



Product Description

MASTER HPI-T Plus

Quartz metal halide lamps with clear outer bulb

Benefits

- High safety and comfort level, maintained over life
- Minimal maintenance cost
- Initial investment saving options with "Plus"-concept

Features

- Clear tubular outer bulb
- Unique 3-band technology resulting in high luminous efficacy, both initially and over long lifetime
- Renders a natural white color appearance and good color stability

Application

- Sports lighting, floodlighting of buildings and monuments, area lighting e.g. harbours and building sites, canopy lighting e.g. petrol stations, horticultural lighting

Warnings and Safety

- Use only in totally enclosed luminaire, even during testing (IEC61167, IEC 62035, IEC60598)
- The luminaire must be able to contain hot lamp parts if the lamp ruptures
- For use with control gear designed for high-pressure mercury or sodium lamps
- 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.

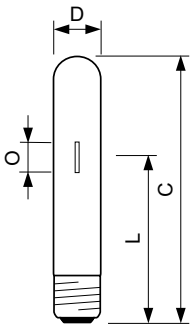
MASTER HPI-T Plus

Versions



HPI-T Plus, E39/E40

Dimensional drawing



| Product | D (max) | O | L | C (max) |
|------------------------------------|---------|---------|--------|---------|
| MASTER HPI-T Plus 400W/643 E39 1SL | 47 mm | 30.5 mm | 165 mm | 283 mm |
| MASTER HPI-T Plus 400W/645 E40 | 47 mm | 30.5 mm | 168 mm | 286 mm |
| HPI-T Plus 400W/645 E40 1SL/12 | 47 mm | 30.5 mm | 168 mm | 286 mm |
| MASTER HPI-T Plus 250W/645 E40 1SL | 47 mm | 29 mm | 155 mm | 255 mm |
| MASTER HPI-T Plus 250W/645 E40 | 47 mm | 29 mm | 155 mm | 255 mm |
| HPI-T Plus 250W/645 E40 1SL/12 | 47 mm | 29 mm | 155 mm | 255 mm |
| MASTER HPI-T Plus 250W/645 E40 | 47 mm | 29 mm | 155 mm | 255 mm |
| MASTER HPI-T Plus 400W/643 CL 1SL | 47 mm | 30.5 mm | 168 mm | 286 mm |
| MASTER HPI-T Plus 400W/645 E40 | 47 mm | 30.5 mm | 168 mm | 286 mm |

Controls and Dimming

| | |
|----------|----|
| Dimmable | No |
|----------|----|

General Information

| | |
|----------------------------|---------|
| Life To 50% Failures (Nom) | 20000 h |
| Life To 5% Failures (Nom) | 5000 h |
| Operating Position | P20 |

Light Technical

| | |
|-------------------|-----------------|
| Color Designation | Cool White (CW) |
|-------------------|-----------------|

Mechanical and Housing

| | |
|-------------|-------|
| Bulb Finish | Clear |
| Bulb Shape | T46 |

Approval and Application

MASTER HPI-T Plus

| Order Code | Full Product Name | Energy | Energy | Mercury |
|--------------|---------------------------------------|-------------|-------------|---------------|
| | | Consumption | Efficiency | (Hg) |
| | | kWh/1000 h | Label (EEL) | Content (Nom) |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 269 kWh | A+ | 33 mg |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | 429 kWh | A+ | - |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 269 kWh | A+ | 36 mg |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | 269 kWh | A+ | 36 mg |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 269 kWh | A+ | 36 mg |

| Order Code | Full Product Name | Energy | Energy | Mercury |
|--------------|---------------------------------------|-------------|-------------|---------------|
| | | Consumption | Efficiency | (Hg) |
| | | kWh/1000 h | Label (EEL) | Content (Nom) |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 420 kWh | A+ | 29.5 mg |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | 420 kWh | A+ | 29.5 mg |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 420 kWh | A+ | 29.5 mg |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | 420 kWh | - | 29.5 mg |

