



# Product Description

## MASTER SON PIA Plus

High Pressure Sodium lamp with opalized ovoid outer bulb, high output and long reliable lifetime

### Benefits

- Superior technology results in a long and reliable lifetime, high lumen maintenance and a reliable ignition over lifetime
- High energy efficacy and absence of lead (Pb) makes this a sound environmental offer
- High luminous efficacy makes this the most energy efficient HPS lamp

### Features

- Ovoid, internally white coated outer bulb
- Ceramic discharge tube with Philips Integrated Antenna (PIA) for a long and reliable lifetime
- Robust construction with few welding points is highly vibration- and shock-resistant, further reducing early failures and extending lamp life
- ZrCo getter ensures high lumen maintenance and few early failures
- "Plus" concept with high efficacy translated into high light output
- Completely lead-free lamps

### Application

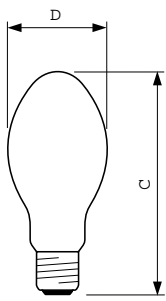
- Road and residential lighting
- Industrial lighting both indoor and outdoor
- Recreational sports facilities Outdoor and Indoor

# MASTER SON PIA Plus

## Versions



## Dimensional drawing



Product	D (max)	C (max)
MASTER SON PIA Plus 400W/220 E40 1SL/12	122 mm	290 mm
MASTER SON PIA Plus 250W/220 E40 1SL/12	91 mm	227 mm
MASTER SON PIA Plus 70W E27	71 mm	156 mm
MASTER SON PIA Plus 70W/220 I E27 1CT/24	70 mm	152 mm
MASTER SON PIA Plus 50W E27	71 mm	156 mm
MASTER SON PIA Plus 150W/220 E40 1SL/12	91 mm	227 mm

### Controls and Dimming

Dimmable	yes
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### General Information

LSF 4000 h Rated	99 %
LSF 6000 h Rated	99 %
LSF 8000 h Rated	99 %
Operating Position	UNIVERSAL

### Luminaire Design Requirements

Bulb Temperature (Max)	350 °C
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### Light Technical

Colour Code	220
Colour Rendering Index (Max)	25

### Mechanical and Housing

Bulb Finish	Coated
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## Approval and Application

Order Code	Full Product Name	Energy Consumption kWh/1000 h	Energy	
			Efficiency Label (EEL)	Mercury (Hg) Content (Nom)
18040100	MASTER SON PIA Plus 70W E27	78 kWh	A	12 mg
18038800	MASTER SON PIA Plus 50W E27	56 kWh	A	9.8 mg
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	79 kWh	A	16 mg
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	169 kWh	A+	15 mg
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	286 kWh	A+	15.1 mg
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	446 kWh	A++	20 mg

## Operating and Electrical (1/2)

## MASTER SON PIA Plus

Order Code	Full Product Name	Lamp			
		Current (EM) (Nom)	Voltage (Max)	Voltage (Min)	Voltage (Nom)
18040100	MASTER SON PIA Plus 70W E27	0.98 A	105 V	75 V	90 V
18038800	MASTER SON PIA Plus 50W E27	0.76 A	100 V	70 V	85 V
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	0.980 A	105 V	77 V	92 V
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	1.8 A	115 V	85 V	100 V

Order Code	Full Product Name	Lamp			
		Current (EM) (Nom)	Voltage (Max)	Voltage (Min)	Voltage (Nom)
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	2.85 A	115 V	85 V	100 V
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	4.3 A	120 V	90 V	105 V

### Operating and Electrical (2/2)

Order Code	Full Product Name	Power (Rated)	Re-Ignition Time
		(Nom)	(Min) (Max)
18040100	MASTER SON PIA Plus 70W E27	71.0 W	180 s
18038800	MASTER SON PIA Plus 50W E27	51.0 W	180 s
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	71.5 W	600 s
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	154.0 W	180 s

Order Code	Full Product Name	Power (Rated)	Re-Ignition Time
		(Nom)	(Min) (Max)
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	260.0 W	120 s
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	405.0 W	120 s

### General Information (1/2)

Order Code	Full Product Name	Cap-Base	Life To 10%	Life To 20%	Life To 50%
			Failures (Nom)	Failures (Nom)	Failures (Nom)
18040100	MASTER SON PIA Plus 70W E27	E27	20000 h	23500 h	30000 h
18038800	MASTER SON PIA Plus 50W E27	E27	17000 h	22000 h	30000 h
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	E27	17000 h	22000 h	30000 h

