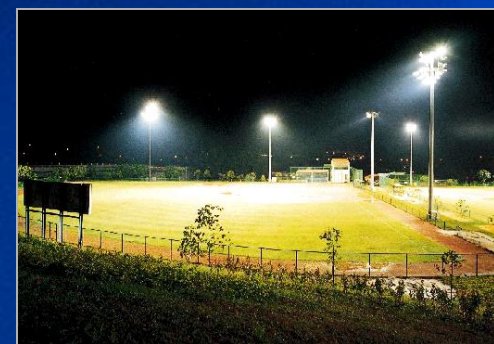


Outdoor Lighting

Basics of Lamps



Let's make things better.



PHILIPS

Products

High Pressure Sodium

- MASTER SON(-T) PIA Plus
- MASTER SON(-T) Hg-Free
- SON(-T) Pro
- SON(-T) Comfort Pro
- SON H Pro

Low Pressure Sodium

- MASTER SOX-E
- SOX Pro

Induction

- MASTER QL

Metal Halide

- MASTER HPI(-T) Plus
- MASTER MHN-LA/-SA
- HPI-T Pro
- ArtColour MH-T Pro

High Pressure Mercury

- HPL Comfort Pro
- HPL-N
- HPL-R

Let's make things better.



PHILIPS

Products

Compact High Intensity Discharge

- MASTER Colour CDM-T
- MASTER Colour CDM-TD
- MASTER Colour City CDM-TT/-ET
- MASTER White SON SDW-T
- MHN/W-TD Pro

Compact Fluorescent

- MASTER PL-L Outdoor
- MASTER PL-L
- MASTER PL-T
- MASTER PL-C

MASTER SON(-T) PIA



Performance	SON-T Plus 70 W
Efficacy	94 lm/W
Output	6600 lm
Colour Temp.	2000 K
CRI	Ra 25
Service life	16,000 hours

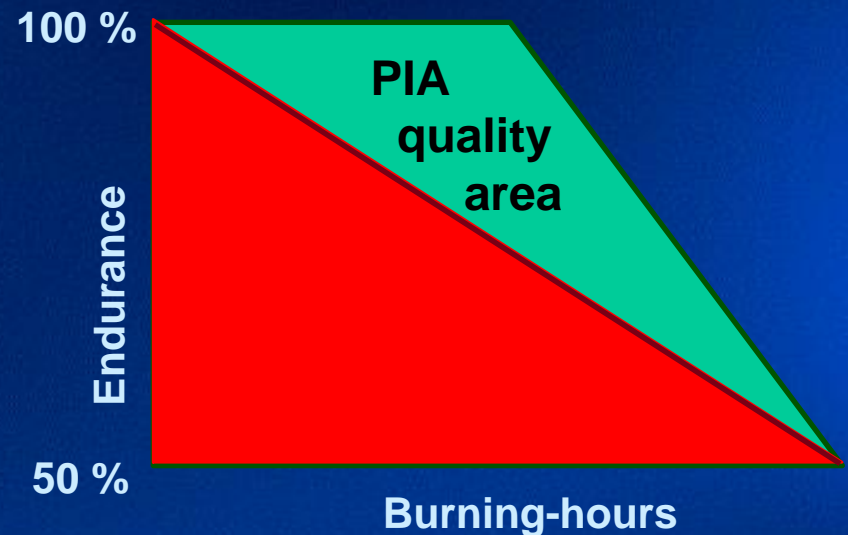
Let's make things better.



PHILIPS

Reliability of MASTER SON PIA Reduce Early Failures

- Integrated antenna
- New type of getter (ZrAl)
- Robust design
- 7 welds (previously 14)
- High, uniform quality



Let's make things better.