Operating and Electrical

| Order Code | Full Product Name | Lamp Current (EM) (Nom) | Voltage (Max) | Voltage (Min) | Voltage (Nom) | Power (Rated) (Nom) |
|--------------|---------------------------------------|-------------------------|---------------|---------------|---------------|---------------------|
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 2.1 A | 138 V | 118 V | 128 V | 245 W |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | 3.4 A | 135 V | 115 V | 125 V | 390 W |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 2.1 A | 138 V | 118 V | 128 V | 245 W |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | 2.1 A | 138 V | 118 V | 128 V | 245 W |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 2.1 A | 138 V | 118 V | 128 V | 245 W |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 3.4 A | 135 V | 115 V | 125 V | 382 W |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | 3.4 A | 135 V | 115 V | 125 V | 382 W |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 3.4 A | 135 V | 115 V | 125 V | 382 W |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | 3.4 A | 135 V | 115 V | 125 V | 382 W |

General Information (1/2)

| Order Code | Full Product Name | Cap-Base (Nom) | Life To 10% Failures | Life To 20% Failures | LSF 12000 h | LSF 16000 h | LSF 2000 h | LSF 20000 h |
|--------------|---------------------------------------|----------------|----------------------|----------------------|-------------|-------------|------------|-------------|
| | | | (Nom) | (Nom) | Rated | Rated | Rated | Rated |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | E40 | 7500 h | 11000 h | 76 % | 63 % | 99 % | 50 % |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | E40 | - | 5000 h | - | - | - | - |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | E40 | 7500 h | 11000 h | - | - | - | - |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | E39 | 7500 h | 11000 h | - | - | - | - |

General Information (2/2)

| Order Code | Full Product Name | LSF | LSF | LSF | System Description |
|--------------|------------------------------------|--------|--------|--------|-------------------------------|
| | | 4000 h | 6000 h | 8000 h | |
| | | Rated | Rated | Rated | |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 96 % | 93 % | 88 % | - |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | - | - | - | Horizontal Operating Position |

| Order Code | Full Product Name | LSF | LSF | LSF | System Description |
|--------------|---------------------------------------|--------|--------|--------|-------------------------------|
| | | 4000 h | 6000 h | 8000 h | |
| | | Rated | Rated | Rated | |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |

MASTER HPI-T Plus

| Order Code | Full Product Name | LSF | LSF | LSF | System Description |
|--------------|---------------------------------------|--------------|--------------|--------------|-------------------------------|
| | | 4000 h Rated | 6000 h Rated | 8000 h Rated | |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |

| Order Code | Full Product Name | LSF | LSF | LSF | System Description |
|--------------|---------------------------------------|--------------|--------------|--------------|-------------------------------|
| | | 4000 h Rated | 6000 h Rated | 8000 h Rated | |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | Horizontal Operating Position |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | - | - | - | Horizontal Operating Position |

Luminaire Design Requirements

| Order Code | Full Product Name | Bulb Temperature (Max) |
|--------------|---------------------------------------|------------------------|
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 550 °C |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | 600 °C |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 550 °C |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | 550 °C |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 550 °C |

| Order Code | Full Product Name | Bulb Temperature (Max) |
|--------------|---------------------------------------|------------------------|
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 600 °C |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | 600 °C |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 600 °C |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | 600 °C |

Light Technical (1/3)

| Order Code | Full Product Name | Chromaticity | | Color Code | Correlated Color Temperature (Nom) | Color Rendering Index (Nom) | LLMF 12000 h Rated | LLMF 16000 h Rated |
|--------------|---------------------------------------|--------------------|--------------------|------------|------------------------------------|-----------------------------|--------------------|--------------------|
| | | Coordinate X (Nom) | Coordinate Y (Nom) | | | | | |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 365 | 377 | 645 | 4500 K | 65 | 68 % | 63 % |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | 369 | 375 | 643 | 4300 K | 65 | - | - |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 365 | 377 | 645 | 4500 K | 65 | - | - |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | 365 | 377 | 645 | 4500 K | 65 | - | - |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 365 | 377 | 645 | 4500 K | 65 | - | - |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 361 | 372 | 645 | 4500 K | 65 | - | - |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | 361 | 372 | 645 | 4500 K | 65 | - | - |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 361 | 372 | 645 | 4500 K | 65 | - | - |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | 361 | 372 | 645 | 4500 K | 69 | - | - |

