw  
 Retrofittable LED modules and drivers

### ROBUST

Special coextruded diffuser with excellent mechanical and chemical resistance

### DURABLE

High resistance to corrosion and external aggression  
 Robustness of the housing, quality of the materials and components : long-term investment  
 LED and driver service life : 50 000h



**ELECTRICAL CLASS** CLASS 1  
**FIRE RESISTANCE** 650°C  
**PROTECTION** IP68/IP69K  
**SHOCK RESISTANCE** IK10  
**OPERATING TEMPERATURE** -20°C +35°C

## DESCRIPTION

### HOUSING

- Ø133mm diffuser in coextruded polycarbonate/ methacrylate associating:
  - the mechanical strength of the polycarbonate
  - the resistance to cleaning agents of the methacrylate
- End caps ½ ring press-formed in 304L stainless steel (316L also available)
- Gaskets moulded in EPDM
- Plug and play installation via disconnectable plug for maintenance out of process zone

### GEAR TRAY WITH LED MODULES

- Gear tray in white powder coated steel
- Light mixing chamber
- Heat sink in aluminum
- High efficiency (133lm/W) LED modules :
  - service life 50 000h
  - color temperature : 3000°K (4000°K also available)

- IRC &gt; 80

- Integrated 220/240V 50/60Hz constant current LED driver

### INSTALLATION - MAINTENANCE

- Connection via disconnectable plug 3x1,5mm² with aluminium threaded ring (no tool necessary)
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## OPTIONS

DESCRIPTION	OPTION CODE	DESCRIPTION	OPTION CODE
<b>FINISHINGS</b> End caps and fixing straps in 316L stainless steel	MR	<b>ACCESSORIES</b> Upstand kit (5 or 20cm) for fire safety standards	
<b>FIXINGS</b> Reinforced bolt-fitted fixing straps	BRS		

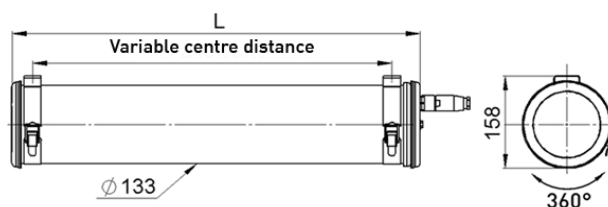
## MAIN REFERENCES - ONE FOR ONE REPLACEMENT VERSIONS

POWER	DESIGNATION	CODE	OPTICS	FLUX* (lm)	L (mm)	WEIGHT (kg)
	<b>Equivalent to 2x36W T8</b>					
52W	PAS133 23H830 POME PS3 SA	2260 0050		5550	995	4
	<b>Equivalent to 2x58W T8</b>					
88W	PAS133 25H830 POME PS3 SA	2260 0070		9250	1595	5,9

## MAIN REFERENCES - NEW WORK VERSIONS

POWER	DESIGNATION	CODE	OPTICS	FLUX* (lm)	L (mm)	WEIGHT (kg)
70W	PAS133 24H830 POME PS3 SA	2260 0060		7400	1295	4,9
104W	PAS133 26H830 POME PS3 SA	2260 0080		11100	1850	6,7

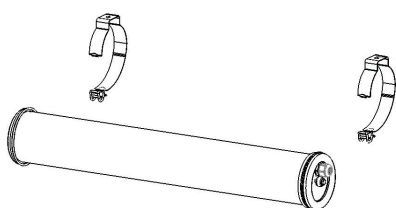
\* Light output of the luminaire



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# Installation

## QUICK MOUNTING



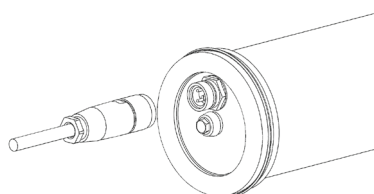
### QUICK MOUNTING BRACKETS

PASCAL luminaires are supplied with quick opening and closing stainless steel 304L fixing straps with snap lock. The positioning possibility over the entire length of the luminaire makes it easy to install on any type of supports. They can be delivered independently from the luminaire to the installer at the time of cable pulling.

Easy mounting allows maintenance outside the process area.



## PLUG AND PLAY



### IP68/69K IMPERVIOUS PLUG

PASCAL luminaires are equipped with a disconnectable plug with lock ring, allowing a quick «plug and play» installation. The female socket can be delivered before the luminaire to allow the installer to prepare wiring before the installation.

Easy mounting brackets and plug allow a fast and easy maintenance operation at workshop, avoiding any risk of falling objects in the process area.



## UPSTAND KITS



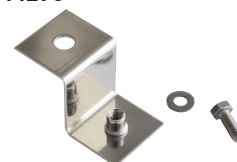
### UPSTAND KITS (50 mm or 200 mm)

In order to respect fire safety requirement defined by document APSAD D14A, Sammode proposes upstand kits. They ensure a minimum distance between the luminaire and the facing of the sandwich panel : 200 mm for pendant mounting, 50 mm for wall mounting.

Those kits consist of two 304L stainless steel sockets and hardware for fixing on brackets.

### REFERENCES

Designation : 50 upstand kit  
Code : PU44278



Designation : 200 upstand kit  
Code : PU44277





# Technical features

## COMPOSITE DIFFUSER

Sammode have developed a composite diffuser having a polycarbonate core coextruded with a methacrylate layer, to obtain the mechanical strength combined with exceptional chemical resistance:

- the polycarbonate core has a mechanical resistance IK10, 20 Joule
- the outer methacrylate layer offer a high resistance to harmful substances including cleaning products
- this intimate association combined to a proofed construction of the luminaire guarantees the solidity and integrity of the diffuser and prevents any fall of plastic parts

Its properties make it particularly adapted to the food industry environment.

## LED TECHNOLOGY

Sammode have had an LED development programme since 2009. Our in house development team concentrating on providing customised solutions for a range of LED luminaires for harsh environment having ambient temperature down to -60°C. This expertise enabled us to select the best current technology for industrial lighting.

The result:

- high efficiency LED modules (133lm/W)
- insensitivity to on/off cycles
- 100% instant luminous flux even at -20°C
- stability of light performances from -20°C to +35°C
- Interchangeable LED modules to benefit from future improvements in LED efficiency (lower consumption)
- Light mixing chamber for uniform light diffusion

## RECOMMENDED LIGHTING TABLE (EXTRACT FROM STANDARD EN 12464)

TYPE OF INTERIOR, TASK OR ACTIVITY	E (lx)	TYPE OF INTERIOR, TASK OR ACTIVITY	E (lx)
<b>Stores and warehouses</b>	100	<b>Food commodities and food industries</b>	
Maintenance, packaging and dispatch areas	300	Product sorting and washing, brushing, brewing and packaging	300
Shelf storage areas		Working areas and critical areas in slaughterhouses, butchers, dairies, flour mills and filtering areas	
Unoccupied central aisles	20	in sugar refineries	500
Occupied central aisles	150	Cutting and sorting of fruit and vegetables	300
Management or control station	150	Manufacture of ready meals, work in kitchens, manufacture of cigars and cigarettes	500
<b>Food commodities and food industries</b>		Checking of glasses and bottles, inspecting of products, cutting, sorting and decoration	500
Working areas in:		Laboratories	500
- breweries, malt houses,		Colour inspection	1000
- for washing, barrel-filling, cleaning, sieving, peeling		Changing rooms	200
- cooking in canned food and chocolate factories,			
- working areas in sugar refineries			
- for drying and work with raw tobacco, cellar fermentation	200		

To optimize your implementation and the choice of light fittings according to your constraints, please contact SAMMODE or our local representative.



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