PHILIPS

SON - Range

Version	MASTER SON PIA Plus	MASTER SON PIA Hg-Free	SON Pro
Tubular	50–600 W	150–400 W	50–1000 W
Elliptical	100–400 W	50–400 W*	50–1000 W
Internal Ignitor	-	-	50–70 W

Version	SON Comfort Pro	SON H Pro
Tubular	150-400W	
Elliptical	150-400W	110-350 W

* incl. PIA, incl. Hg

Let's make things better.

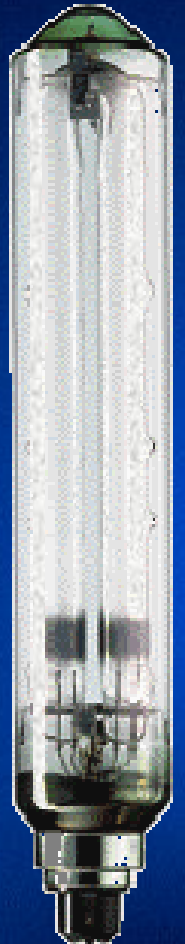


PHILIPS

MASTER SOX-E

Performance	SOX-E 91 W
Efficacy	187 lm/W
Output	17,000 lm
Colour Temp.	1800 K
CRI	--
Service life	10,000 hours

- Highest possible luminous efficacy
- Monochromatic yellow light colour
- Unique dimples for superior quality



Let's make things better.



PHILIPS

MASTER Colour City



Performance	CDM-TT 70 W
Efficacy	88 lm/W
Output	6300 lm
Colour Temp.	3000 K
CRI	Ra >80
Service life	12,000 hours

Let's make things better.



PHILIPS

MASTER Colour (City) vs. quartz metal halide

Characteristics	Quartz Metal Halide	MASTER Colour (City)
Efficacy	++	+++
Output	++	+++
Rendering	++	+++
Light colour	unstable	stable
Service life	+	++

Let's make things better.



PHILIPS

MASTER Colour range

<u>Designation</u>	<u>Lamp type</u>	<u>Wattage</u>
<ul style="list-style-type: none">• CDM-T	Tub., single-socket	35–150 W
<ul style="list-style-type: none">• CDM-TD	Tub., Dual-socket	70–150 W
<ul style="list-style-type: none">• CDM-TT	Tubular Town E27/E40	70–150 W
<ul style="list-style-type: none">• CDM-ET	Elliptical Town E27/E40	70–150 W



