AAA-LUX®
TRIPLE A LIGHTING

DATASHEET LED FLOODLIGHT

LED SPORTS LIGHTING WS-xxx-series Gen6

Standard 1550 W - Dimmable and Controllable

TYPICAL APPLICATIONS

The WS-family AAA-LUX LED luminaires are suitable to illuminate sports fields according various norms for sports field lighting, e.g. EN12193 and others. The luminaires are a retrofit replacement for all 1 to 2 kW Metal Halide and other flood lights.

The WS-family covers a number of types for the various sports applications. They can be controlled via the wireless proprietary LEDxLINK protocol. This protocol is part of AAA-LUX's Lighting Control Management System. This system is designed to bring the user ease of use, as it will also bring remote management features.

Typical sports applications are soccer, tennis, hockey, rugby, cricket, AFL, basketball and all similar accommodations. Also suitable for smaller stadiums. For large stadiums the WS-STAD-family is available.

Light spill shields are available for harsher light pollution environment. They can be ordered separately.

More information on www.AAA-LUX-lighting.com

FEATURES AND BENEFITS

Feature	Benefit
Better light	Increased game experience
Superior color rendering	Sporting with daylight impression
Improved light uniformity	Better contrast on ball, playfield, players
True retrofit	Easy replacement
Direct connection to 400 VAC	Fits on existing masts
Comparable size and weight	No extra installation costs or cables
Wireless Lighting Control Management System	Easy to control – Flexible
Central monitoring and control	Adjust power consumption
Freedom of installation of sensors and luminaires	Plan efficient maintenance
	Dim to norm - Control anywhere
Significant Energy Saving	Short ROI
No start-up time needed	Based on power consumption reduction
Light switched on later, switched off earlier	Dim to norm (EN12193)
Dimmed to norm reduces power consumption	Based on shorter illumination times
Long lifetime	No re-lamping costs
	Increased system up-time
High efficient optics	Less power needed for same lighting level
Illuminate what is needed	Reduction of stray light
Increases system efficiency	
No visible cables and fixed light beams	Cables protected against animals
	Light distribution cannot change due to transport or installation

DESCRIPTION

The AAA-LUX WS-series family of floodlights are a true retrofit for existing 2 kW Metal Halide (2.2 kW power dissipation) fixtures. The white light is perceived as daylight, which enhances the joy of play.

The AAA-LUX proprietary Lighting Control Management System (LCMS) can wireless switch and dim the luminaires via the proprietary LEDxLINK protocol. In absence of a LCMS, the luminaires switch on at full power.

The product is equipped with high-quality LED lamps and optics. The 8 light beams are configured such that the sports field can be illuminated within the norms for sports field illumination (EN12193). The high-quality optics illuminates the fields very uniform and when used correctly produces at the same time little stray light.

The integrated electronic power supply has a high efficiency (greater than 95%), and a power factor (PF) above 0.95. With the absence of an inrush current, the electrical installation can be designed at nominal current, saving significant cabling costs in case of new build installations (EN50525).

All materials used are suitable for outdoor use, even in harsh conditions and High Temperature (HT) versions are available. The fixture is particularly suitable for sport at large. The product has a long lifetime and a high reliability. The significant energy reduction enables a short return on investment period.

TECHNICAL DATA

All models

Specification	Min	Type	Max	Unit
Voltage input	370	400*	430	VAC
Power factor (20 – 100%)	0.90	0.98		
Frequency	45		60	Hz
Standby power		5		W
Color temperature		5 200		K
Color rendering index	70	80		
Weight, including bracket		22		kg
Ingress protection		IP65		
Electrical Insulation Class		I		
Frontal Surface WS100/150 (tilt)		0.16 (0°) Cw=1		m2
Frontal Surface WS200 (tilt)		0.25 (15°) Cw=1		m2
Frontal Surface WS220/230 (tilt)		0.22 (15°) Cw=1		m2
Frontal Surface WS250 (tilt)		0.23 (15°) Cw=1		m2
Frontal Surface WS300 (tilt)**		0.29 (15°) Cw=1	0.33 (30°)Cw=1	m2
Expected lifetime		35 000	60 000	hrs

Per model

Specification	Min	Type	Max	Unit
Power consumption @100 %				
Standard		1 550	1600	W
Maximum Power (MP)		1 700	1750	W
High Temperature (HT)		1 375	1425	W
Current @100%		@400VAC	@370VAC	
Standard		3.9	4.3	A
Maximum Power (MP)		4.3	4.8	A
High Temperature (HT)		3.5	3.9	A
Ambient Operating Temperature***	-20		50	°C
Luminous flux LEDs LM80		@80%	@100%	
Standard		168 930	202 870	lm
Maximum Power (MP)		183 690	220 590	lm
High Temperature (HT)		154 170	184 420	lm
Luminous efficacy luminaire LM79	@100%	@80%		
Standard	98.4	108.9	159.9	lm/W
Maximum Power (MP)	93.5	103.6	159.9	lm/W
High Temperature (HT)	103.6	114.8	159.9	lm/W

