ANPR Camera 4 – Datasheet

Version EN 4.0.2 released on Oct 23, 2020.

ID NCAR–H–ANPRCAM–04   category hardware   group cameras   subgroup ANPR   status ready

NeuroCar ANPR Camera – Model 4 is a universal system designed to detect and identify vehicles based on video analysis. The camera processes the video stream, automatically detects each vehicle and identifies it by license plate recognition (ANPR). Additionally, the vehicle class, manufacturer, model version and colour are also recognized. The camera can operate indoors and outdoors, 24/7 (day-night), in extreme weather conditions without external light sources. Thanks to its low power consumption and low power supply voltage, the device can operate on batteries.

Functions

Function name	Availability	Description
Vehicle detection	standard	> 98%, for vehicle speed in the range 0÷250 km/h, based on the video stream (*free flow*), the licence plate must be visible and legible
Vehicle detection without plate	option	> 99%, for vehicle speed in the range of 0÷250 km/h, based on the video stream
Detection of dangerous goods	option	> 90%, ADR plates, "Odpady", "A"
Detection of direction	standard	> 99%, vehicle reverses = -1, vehicle approaches = 1, unknown direction = 0

Function name	Availability	Description
Stop detection	standard	yes, multiple recognition filter (*stop-and-go*)
Number of lanes	standard	1÷3 - recognition for 3 lanes only if the camera is placed above the centre lane
Lane detection	standard	yes
Number plate recognition	standard	> 97% for all detected vehicles with a human-readable registration number, region selection: EU , LA , NE .
Country of origin recognition	option	> 97% for all vehicles with a recognised registration number, 48 countries simultaneously (including entire Europe)
Vehicle classification (AVC)	option	> 92%, classes: car (7), van (11), truck (3), bus (5), motorcycle (10); for front view only, additional IR illuminator required in case of insufficient lighting (e.g. at night)
Maker recognition	option	> 90%, recognition of makers such as "bmw", "audi", etc.; only for frontal detection; additional IR illuminator required at night
Model recognition	option	> 80%, recognition of make and models such as "bmw 5", "audi Q5"; only for frontal detection; additional IR illuminator required at night
Speed measurement	option	±10% accuracy for all vehicles with recognised number plates, after automatic calibration

> **❗ Attention**
>
> All quality parameters are given as maximum values and are determined for optimum location and configuration of the unit (see **Mounting instructions**).

Hardware

Option	A	B
Reference	NCAR-H-ANPRCAM-4A	NCAR-H-ANPRCAM-4B
Image size	3.2M px	5M px
Sensor	CMOS	
Global shutter	yes	
Sensor	SONY IMX265LQR	SONY IMX264LQR

Option	A	B
Sensor size	1/1.8"	2/3"
Resolution (max.)	2048×1536	2448×2048
Frequency (max.)	25 fps	15 fps
Day-night function	yes (mechanically switching IR filter)	
Lens	embedded	
Focal length	11÷40 mm (remote control)	
Aperture	F/1.4 ÷ F/16 (remote control)	
Lens sharpness	remote control	
IR correction	yes	
IR illuminator	built-in, 850nm flash, 6 LEDs, 20° or 40°	
Processor	Intel® ATOM™ E3845, 64-bit quad-core x86, 1.91GHz	
RAM	4G-Byte DDR3L-1333	
Main storage	64G-Byte eMMC	
Auxiliary storage	SDHC/SDXC card, up to 128GB (exchangeable)	
Hardware encryption	option (TPM 1.2)	
Ethernet interface	1×100M/1000M RJ45 port by Intel® I210 controller	
Serial interface	1×RS232, 1×RS485	
GPIO interface	2×programmable IO port, available as input or output (5V-TTL)	
IR Interface	1×input, 1×output to control IR illuminator or relay, load for 100mA/50V	
Clock	built-in, controlled by NTP and/or GPS	
Watchdog	built-in, 1 to 256 s	
GPS	option (with PPS)	
WiFi	option (interchangeable with 3G/LTE module)	
3G, 4G, LTE modem	optional (interchangeable with the WiFi module)	
Power supply	24VDC ±10%	
Energy consumption (max.)	50 W	
Dimensions (W×H×L)	194×117×360 mm	

| Option	A	B
Weight	3 kg	
Operating temperature	-40°C ÷ +65°C	
Protection against water and dust	IP66 (option IP67 - additional sealing required)	
Compatibility	CE	

Software

Element	Description
Firmware	NeuroCar Terminal VI (*Vehicle Identification*) [2]
Version	4.0
GUI	yes, WEB browser (HTML5)
API	yes, REST
Encryption	yes, SSL (HTTPs)
Authentication	HTTP: basic, digest, token
Data formats	JSON, JPG, TAR
Alerts	yes, vehicles selected on the basis of their characteristics
Notifications	`HTTP post` notification for each vehicle or / and alert

Accessories

`ID` `NCAR-H-ACCGRIP-01` Pole mount bracket, with two degrees of freedom to position the camera. Made of powder-coated aluminum, with holes to allow for proper routing of power cables – `optional`.

