

## Video Analysis Software (VAS) ADVANCED VIDEO INTELLIGENCE APPLIED TO TRAFFIC

Juno's Video Analysis Software (VAS) is the crucial element of our Automated Traffic Studies system - it is the 'brains' or intelligence that automates the counting and classification of vehicles and pedestrians from recorded digital video. Using patented computer vision techniques, VAS accurately tracks vehicles from when they enter a scene to when they leave it, recording each vehicle's path and classification. VAS can be used for several different types of traffic studies:

### STUDY TYPES

- Turning Movement Studies
- Highway Studies
- Roundabout Studies
- Midblock Studies
- Pedestrian & Bicycle Studies

After traffic video is uploaded into the software, VAS automatically interprets the video pixel-by-pixel, frame-by-frame, tracking all the vehicle movements according to the type of study being done as well as determining vehicle classification based on size.

The system can also track and count bicycles and pedestrians, either as a part of another study or as a dedicated one.

### MORE ACCURATE THAN MANUAL COUNTS

VAS has an accuracy rate of at 95%+, returning data that is substantially more accurate than the typical manual traffic study. Human collectors often become fatigued, bored, and must pause for certain activities resulting in inaccurate data. Additionally, a human data collector only has a few seconds to correctly identify a vehicle movement and classification - often not enough time for large, busy Junctions or roundabouts. Of course, one can always add more human counters for a given study, but this also increases costs substantially.

Because it is analyzing over 5-million pixels a second, VAS doesn't get overwhelmed by traffic volume, speed, or changing weather conditions. In fact, busy Junctions and roundabouts that normally would require two or four collectors to study often only require one video and VAS - yielding significant cost and time savings.



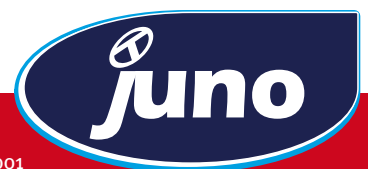
Turning Movement Counts  
(up to 8-legged Junctions)

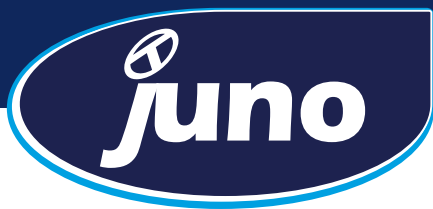


Highway Counts



Roundabout Counts





# Traffic Studies with Video JUNCTIONS, ROUNDABOUTS, HIGHWAYS

## BETTER DATA. . . AT A LOWER COST

When used in conjunction with Juno's Video Collection Units (VCU's), organizations typically save between 30% to 50% of their data collection costs when compared with manual traffic studies. For organizations that outsource their counting to a third-party, the savings are even higher - up to 70%, depending on the specifics of the program.

## THE FIRST AUDITABLE COUNTING TECHNOLOGY

VAS provides you with a video record of the count so the results can always be 100% audited and verified. The fact that VAS returns verifiable results puts it in a different category than road-tubes, counting boards, and radar units; you can't be sure that these technologies 'get it right' because you can't check the count after-the-fact.

With VAS, you can always check the accuracy of every count done with the system. Data is recorded in per-minute bins, which makes it easy to verify the results on a granular level. The system can also track and count bicycles and pedestrians, either as a part of another study or as a dedicated one.

## CLASSIFICATION AVAILABLE



Pedestrians



Pedal Bike



Motorbike



Car



LGV



OGV1



OGV 2



PSV

## COMPATIBLE WITH OTHER VIDEO SOURCES

VAS can analyze digital video from camera systems other than the VCU. In fact, as long as the camera in question meets certain location and frame-rate requirements, VAS can be used on videos from the following types of cameras:

- Pan-Tilt-Zoom (PTZ) cameras
- Zone-detection cameras (i.e. Iteris, Econolite, Trafficon, etc)
- Other portable video recording systems

## REPORTS & RESULTS

VAS returns results in a number of formats through Juno's Data Management & Reporting platform:

- PDF
- Excel
- CSV
- PetraPro (JAMAR-compatible format)
- UTDF (Synchro-compatible format)

## THE PROCESS





## VCU Power Pack FOR LONGER TMC'S, MID-BLOCKS & HIGHWAY COUNTS

Juno's VCU Power Pack allows both public and private data collectors to produce longer, more comprehensive datasets for turning movement counts, mid-block counts and highway counts.

The Power Pack provides users with:

**EXTENDED RECORDING TIME.** With a 48-hour life, the Power Pack will allow you to increase your VCU's recording time to 72 hours. Longer studies means more representative data, which in turn means more accurate decisions.

**MORE FLEXIBLE DEPLOYMENTS.** The Power Pack allows you to deploy your VCUs even more conveniently than before. Securely set your VCUs up a day or two in advance of a study and program the scheduled record times - the Power Pack ensures that your VCU is ready to start recording when the time comes.

**RUGGED RELIABILITY.** Designed with the rigors of field use in mind, the Power Pack is durably built to last. It is also built to remain operational in almost any weather condition.\*

**PLUG & PLAY USABILITY.** With no configuration required, the Power Pack quickly and easily attaches to a VCU Control Box and mounting brackets. Plug it into your VCU, turn on the power, lock and walk away.