** 230VAC also available upon request*

*** Windage on WS300 at 30° tilt is worst case*

**** Absolute maximum temperature 60°C; auto dimming may occur at high temperatures, see Derating paragraph.*

LIGHT TECHNICAL INFORMATION AND DIMMING-POWER RATIOS

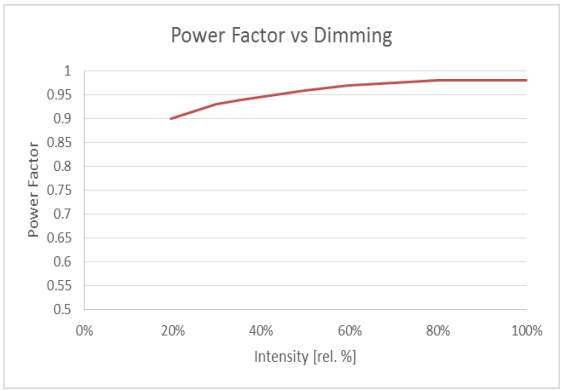
The Gen6 products are available with various beams to accommodate different area sizes, mast heights and different sports fields. For light planners, example light plans are available from AAA-LUX and IES-files are available upon request. For better light spill, control luminaires can be equipped with light spill caps, for which also IES files are available.

For light spill cap positions please use AAA-LUX technical paper TP15.

Lumen output and power consumption ratio, are as follows.

	LUMINAIRE TYPE		
	Stand	MP	HT
WS1005	152615	159729	142472
WS1505	152615	159729	142472
WS2005	160665	168589	149774
WS2205	159515	167323	148731
WS2305	159515	167323	148731
WS2505	160665	168589	149774
WS3005	159515	167323	148731
WS4005	76308	79865	71236
WS6005	152615	159729	142472

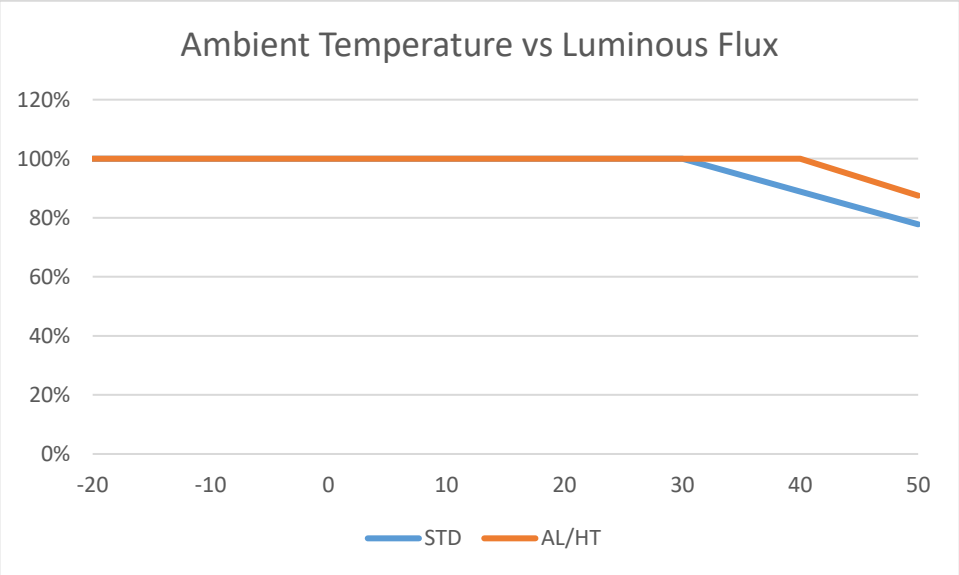
Luminous flux in lm per lamp type based on DEKRA LM-79 measurement



