



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

Warnings and Safety

- Control gear must include end-of-life protection (IEC60662, IEC 62035)
- A lamp breaking is extremely unlikely to have any impact on your health. If a lamp breaks, ventilate the room for 30 minutes and remove the parts, preferably with gloves. Put them in a sealed plastic bag and take it to your local waste facilities for recycling. Do not use a vacuum cleaner.

MASTER SON PIA Plus

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
Colour Rendering Index (Nom)	-

Mechanical and Housing

Bulb Finish	Coated glass
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Approval and Application

Order Code	Full Product Name	Energy Consumption	Mercury (Hg)	Mercury (Hg)
		kWh/1000 h	Content (Max)	Content (Nom)
18040100	MASTER SON PIA Plus 70W E27	72 kWh	12.2 mg	12.2 mg
18038800	MASTER SON PIA Plus 50W E27	52 kWh	9.8 mg	9.8 mg
20426430	MASTER SON PIA Plus 70W/220 I E27 ICT/24	72 kWh	16.3 mg	16.3 mg
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	154 kWh	15.1 mg	15 mg
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	101 kWh	16.3 mg	16.3 mg
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	250 kWh	15.1 mg	15.1 mg
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	408 kWh	19.6 mg	20 mg

Operating and Electrical (1/2)

Order Code	Full Product Name	Lamp			
		Current (EM) (Nom)	Voltage (Max)	Voltage (Min)	Voltage (Nom)
18040100	MASTER SON PIA Plus 70W E27	0.97 A	105 V	75 V	90 V
18038800	MASTER SON PIA Plus 50W E27	0.750 A	100 V	70 V	85 V
20426430	MASTER SON PIA Plus 70W/220 I E27 ICT/24	0.980 A	105 V	77 V	92 V
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	0.178 A	115 V	85 V	100 V

Order Code	Full Product Name	Lamp			
		Current (EM) (Nom)	Voltage (Max)	Voltage (Min)	Voltage (Nom)
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	0.119 A	115 V	85 V	100 V
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	0.300 A	115 V	85 V	96 V
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	0.441 A	120 V	90 V	105 V

Operating and Electrical (2/2)

Order Code	Full Product Name	Power (Nom)	Re-Ignition Time	
			(Min)	(Max)
18040100	MASTER SON PIA Plus 70W E27	72.0 W	180 s	
18038800	MASTER SON PIA Plus 50W E27	52.0 W	180 s	
20426430	MASTER SON PIA Plus 70W/220 I E27 ICT/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 (Nom)	Re-Ignition Time	
			(Min)	(Max)
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	101.0 W	120 s	
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	250.0 W	120 s	
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	408.0 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

Order Code	Full Product Name	Cap-Base	Life To 10%	Life To 20%	Life To 50%
			Failures (Nom)	Failures (Nom)	Failures (Nom)
18038800	MASTER SON PIA Plus 50W E27	E27	17000 h	22000 h	30000 h

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Order Code	Full Product Name	Cap-Base	Life To 10%	Life To 20%	Life To 50%
			Failures (Nom)	Failures (Nom)	Failures (Nom)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	E27	17000 h	22000 h	30000 h
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	E40	24000 h	28000 h	36000 h
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	E40	21000 h	25000 h	29000 h

Order Code	Full Product Name	Cap-Base	Life To 10%	Life To 20%	Life To 50%
			Failures (Nom)	Failures (Nom)	Failures (Nom)
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)
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	17000 h	99 %	97 %	100 %	91 %	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 (1/3)

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	0.54	0.42	1900 K	83 %
18038800	MASTER SON PIA Plus 50W E27	0.540	0.420	1900 K	87 %
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	0.54	0.42	1900 K	87 %
18228915	MASTER SON PIA Plus	0.535	0.42	2000 K	96 %

Order Code	Full Product Name	Chromaticity Coordinate X (Nom)	Chromaticity Coordinate Y (Nom)	Correlated	
				Colour Temperature (Nom)	LLMF 12000 h Rated
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	0.535	0.42	2000 K	92 %
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	0.535	0.42	2000 K	96 %
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	0.535	0.42	2000 K	92 %

Light Technical (2/3)

Order Code	Full Product Name	LLMF 16000	LLMF 2000	LLMF 20000	LLMF 4000	LLMF 6000	LLMF 8000	Luminous Efficacy	Luminous Flux	Luminous Flux (Rated)
		h Rated	h Rated	h Rated	h Rated	h Rated	h Rated	(rated) (Nom)	(Nom)	(Min)
18040100	MASTER SON PIA Plus 70W E27	82 %	90 %	81 %	87 %	86 %	85 %	83.33 lm/W	6000 lm	-
18038800	MASTER SON PIA Plus 50W E27	86 %	92 %	86 %	90 %	89 %	88 %	71 lm/W	3700 lm	3330 lm

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Order Code	Full Product Name	LLMF 16000	LLMF 2000	LLMF 20000	LLMF 4000	LLMF 6000	LLMF 8000	Luminous Efficacy	Luminous Flux	Luminous
		h Rated	h Rated	h Rated	h Rated	h Rated	h Rated	(rated) (Nom)	(Nom)	Flux (Rated)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	86 %	92 %	86 %	90 %	89 %	88 %	80 lm/W	5750 lm	5040 lm
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	95 %	99 %	94 %	98 %	97 %	96 %	107.79 lm/W	16600 lm	-
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	90 %	98 %	89 %	96 %	95 %	94 %	95 lm/W	9600 lm	-
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	95 %	99 %	94 %	98 %	97 %	96 %	120 lm/W	30000 lm	-
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	90 %	99 %	88 %	97 %	96 %	94 %	136.27 lm/W	55600 lm	-

Light Technical (3/3)

Order Code	Full Product Name	Luminous Flux (Rated) (Nom)	Ratio
			Scotopic/ Photopic Lumens
18040100	MASTER SON PIA Plus 70W E27	6000 lm	0.50
18038800	MASTER SON PIA Plus 50W E27	3700 lm	0.50
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	5600 lm	-
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	16600 lm	0.55

Order Code	Full Product Name	Luminous Flux (Rated) (Nom)	Ratio
			Scotopic/ Photopic Lumens
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	9600 lm	0.55
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	30000 lm	0.60
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	55600 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	BF70
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	B70
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	BD90

Order Code	Full Product Name	Bulb Shape
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	B75
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	BD90
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	BD120