*\* Lower temperatures may reduce battery life. Refer to battery guide for specific details. The system can also track and count bicycles and pedestrians, either as a part of another study or as a dedicated one.*



### POWER PACK SPECIFICATIONS

**ENVIRONMENTAL:**  
-22F to 113F (-25C to 45C)  
0 - 95% relative humidity  
Rain, sleet, snow

**RECORD TIME:**  
48 hours (on own)  
72 hours (with Control Box)

**RECHARGING:**  
~8 hrs to recharge  
120V / 240V charging unit

**REGULATORY::**  
ROHS Part 5

**DIMENSIONS & WEIGHT::**  
8.25" H x 10.6" W x 12.25" L  
21 cm x 27 cm x 31 cm  
30 lb (13.6 KG))

**CONNECTORS:**  
5 Contact Industrial Grade,  
Threaded





## Pole-Mountable VCU FOR TRAFFIC STUDIES

Juno's Video Collection Unit (VCU) is the industry's first temporary-install all-weather camera system for collecting traffic video. The pole-mount version quickly and securely attaches to signal, telephone, and utility poles.

**PORTABLE.** The VCU can fit into a small car and is deployable by one person. Mount it on signal poles, telephone poles, and any other type of pole.

**EASY TO USE.** Set it up and configure it in 10 minutes or less. Tear-down in 5 minutes or less. Use a ladder to mount it higher on the pole, or mount it at ground level.

**ACCURATE & VERIFIABLE.** As part of Juno's Automated Video Traffic Studies, the VCU produces counts as accurate as manual counting.

**SECURE.** Put the VCU out of reach of the ground, and lock it into place.

Use for Junctions, Roundabouts, Highways, and other road types.

### VCU SPECIFICATIONS

**Deployed Height:** ~25 ft.

**Folded Height:** ~6.1 ft.

**Temperature Range:** -22 F to 113 F

**Maximum Wind Load:** 50 mph

**Camera:** Low-light (0.03 lux)

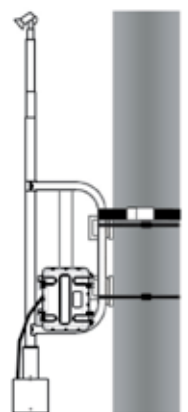
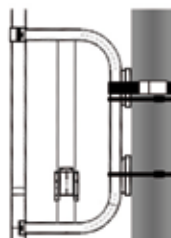
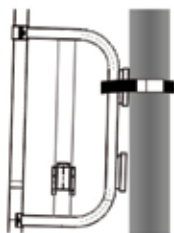
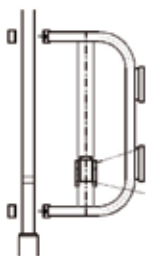
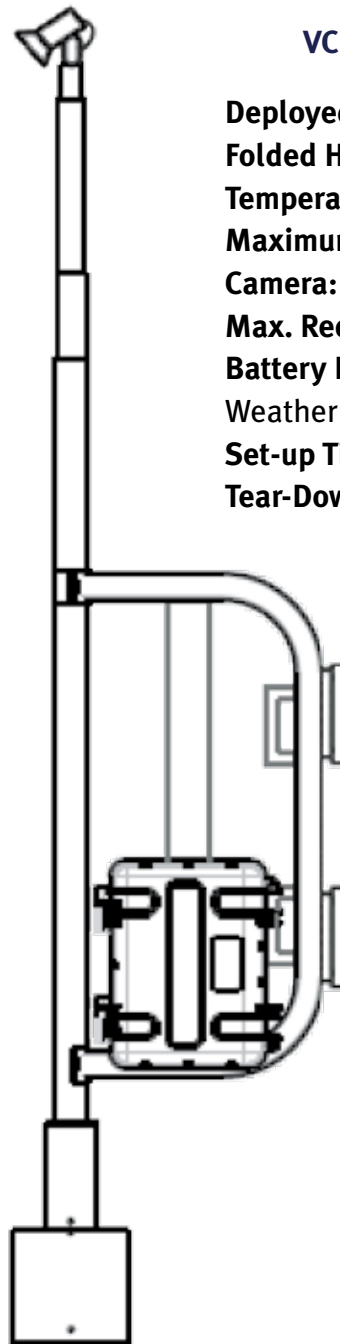
**Max. Record Time:** 30 hours

**Battery Recharge Time:** ~4 hours

**Weather :** Rain, sleet, snow

**Set-up Time :** 10 min.

**Tear-Down Time:** 5 min.





# Video Collection Unit (VCU) Tripod DATASHEET & SPECIFICATIONS

## Tripod VCU FOR TRAFFIC STUDIES

Juno's Video Collection Unit (VCU) is the industry's first temporary-install all-weather camera system for collecting traffic video. The tripod VCU features a portable size and weight, durable construction, and long battery life and recording time.

**PORTABLE.** The VCU can fit into a small car and is deployable by one person. Set it up anywhere.

**EASY TO USE.** Set it up and configure it in 10 minutes or less. Tear-down in 5 minutes or less.

**ACCURATE & VERIFIABLE.** As part of Juno's Automated Video Traffic Studies, the VCU produces counts as accurate as manual counting.

**SCHEDULING.** Set the VCU up, enter your schedule, and leave it to record.

Use for Junctions, Roundabouts, Highways, and other road types.

### VCU 2.0 SPECIFICATIONS

- Deployed Height:** ~25 ft.
- Folded Height:** ~6.1 ft.
- Deployed Footprint:** 6.2 ft. Ø
- Folded Footprint:** 9.75 in. Ø
- Temperature Range:** -22 F to 113 F
- Maximum Wind Load:** 50 mph
- Camera:** Low-light (0.03 lux)
- Max. Battery Life:** 72 hours
- Battery Recharge Time:** ~8 hours
- Max. Recording Time:** 18 - 36 hours
- Weather :** Rain, sleet, snow
- Set-up Time :** 10 min.
- Tear-Down Time :** 5 min.

