

Data sheet **Citygrid** **Zhaga** **With Sensor**



The Citygrid Zhaga with Sensor is the all-in-one device which, at an instant, makes a luminaire intelligent and motion controlled .

The compact and all-in-one design of the Citygrid Zhaga with Sensor enables any luminaire with a Zhaga Book 18 receptacle pointing towards the road surface to become a motion controlled smart luminaire.

With patent pending detection algorithms and the slight angle of the sensor towards traffic direction, pedestrians, cyclists and vehicles are reliably detected.

A Citygrid installation can consist of any combination of the Citygrid Controllers including the Citygrid Zhaga Controller, Citygrid Zhaga with Sensor, Citygrid On Pole Controller and the InFix24 controller. Operation of the installation can be as standalone (non-connected) or connected to the Citygrid cloud solution using the Citygrid Gateway.

BENEFITS

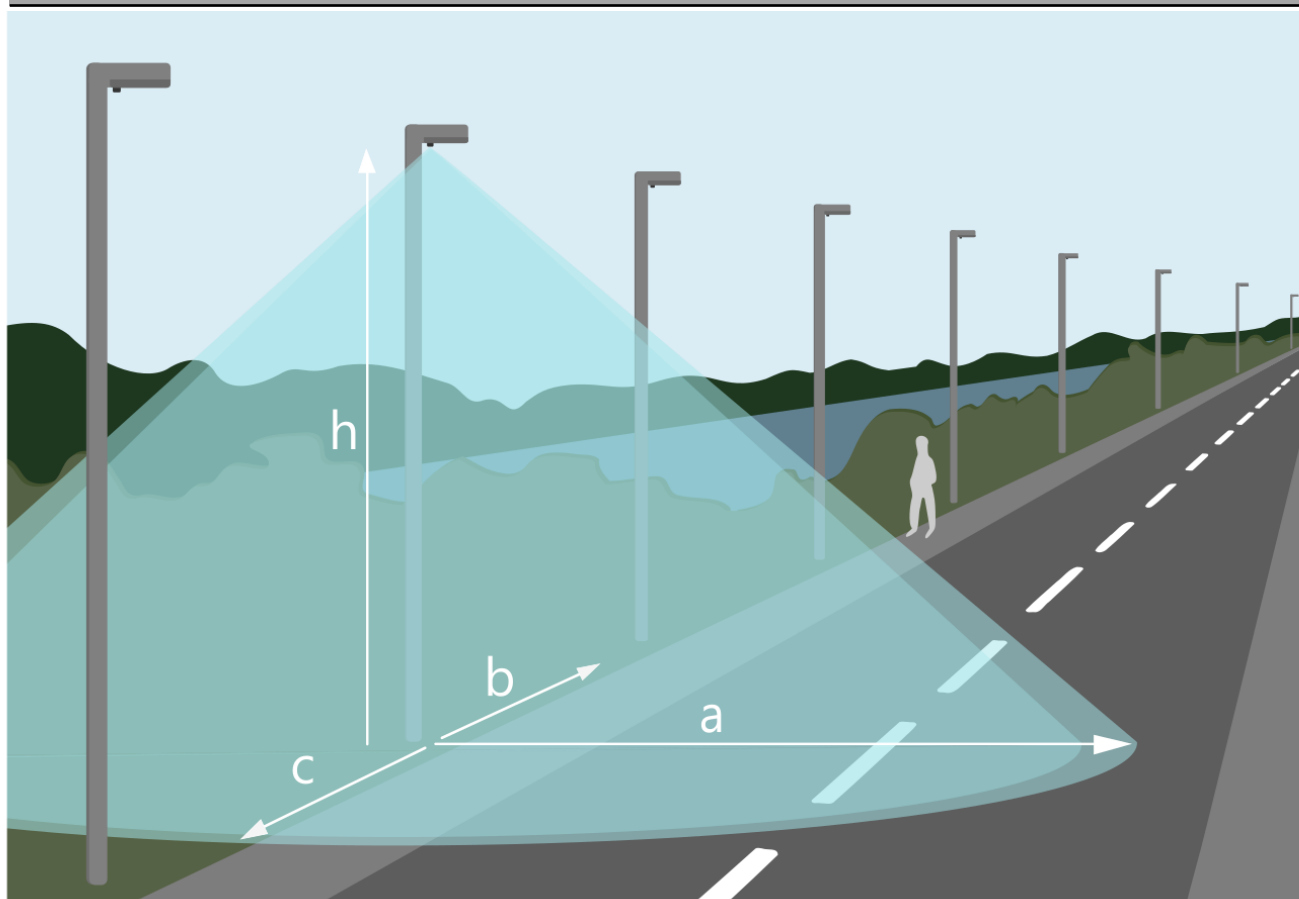
- One step mounting with Zhaga book 18
- Dimming control
- Optional motion control with Citygrid Motion Sensor.
- Standby power < 0,5W
- Automatic system fault detection