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Dimensions
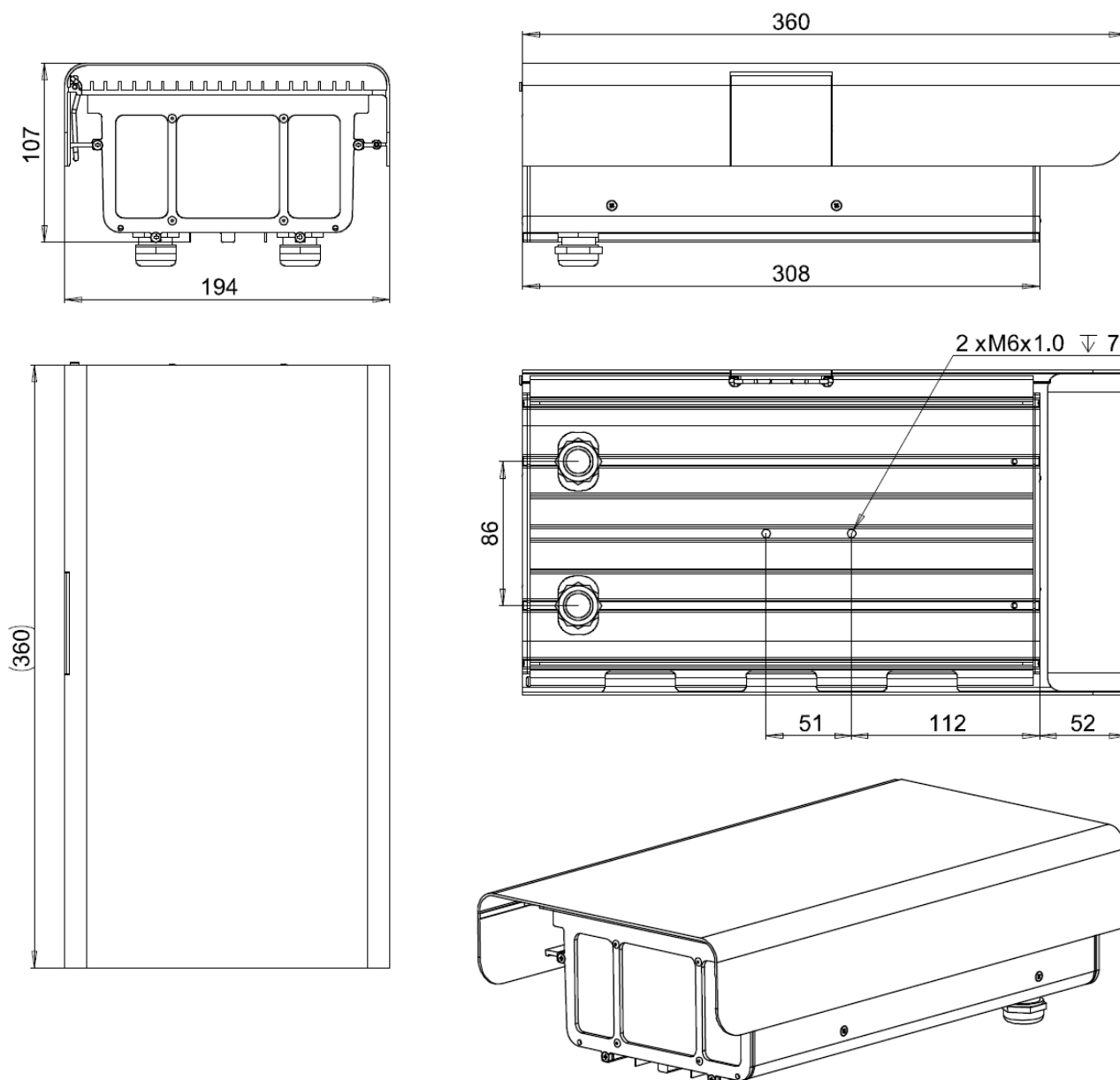
References

1

NeuroCar. Neurocar documentation catalogue. March 2020. URL: https://docs.neurocar.pl/pro/ncar-doc-catalog/.

2

NeuroCar. Terminal vehicle identification 4 - data sheet. March 2020. URL: https://docs.neurocar.pl/pro/ncar-t-vi-4-info/.

Changelog

4.0.2 `2020-04-12`

- Enhancement of certain descriptions

- Better PDF formatting of the document

4.0.1 `2020-03-08`

- Additional information on accessories

4.0.0 `2020-03-01`

- Document initiation

See also

More information about NeuroCar products can be found at https://www.neurocar.pl⬈ or in the NeuroCar Electronic Product Catalogue [1].