



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.

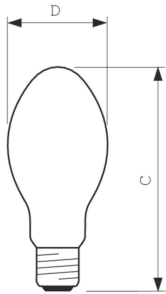
MASTER SON PIA Plus

Versions



MASTER SON PIA Plus E40

Dimensional drawing



Product	D (max)	C (max)
MASTER SON PIA Plus 400W/220 E40 1SL/12	122 mm	290 mm
MASTER SON PIA Plus 150W/220 E40 1SL/12	91 mm	227 mm
MASTER SON PIA Plus 100W/220 E40 1SL/12	76 mm	186 mm
MASTER SON PIA Plus 250W/220 E40 1SL/12	91 mm	227 mm
MASTER SON PIA Plus 70W/220 I E27 1CT/24	70 mm	152 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

Color Code	220
Color Rendering Index (Max)	25

Mechanical and Housing

Bulb Finish	Coated glass
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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)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	79 kWh	A	16.3 mg
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	169 kWh	A+	15 mg
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	110 kWh	A+	16.3 mg
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	283 kWh	A+	15.1 mg
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	449 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)
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	0.178 A	115 V	85 V	100 V
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	0.119 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	0.291 A	115 V	85 V	102 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 (Rated) (Nom)	Re-Ignition Time (Min) (Max)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	70 W	600 s
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	154 W	180 s
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	101.0 W	120 s

Order Code	Full Product Name	Power (Rated) (Nom)	Re-Ignition Time (Min) (Max)
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	257.0 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)
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	26000 h	36000 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 (Nom)	LSF 12000 h Rated	LSF 16000 h Rated	LSF 2000 h Rated	LSF 20000 h Rated	System Description
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	98 %	96 %	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	
				Color Temperature (Nom)	LLMF 12000 h Rated
20426430	MASTER SON PIA Plus	-	-	1900 K	87 %

Order Code	Full Product Name	Chromaticity Coordinate X (Nom)	Chromaticity Coordinate Y (Nom)	Correlated	
				Color Temperature (Nom)	LLMF 12000 h Rated
	70W/220 I E27 1CT/24				

MASTER SON PIA Plus

Order Code	Full Product Name	Chromaticity Coordinate X (Nom)	Chromaticity Coordinate Y (Nom)	Correlated	
				Color Temperature (Nom)	LLMF 12000 h Rated
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	535	420	2000 K	96 %
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	535	420	2000 K	92 %
19344515	MASTER SON PIA Plus	530	420	2000 K	96 %

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

Light Technical (2/3)

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) (Min)	Luminous Flux (Rated) (Nom)
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	86 %	92 %	86 %	90 %	89 %	88 %	80 lm/W	5040 lm	5600 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 %	119.07 lm/W	-	30600 lm
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	90 %	99 %	88 %	97 %	96 %	94 %	136.27 lm/W	-	55600 lm

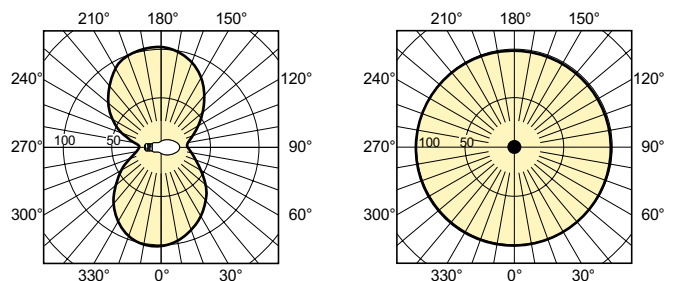
Light Technical (3/3)

Order Code	Full Product Name	Ratio Scotopic/Photopic Lumens
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	-
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	0.55
18225815	MASTER SON PIA Plus 100W/220 E40 1SL/12	0.55

Order Code	Full Product Name	Ratio Scotopic/Photopic Lumens
19344515	MASTER SON PIA Plus 250W/220 E40 1SL/12	0.60
19345215	MASTER SON PIA Plus 400W/220 E40 1SL/12	0.60

Mechanical and Housing

Order Code	Full Product Name	Bulb Shape
20426430	MASTER SON PIA Plus 70W/220 I E27 1CT/24	B70
18228915	MASTER SON PIA Plus 150W/220 E40 1SL/12	BD90
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



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