

MONARCH

THE DUTCH POWERHOUSE



TECHNICAL DATASHEET

Spectral Data

HIGH EFFICIENT

| Code | Spectra | Optical properties*1 | | | | Spectral specifications*1 | | | | Imparted heat | |
|-----------|--------------------------|-----------------------|--------------------|--------------------------|--------------------------|---------------------------|-------------|-------------|--------------|---------------|--------|
| | | PhotonFlux (µmol/s)*2 | Consumed Power (W) | Efficacy @ 100% (µmol/J) | Efficacy dimmed to 50%*3 | blue 400-500 | mid 500-600 | red 600-700 | far-red >700 | W | BTU/hr |
| M.AABW.01 | Low Blue | 4020 | 1120 | 3.59 | 3.82 | 5.3 | 0.1 | 94.4 | 0.2 | 365 | 1245 |
| M.AACB.01 | Low Blue White | 3975 | 1154 | 3.44 | 3.67 | 5.1 | 5.0 | 89.6 | 0.3 | 401 | 1368 |
| M.AADH.01 | Low Blue White + Far-Red | 3790 | 1174 | 3.23 | 3.45 | 4.8 | 9.6 | 75.5 | 10.1 | 459 | 1566 |
| M.AACW.01 | Medium Blue | 4015 | 1134 | 3.54 | 3.76 | 7.9 | 0.1 | 91.8 | 0.2 | 371 | 1266 |
| M.AADD.01 | Medium Blue White | 3975 | 1168 | 3.4 | 3.62 | 7.8 | 5.0 | 86.9 | 0.3 | 407 | 1388 |
| M.AACF.01 | Broad Spectrum | 3800 | 1240 | 3.1 | 3.31 | 8.6 | 17.2 | 73.8 | 0.5 | 490 | 1671 |

ECONOMIC

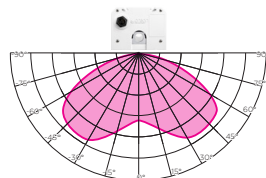
| Code | Spectra | Optical properties*1 | | | | Spectral specifications*1 | | | | Imparted heat | |
|-----------|--------------------------|-----------------------|--------------------|--------------------------|--------------------------|---------------------------|-------------|-------------|--------------|---------------|--------|
| | | PhotonFlux (µmol/s)*2 | Consumed Power (W) | Efficacy @ 100% (µmol/J) | Efficacy dimmed to 50%*3 | blue 400-500 | mid 500-600 | red 600-700 | far-red >700 | W | BTU/hr |
| M.AABX.01 | Low Blue | 3810 | 1137 | 3.35 | 3.66 | 5.1 | 0.1 | 94.6 | 0.2 | 422 | 1439 |
| M.AACC.01 | Low Blue White | 3760 | 1168 | 3.22 | 3.52 | 5.0 | 4.8 | 89.9 | 0.3 | 457 | 1559 |
| M.AADI.01 | Low Blue White + Far-Red | 3560 | 1188 | 3.0 | 3.30 | 4.6 | 9.3 | 76.1 | 10.0 | 515 | 1757 |
| M.AACX.01 | Medium Blue | 3800 | 1150 | 3.3 | 3.61 | 7.7 | 0.1 | 92.0 | 0.2 | 429 | 1463 |
| M.AADE.01 | Medium Blue White | 3750 | 1182 | 3.17 | 3.48 | 7.6 | 4.8 | 87.3 | 0.3 | 464 | 1583 |
| M.AACG.01 | Broad Spectrum | 3550 | 1240 | 2.9 | 3.16 | 8.3 | 16.7 | 74.5 | 0.5 | 535 | 1825 |

HPS REPLACEMENT

| Code | Spectra | Optical properties*1 | | | | Spectral specifications*1 | | | | Imparted heat | |
|-----------|--------------------------|-----------------------|--------------------|--------------------------|--------------------------|---------------------------|-------------|-------------|--------------|---------------|--------|
| | | PhotonFlux (µmol/s)*2 | Consumed Power (W) | Efficacy @ 100% (µmol/J) | Efficacy dimmed to 50%*3 | blue 400-500 | mid 500-600 | red 600-700 | far-red >700 | W | BTU/hr |
| M.AABZ.01 | Low Blue | 3560 | 1050 | 3.39 | 3.69 | 5.1 | 0.1 | 94.6 | 0.2 | 381 | 1300 |
| M.AACD.01 | Low Blue White | 3435 | 1050 | 3.27 | 3.55 | 5.0 | 4.9 | 89.9 | 0.2 | 400 | 1364 |
| M.AADJ.01 | Low Blue White + Far-Red | 3220 | 1050 | 3.07 | 3.33 | 4.7 | 9.4 | 75.9 | 10.0 | 444 | 1515 |
| M.AADB.01 | Medium Blue | 3520 | 1050 | 3.35 | 3.64 | 7.7 | 0.1 | 92.0 | 0.2 | 382 | 1303 |
| M.AADF.01 | Medium Blue White | 3400 | 1050 | 3.24 | 3.50 | 7.6 | 4.9 | 87.2 | 0.3 | 400 | 1364 |
| M.AACH.01 | Broad Spectrum | 3100 | 1050 | 2.95 | 3.20 | 10.5 | 15.6 | 73.5 | 0.4 | 437 | 1491 |