FEATURES

- DALI2 and D4i compliant Dali interface
- Wireless local connectivity using 6LowPAN
- AES-128 encrypted wireless communication
- Temperature measurement
- Power metering reading from the LED Driver
- Astronomical & real-time clock integrated
- All data stored on flash memory

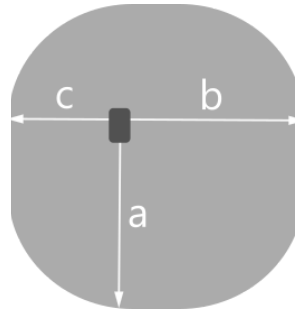
MOTION DETECTION			
Details	Value	Unit	Condition
Detection technology	PIR		Patent pending Analog detection algorithm
Recommended installation height	4 ...8	meter	

DETECTION AREA



Height h	Length a and b	Length c	Unit
4	6,0	4,2	m
5	7,5	5,3	m
6	8,0	6,3	m
7	8,0*	7,1	m
8	7,1*	7,1*	m

*The maximum detection range from the sensor is 10 metres. When the sensor is mounted higher than 6 metres the detection area at ground level shrinks slightly due to the sensor detection range. In those cases the detection lengths are measured 1 metre above the ground instead of at ground level..



Top-down view of detection area

ELECTRICAL CHARACTERISTICS - INPUT

Name	Value	Unit	Condition
Universal input voltage	24	V _{dc}	± 10% (typically powered by LED driver)
Power consumption	< 0,5	W	Always active, no sleep mode

DIMMING

Name	Value	Unit	Condition
Dimming range	0...100	%	Minimum level dependent on the LED Driver
Dimming type	DALI 2		

ON BOARD SENSING

Sensor type	Value	Unit	Condition
Temperature (measurement range)	-30 to + 90	°C	Tc –at PCB

TEMPERATURE & HUMIDITY

Type	Value	Unit	Condition
Operational temperature	-20 to +60	°C	Ambient
Storage temperature	-30 to +80	°C	Ambient
Relative humidity	10-90	%	Non condensing. For use up to 2000m above sea level

PROTECTION			
Specification item	Value	Unit	Condition
Required external fuse	<1	A	
IP rating	IP66		
IK rating	IK09		Top and side impact, excluding sensor lens

WIRELESS COMMUNICATION			
Specification item	Value	Unit	Condition
Gateway ratio	1:128	Control unit	Maximum 500 Control units per site
Frequency Range	868,3	MHz	
Standard	IEEE 802.15.4		
Protocol	6LowPAN		
Encryption	AES-128		
Over-the-air update	Yes		
Recommended distance between units	<200	meter	Theoretical communication distance
Maximum Range	500*	meter	

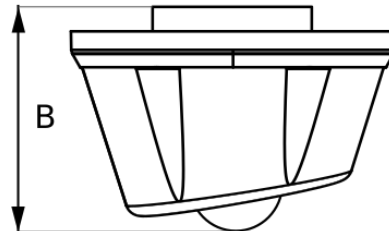
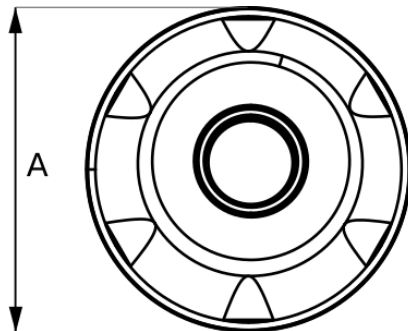
* Maximum range under ideal conditions such as RF matching, line of sight, maximum power. Actual results may vary depending on the customer's design.