Order Code	Full Product Name	Cap-Base	Life To 10%	Life To 20%	Life To 50%
			Failures (Nom)	Failures (Nom)	Failures (Nom)
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	E40	24000 h	28000 h	36000 h
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	E40	24000 h	28000 h	36000 h
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	E40	24000 h	28000 h	36000 h

### General Information (2/2)

Order Code	Full Product Name	Life To 5% Failures	LSF 12000 h	LSF 16000 h	LSF 2000 h	LSF 20000 h	System Description
		(Nom)	Rated	Rated	Rated	Rated	
18040100	MASTER SON PIA Plus 70W E27	17000 h	99 %	96 %	99 %	90 %	External Ignitor (E)
18038800	MASTER SON PIA Plus 50W E27	14000 h	96 %	92 %	99 %	83 %	External Ignitor (E)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	14000 h	96 %	92 %	99 %	83 %	Internal Ignitor (I)
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	20500 h	99 %	98 %	100 %	95 %	External Ignitor (E)
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	20500 h	99 %	98 %	100 %	95 %	External Ignitor (E)
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	20500 h	99 %	98 %	100 %	95 %	External Ignitor (E)

### Light Technical (1/2)

# MASTER SON PIA Plus

Order Code	Full Product Name	Chromaticity Coordinate X (Nom)	Chromaticity Coordinate Y (Nom)	Correlated	
				Colour Temperature (Nom)	LLMF 12000 h Rated
18040100	MASTER SON PIA Plus 70W E27	540	410	1900 K	83 %
18038800	MASTER SON PIA Plus 50W E27	540	410	1900 K	87 %
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	-	-	1900 K	87 %
18228915	MASTER SON PIA Plus	535	420	2000 K	96 %

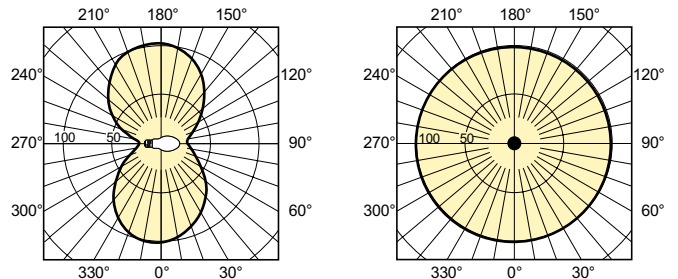
Order Code	Full Product Name	Chromaticity Coordinate X (Nom)	Chromaticity Coordinate Y (Nom)	Correlated	
				Colour Temperature (Nom)	LLMF 12000 h Rated
	150W/220 E40 1SL/12				
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	530	420	2000 K	96 %
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	525	425	2000 K	92 %

## Light Technical (2/2)

Order Code	Full Product Name	LLMF 16000 h Rated	LLMF 2000 h Rated	LLMF 20000 h Rated	LLMF 4000 h Rated	LLMF 6000 h Rated	LLMF 8000 h Rated	Luminous Efficacy (rated) (Nom)	Luminous Flux (Rated) (Nom)	Ratio
										Scotopic/Photopic Lumens
18040100	MASTER SON PIA Plus 70W E27	82 %	90 %	81 %	87 %	86 %	85 %	83 lm/W	5900 lm	0.50
18038800	MASTER SON PIA Plus 50W E27	86 %	92 %	86 %	90 %	89 %	88 %	76 lm/W	3900 lm	0.50
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	86 %	92 %	86 %	90 %	89 %	88 %	82 lm/W	5900 lm	-
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	95 %	99 %	94 %	98 %	97 %	96 %	108 lm/W	16100 lm	0.55
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	95 %	99 %	94 %	98 %	97 %	96 %	120 lm/W	30900 lm	0.60
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	90 %	99 %	88 %	97 %	96 %	94 %	136.5 lm/W	55400 lm	0.60

## Mechanical and Housing

Order Code	Full Product Name	Bulb Shape
18040100	MASTER SON PIA Plus 70W E27	B70
18038800	MASTER SON PIA Plus 50W E27	B70
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	B70
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	BD90
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	BD90
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	BD120



# MASTER SON PIA Plus