Power consumption versus dimming and Power Factor vs dimming

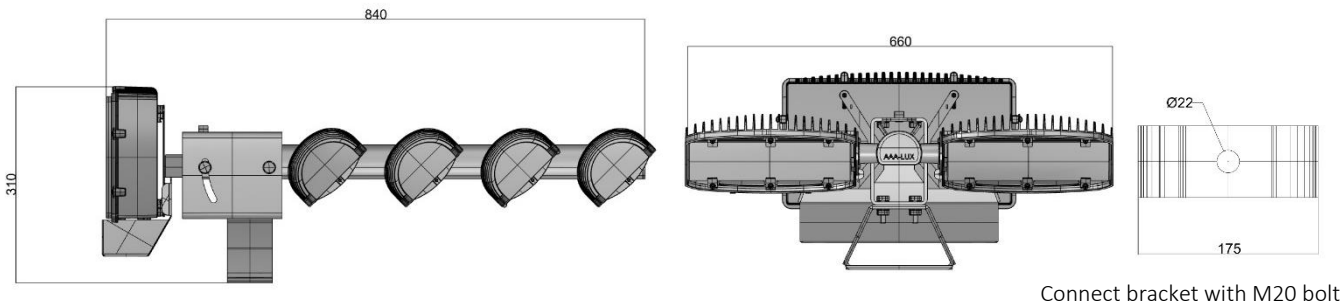
DERATING

The AAA-LUX Gen.6 is tested according to ANSI/UL1598 ISTM (In Situ Temperature Measurement. The built-in temperature protection dims the luminaire automatically, based on the ambient temperature.
The graph below shows the maximum luminous output for the different products per ambient temperature and wind still weather conditions. When the product is already dimmed with the LCMS control system, the temperature protection dims only when this dim level is lower than the set dim level.



MECHANICAL

Dimensions for reference: 660 x 310 x 840 (in mm)



Connect bracket with M20 bolt

CE marking is applicable
Gland dimensions incoming supply voltage wire: M25

Cable diameter acceptance 10 – 14mm
Underslung mounting possible – see manual

PRODUCT COLOR

All models have a dark gray powder coating which is as reference RAL7015/Pantone 446C

ORDERING CODE SYSTEM

Application	Light distribution	Ver.		Input voltage	Option
WS	xxx	x	-	x	xx

Application	Light distribution	Ver.		Input voltage	Option
WS	100, 150, 200, 220 230, 250, 270, 300 400	6	-	4 = 400VAC 2 = 230VAC	= standard MP = max. power HT = high temp

DESCRIPTION OPTIONS

Standard:

- STD luminaires are designed for an average ambient temperature of 30 degrees. Although the STD can handle high temperature up to 40 degrees, it is recommended to switch to HT version in case during normal operating hours the ambient temperature is regularly above 30 degrees in combination with wind still weather.

Lifetime can only be assured when the system prohibits the luminaires working during daytime (not designed to operate in full sun load).

- All sensitive bolts, nuts, washers and mounting clips are made of Stainless Steel
- Light sources are made of corrosion resistive aluminum with low copper content

Maximum power:

- Product is optimized for maximum luminous flux (lm) instead of optimal efficacy (lm/W) and cannot be combined with High Temperature option

High temperature

- Product is designed for high temperature environments and cannot be combined with Maximum Power option.

ACCESSORIES

Light spill shield	These shields can be used to further reduce light pollution. They can be placed on the individual light beams of the LED luminaire. See TP15.
Aiming visor	The use of the aiming visor is as a tool for the installation of the LED luminaire
All LCMS components like Touchscreen, Control Box, Switchbox, etc.	

SAFETY
Before installation read the user manual carefully. Installation is only authorized to trained professionals.

Make sure that everyone working with the product during installation is known with the content of the user manual.

PROTECTIONS – TEMPERATURE and VOLTAGE
The LED luminaires contain a sophisticated over-temperature protection. In case of a high ambient temperature and/or sunlight the luminaire automatically dims to a lower light output.

With a supply voltage higher than 440 VAC the LED luminaire will switch off completely.
With a supply voltage lower than 360 VAC the LED luminaire will switch off.

MAINTENANCE
Maintenance is not needed throughout the lifetime of the product, except cleaning and safety inspection of the product.

400V ELECTRICAL VOLTAGE
During installation the 400V is connected and disconnected via a connection box, with connections for PE (protective earth) and 2-phases. See user manual for more details.

The product contains an electronic switch mode power supply.

In case of a non-functioning product, high voltages can still be on the power supply even after being disconnected from mains. Also a, by software, fully dimmed product will not emit any light and still can be connected to 400V.

400V is considered as life threatening voltage and opening of the electronic driver box is only allowed at an AAA-LUX certified repair center. All other situations voids warranty and can cause life threatening situations.

PATENTS
The product is protected by European patent(s)

COMPLIANCY TO STANDARDS
Safety
IEC 62031:2008 (1st edition) (LED Modules Safety Specifications)
EN 60598-1 and EN 60598-2-1 (Luminaire safety)
EN61000-6-4, EN55015 (Generic Emission)
EN61000-3-2: 2000 (Harmonics)
EN61000-6-2: 2001 (Generic standard immunity)
Corrosion
- DIN 50021 NSS
- DIN 50018 SWF 2.0
- NFT 30.055 2 liter SO2

The information might be subject to change without prior warning.

Made in the Netherlands

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