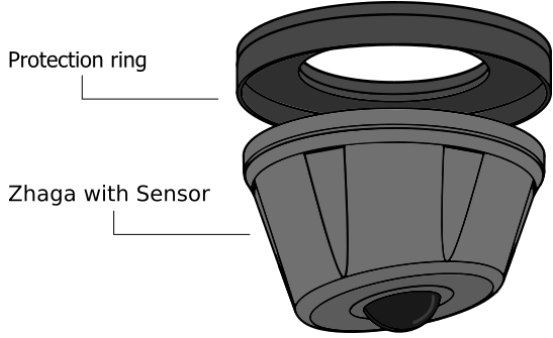
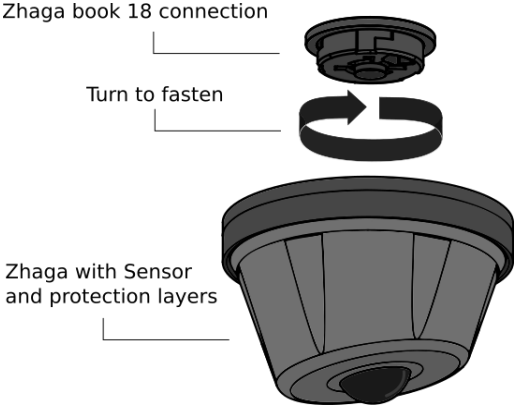
ELECTRICAL CONNECTIONS			
Name / (PIN-number)	Value	Unit	Condition
Power in (1)	24	V _{dc}	± 10%
Shared GND and DALI – (2)	GND		
DALI+ (3)	16	V _{dc}	± 6,50 V _{dc}
General I/O (4)	7-24	V	

* The Citygrid Zhaga with sensor outputs a maximum of 10mA of power on PIN 3 to power the DALI line. Consider max power allowed on the DALI line.

APPROVALS	
Directive:	Standard:
Radio Equipment Directive (RED): 2014/53/EU	EN 301 489 -1 and EN 301 489-3
Electromagnetic Compatibility Directive (EMC): 2014/30/EU	EN 300 220-1 and EN 300 220-2
	EN 61547:2009 (EMC)
	EN 55015:2013 (EMC)
RoHS Directive: 2011/65/EU	EN 50581:2012

DIMENSIONS & WEIGHT			
Item	Value	Unit	Comment
A	80	mm	Diameter
B	52	mm	Height
Weight	0,070	kg	



INSTALLATION	
Description	Illustration
<p>The Zhaga with Sensor is installed on a Zhaga book 18 connection on the luminaire head facing downwards.</p> <p>Make sure that the edge of the unit is installed within the outer edge of the luminaire head to keep it sheltered from rain.</p>	
<p>Before mounting the controller, click together the protection ring and the Zhaga with Sensor unit.</p> <p>The protection ring adds an extra layer of protection to the unit.</p>	 <p>Protection ring</p> <p>Zhaga with Sensor</p>
<p>Hold the unit up to the Zhaga book 18 connection, turn to find the right position where the socket falls into place, and then turn to fasten.</p>	 <p>Zhaga book 18 connection</p> <p>Turn to fasten</p> <p>Zhaga with Sensor and protection layers</p>

LOGISTIC DATA	
Specification item	Value
Product Name	Citygrid Zhaga with Sensor
Seneco Order number	21007
Fagerhult Article number	86491
Parts	Zhaga with Sensor and protection ring
Spare part	Rain skirt (replaces protection ring and protection foam)
Pieces per box	
Box dimensions	
Box weight	

Warranty and expected lifetime	
Specification item	Value
Warranty	5 years
Expected lifetime	Up to 100.000 hours of operation or 20 years since initial commissioning. Expected failure rate <10%



CAUTION

- Avoid touching live parts!
- Do not use the Citygrid Zhaga with Sensor with damaged housing and/or connectors!
- Do not service the Citygrid Zhaga with Sensor when the mains voltage is connected; this includes connecting or disconnecting a LED driver.
- The Citygrid Zhaga with Sensor should only be installed by a trained and qualified person.

Warranty and further information: www.seneco.dk