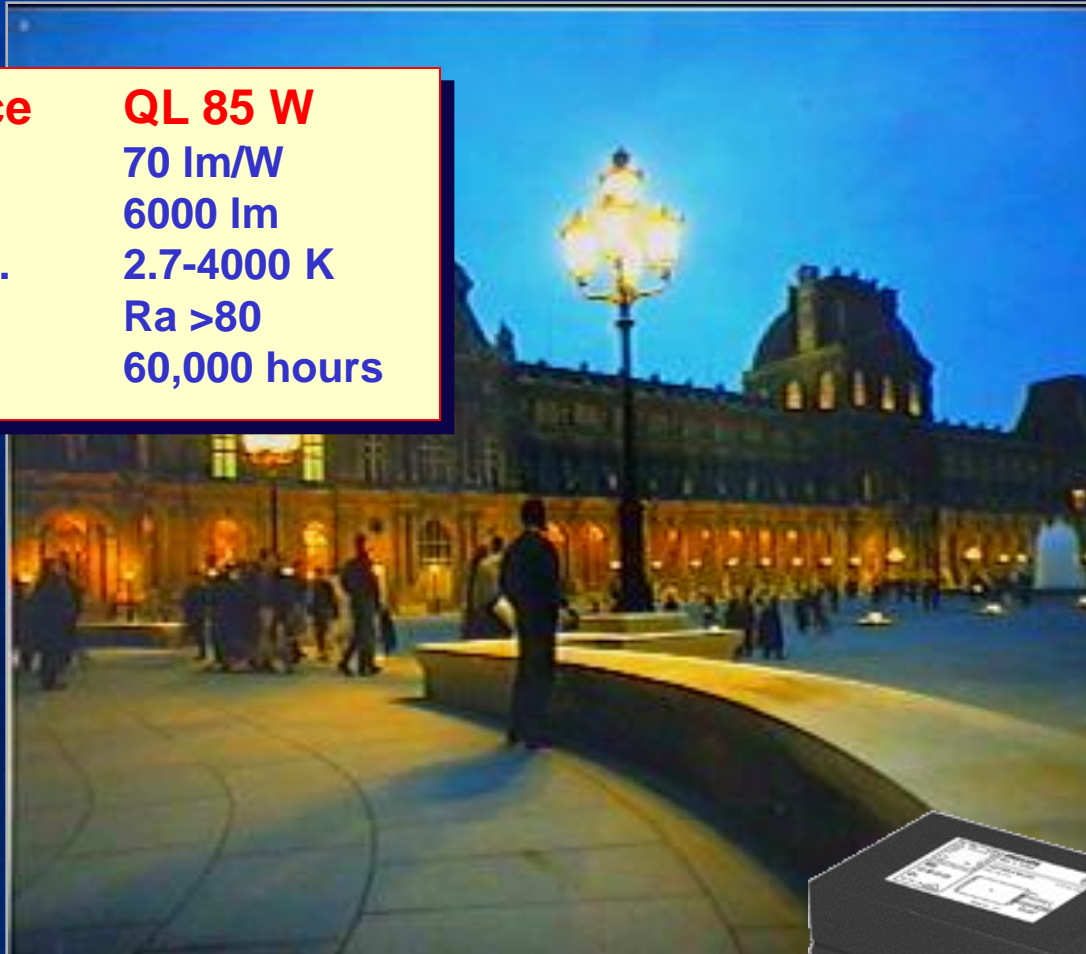
Let's make things better.



PHILIPS

Induction – MASTER QL

Performance	QL 85 W
Efficacy	70 lm/W
Output	6000 lm
Colour Temp.	2.7-4000 K
CRI	Ra >80
Service life	60,000 hours



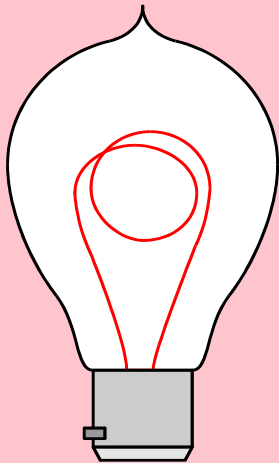
Let's make things better.



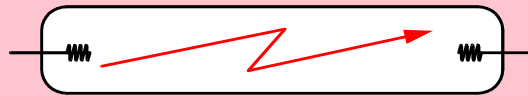
PHILIPS

Induction – MASTER QL

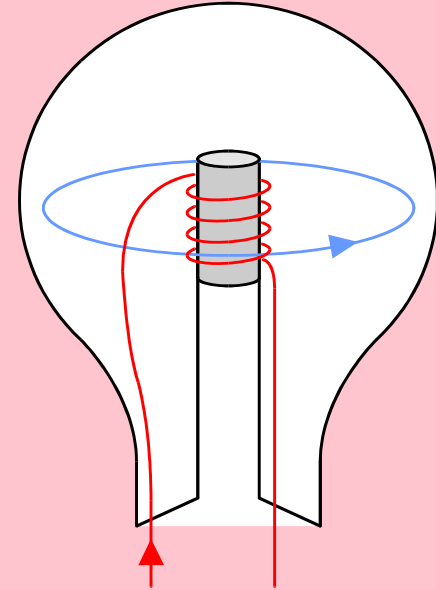
Service lifetime comparison



Incandescent / Halo
→ 2,000 hours



Discharge
→ 16,000 hours



Induction
60,000 hours

- Wattage 55, 85 and 165 W
- Colour 827, 830 and 840

Let's make things better.