Light Technical (2/3)

| Order Code | Full Product Name | LLMF | LLMF | LLMF | LLMF | LLMF | Lumen | Lumen | Lumen | Lumen |
|--------------|---------------------------------------|--------------|---------------|--------------|--------------|--------------|---------------------------|--------------------------|--------------------------|---------------------|
| | | 2000 h Rated | 20000 h Rated | 4000 h Rated | 6000 h Rated | 8000 h Rated | Maintenance 10000 h (Nom) | Maintenance 2000 h (Min) | Maintenance 2000 h (Nom) | Maintenance 20000 h |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | 90 % | 60 % | 82 % | 77 % | 73 % | - | - | - | - |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | - | - | - | - | - | 75 % | 80 % | 90 % | - |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |

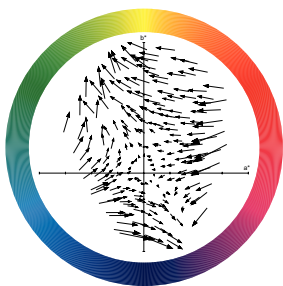
MASTER HPI-T Plus

| Order Code | Full Product Name | LLMF | LLMF | LLMF | LLMF | LLMF | Lumen | Lumen | Lumen | Lumen |
|--------------|--|-----------------|------------------|-----------------|-----------------|-----------------|------------------------------|-----------------------------|-----------------------------|------------------------|
| | | 2000 h Rated | 20000 h Rated | 4000 h Rated | 6000 h Rated | 8000 h Rated | Maintenance 10000 h (Nom) | Maintenance 2000 h (Min) | Maintenance 2000 h (Nom) | Maintenance 20000 h |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | - | - | - | - | - | 70 % | 75 % | 90 % | 60 % |

Light Technical (3/3)

| Order Code | Full Product Name | Lumen Maintenance | Lumen Maintenance | Luminous Efficacy | Luminous Flux | Luminous Flux | Ratio |
|--------------|--|-------------------|-------------------|-------------------|---------------|---------------|---------------------------------|
| | | 5000 h (Min) | 5000 h (Nom) | (rated) (Nom) | (Rated) (Min) | (Rated) (Nom) | Scotopic/ Photopic Lumens |
| 928076109299 | MASTER HPI-T Plus 250W/645 E40 1SL | - | - | 84 lm/W | - | 20500 lm | 1.50 |
| 928473709299 | MASTER HPI-T Plus 400W/643 CL 1SL | 70 % | 85 % | 90 lm/W | 30000 lm | 35000 lm | 1.50 |
| 928481300096 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 18500 lm | 20500 lm | - |
| 928481300097 | HPI-T Plus 250W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 18500 lm | 20500 lm | - |
| 928481300098 | MASTER HPI-T Plus 250W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 18500 lm | 20500 lm | - |
| 928481600094 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 30000 lm | 32000 lm | - |
| 928481600095 | HPI-T Plus 400W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 30000 lm | 32000 lm | - |
| 928481600096 | MASTER HPI-T Plus 400W/645 E40 1SL/12 | 65 % | 80 % | 84 lm/W | 30000 lm | 32000 lm | - |
| 928483500191 | MASTER HPI-T Plus 400W/643 E39 1SL | 65 % | 80 % | 89 lm/W | 30000 lm | 32000 lm | - |

Color Rendering Diagrams



MASTER HPI-T Plus