Light distribution

Wide Beam



Other spectrum variations on request.

*1 Electrical and optical properties have a tolerance of ± 5%.

*2 Output is defined as the total photon flux between 400-800nm
Typical values for stable operation at 77°F | 25°C cooling water temperature

*3 All values mentioned in the table are based on 100% power, except for this column; 50% power.

Product features

| | |
|------------------------------------|--|
| Housing material and finishing | Aluminium (IK10). Anodized / antifouling powder coating RAL 9010 (dirt repellent) |
| LED protection cover | High transmission glass (transmission >98%) (IK07) |
| Beam angle | Wide Beam: 140° |
| Ingress Protection LED compartment | IP67 (dust- and watertight). Fixtures can be cleaned by using pressurized water, the complete electrical circuit is sealed waterproof. |
| Lifespan and warranty | L90 B05 - 50,000 hours, 5 year full warranty |

Technical data

| | |
|---------------------------------|---|
| Power factor | > 0.96 @ 400 VAC |
| Total Harmonic Distortion (THD) | < 12% |
| Voltage range | 277 - 480 VAC |
| Current range | 4.6 - 2.3 A |
| Frequency range | 50/60 Hz |
| Inrush energy | 4,2 A ² s |
| Inrush current peak | 20A @ 480 VAC |
| Leakage current | < 0.7 mA @ 480 VAC |
| Isolation class | Class I |
| Connector | Integrated: 3 pole connector Male (Wieland RST20i3 black) |
| Operation conditions | 32 to 113°F 0 to 45°C / 95% RH |
| Storage conditions | 32 to 140°F 0 to 60°C / 85% RH |

Cooling liquid and circuit

| | |
|----------------------------|---|
| Cooling liquid | Water (pH 4-8) |
| Cooling liquid temperature | From dew point to 113°F 45°C |
| Water connection | Pipe thread ISO 228-G 3/4" (2x) |
| Required flow velocity | Flow velocity must be at least 0.3 m/s and should not exceed 1.5 m/sec. (inner Ø 24.1mm) |
| Flow velocity formula | $v = Q \cdot n / 19000$ (velocity in m/s, channel inner diameter 24.1mm) v: minimally required flow velocity of water in the cooling channel of the lamp. (m/s) Q: heat imparted per fixture (Watt), n: number of fixtures in series on a cooling pipe. |

Mounting

Topside has two dedicated T-shaped grooves. Suspension of fixture by 4x M6 bolt & T-nut or custom made bracket.

Weight and dimensions

| | |
|--------------------------------|---|
| Nett weight | 20.5 lb 9,3 kg |
| Product dimensions (L x W x H) | 15.35" x 6.3" x 4.8" 390 mm x 160 mm x 122 mm |
| Carton dimensions (L x W x H) | 21.65" x 8.66" x 6.89" 550 mm x 220 mm x 175 mm |



Logistic specifications

| | |
|-------------------------|-------------------------|
| Quantity per pallet | 49 pcs. |
| Gross weight per pallet | 1148.7 lb 521 kg |
| Pallet dimensions (EUR) | 31.5" x 47.24" x 56.69" |

HS-code

Air freight

| | |
|-------------------------|-------------------------|
| Quantity per pallet | 63 pcs. |
| Gross weight per pallet | 1461.7 lb 663 kg |
| Pallet dimensions (EUR) | 31.5" x 47.24" x 71.26" |

Sea/Road freight

| | |
|---------------------|----------------------|
| Quantity per pallet | 800 x 1200 x 1440 mm |
| Quantity per pallet | 9405 42 39 90 |
| Quantity per pallet | 800 x 1200 x 1810 mm |
| Quantity per pallet | 9405 42 39 90 |

Compliance

Conforms to/Certified to ANSI/CAN/UL 8800



V220908M

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