



# Product Description

## MASTER SON-T PIA Plus

High Pressure Sodium lamp with clear tubular 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

- Clear tubular 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
- Decorative floodlighting, illumination
- Industrial area lighting
- Recreational sports facilities Outdoor and Indoor
- Horticultural lighting

### 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-T PIA Plus

Controls and Dimming	
Dimmable	Yes
General Information	
Operating Position	UNIVERSAL
System Description	External Ignitor (E)
Light Technical	
Colour Code	220
Colour Rendering Index (Max)	25
Colour Rendering Index (Nom)	-
Mechanical and Housing	
Bulb Finish	Clear

## Approval and Application

Order Code	Full Product Name	Energy Consumption kWh/1000 h	Mercury (Hg) Content (Max)	Mercury (Hg) Content (Nom)
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	257 kWh	15.1 mg	15.1 mg
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	408 kWh	19.6 mg	20 mg

Order Code	Full Product Name	Energy Consumption kWh/1000 h	Mercury (Hg) Content (Max)	Mercury (Hg) Content (Nom)
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	155 kWh	15.1 mg	13.9 mg
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	73 kWh	12.2 mg	12.2 mg

## Operating and Electrical

Order Code	Full Product Name	Lamp Current (EM)				Re-Ignition Time (Min)	
		(Nom)	Voltage (Max)	Voltage (Min)	Voltage (Nom)	Power (Rated) (Nom)	(Max)
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	0.300 A	115 V	85 V	100 V	257 W	120 s
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	0.441 A	115 V	85 V	105 V	408.0 W	120 s
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	1.8 A	115 V	85 V	100 V	155 W	180 s
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	0.975 A	103 V	73 V	93 V	73.0 W	30 s

## General Information (1/2)

Order Code	Full Product Name	Cap-Base	Life To 10% Failures (Nom)	Life To 20% Failures (Nom)	Life To 50% Failures (Nom)	Life To 5% Failures (Nom)	LSF 12000 h Rated	LSF 16000 h Rated
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	E40	24000 h	28000 h	36000 h	20500 h	99 %	98 %
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	E40	24000 h	28000 h	36000 h	20500 h	99 %	98 %
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	E40	24000 h	28000 h	32000 h	20500 h	-	-
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	E27	20000 h	23500 h	28000 h	17000 h	-	-

## General Information (2/2)

# MASTER SON-T PIA Plus

Order Code	Full Product Name	LSF	LSF	LSF	LSF	LSF
		2000 h	20000 h	4000 h	6000 h	8000 h
Order Code	Full Product Name	Rated	Rated	Rated	Rated	Rated
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	100 %	95 %	99 %	99 %	99 %
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	100 %	95 %	99 %	99 %	99 %

Order Code	Full Product Name	LSF	LSF	LSF	LSF	LSF
		2000 h	20000 h	4000 h	6000 h	8000 h
Order Code	Full Product Name	Rated	Rated	Rated	Rated	Rated
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	-	-	-	-	-
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	-	-	-	-	-

## Luminaire Design Requirements

Order Code	Full Product Name	Bulb Temperature (Max)
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	450 °C
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	450 °C

Order Code	Full Product Name	Bulb Temperature (Max)
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	450 °C
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	350 °C

## Light Technical (1/3)

Order Code	Full Product Name	Chromaticity	Chromaticity	Correlated Colour Temperature (Nom)	LLMF 12000 h Rated	LLMF 16000 h Rated	LLMF 2000 h Rated	LLMF 20000 h Rated
		Coordinate X (Nom)	Coordinate Y (Nom)					
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	0.535	0.420	2000 K	96 %	95 %	99 %	94 %
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	0.535	0.42	2000 K	92 %	90 %	99 %	88 %
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	0.535	0.42	2000 K	-	-	-	-
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	0.54	0.42	1900 K	-	-	-	-

## Light Technical (2/3)

Order Code	Full Product Name	LLMF	LLMF	LLMF	Lumen	Lumen	Lumen	Lumen	Lumen	Luminous
		4000 h Rated	6000 h Rated	8000 h Rated	Maintenance 2000 h (Min)	Maintenance 2000 h (Nom)	Maintenance 20000 h	Maintenance 5000 h (Min)	Maintenance 5000 h (Nom)	Efficacy (rated) (Nom)
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	98 %	97 %	96 %	-	-	-	-	-	126 lm/W
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	97 %	96 %	94 %	95 %	99 %	88 %	90.5 %	96.5 %	137 lm/W
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	-	-	-	94 %	97 %	-	88 %	95 %	117 lm/W
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	-	-	-	90 %	95 %	-	85 %	92 %	91 lm/W

## Light Technical (3/3)

Order Code	Full Product Name	Luminous Flux (Nom)	Luminous	Luminous	Ratio
			Flux (Rated) (Min)	Flux (Rated) (Nom)	Scotopic/Photopic Lumens
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	32100 lm	-	32100 lm	0.60

Order Code	Full Product Name	Luminous Flux (Nom)	Luminous	Luminous	Ratio
			Flux (Rated) (Min)	Flux (Rated) (Nom)	Scotopic/Photopic Lumens
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	55900 lm	-	55900 lm	0.60

## MASTER SON-T PIA Plus

Order Code	Full Product Name	Luminous Flux (Nom)	Luminous Flux (Rated) (Min)	Luminous Flux (Rated) (Nom)	Ratio Scotopic/Photopic Lumens
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	17800 lm	14500 lm	18000 lm	-

Order Code	Full Product Name	Luminous Flux (Nom)	Luminous Flux (Rated) (Min)	Luminous Flux (Rated) (Nom)	Ratio Scotopic/Photopic Lumens
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	6600 lm	5940 lm	6600 lm	-

### Mechanical and Housing

Order Code	Full Product Name	Bulb Shape
928144709293	MASTER SON-T PIA Plus 250W E40 1SL/12	T46
928144809293	MASTER SON-T PIA Plus 400W E40 1SL/12	T46

Order Code	Full Product Name	Bulb Shape
928483400095	MASTER SON-T PIA Plus 150W E40 1SL/12	T46
928483200094	MSTSON-TPIA Plus 70W E27 1CT/12	T35