PHILIPS

MASTER PL-L Outdoor, MASTER PL-T



- PL-L offers a service life of 16,000 hours
- Optimum output at near freezing temperatures



- PL-T provides >90% of its light output from -10°C to +70°C



Performance	PL-L 36 W
Efficacy	80 lm/W
Output	2900 lm
Colour Temp.	2.7-4000 K
CRI	Ra >80
Service life	16,000 hours

Performance	PL-T 42 W
Efficacy	70 lm/W
Output	3000 lm
Colour Temp.	2.7-4000 K
CRI	Ra >80
Service life	8,000 hours

Let's make things better.



PHILIPS

MASTER White SON



Performance	SDW-T 50 W
Efficacy	44 lm/W
Output	2300 lm
Colour Temp.	2500 K
CRI	Ra >80
White life	10,000 hours

Let's make things better.



PHILIPS

MASTER White SON

colour impression

- Golden white, cosy
- Brilliant light
- Enhanced red

Let's make things better.



PHILIPS

Metal Halide

HPI vs. MHN-LA



Performance	HPI-T Plus 2000W
Efficacy	96 lm/W
Output	18300 lm
Colour Temp.	4300 K
CRI	Ra 70
Service life	6,000 hours

Performance	MHN-LA 2000 W
Efficacy	108 lm/W
Output	22000 lm
Colour Temp.	4200 K
CRI	Ra >80
Service life	4,000 hours

Let's make things better.



PHILIPS

Metal Halide

MHN-SA vs. MHN-LA



Performance	MHN-SA 2000 W
Efficacy	86 lm/W
Output	160000 lm
Colour Temp.	5600 K
CRI	Ra >90
Service life	2,000 hours

Performance	MHN-LA 2000 W
Efficacy	108 lm/W
Output	220000 lm
Colour Temp.	4200 K
CRI	Ra >80
Service life	4,000 hours

Let's make things better.



PHILIPS

MASTER MHN - range



- MHN-SA 1800W 230V
- MHN-SA 1800W 400V
- MHN-SA 2000W 400V



- MHN-LA 1000W 230V
- MHN-LA 2000W 400V

Let's make things better.



PHILIPS

HPI Plus



High Pressure Iodide

- Excellent in lumen maintenance
- Low initial colour spread
- Minimal colour shift over life
- Runs on HPL, HPI gear

Plus – for SON & HPI gear

- Higher light output
- Lower colour temperature – nicer atmosphere
- Directly replaces SON lamps without luminaire adaptation

HPI – range

MASTER HPI Plus

- HPI Plus 400 W
- HPI-T Plus 250 W
- HPI-T Plus 400 W

HPI-T Pro

- HPI-T 1000 W
- HPI-T 2000 W, 230 V
- HPI-T 2000 W, 400 V HO

High Pressure Mercury HPL



HPL-COM
HPL-N



HPL-R

To be found in existing installations but...

..often upgraded to more energy-efficient systems

Performance	HPL-COM 80 W
Efficacy	49 lm/W
Output	4000 lm
Colour Temp.	3500 K
CRI	Ra 57
Service life	8,000 hours

Let's make things better.



PHILIPS

Blended Light

ML



ML



ML-R

Found in existing installations but...

..being upgraded to more energy-efficient systems

Performance	ML 160 W
Efficacy	19 lm/W
Output	3150 lm
Colour Temp.	3600 K
CRI	Ra 60
Service life	6,000 hours

Let's make things better.



PHILIPS

Quick Overview

Applications and Light Sources

Application	SON	HPI	MHN	QL	PL	CDM	SDW	HPL	ML	SOX
Functional roads	++							++	+	++
Tunnels	++				++					+
Horticulture	++	+								
Industrial areas	++	++						++		
Sports	+	++	++							
Residential areas	++				++	+		+		
Parks / greeneries				++	++	++	++			
City Centres				++	++	++	++	+	+	
Facades / objects		++	+			++	+			

Let's make things better.



PHILIPS