

↑
VERICOM
→ G

VC3000

**PERFORMANCE TESTING COMPUTER
BRAKING TEST COMPUTER
DATA ACQUISITION SYSTEM
ON-BOARD DYNAMOMETER**

Dual axis accelerometer



**Braking Performance
Drag Factor
Braking Force
Coefficient of Friction
Dynamic Friction
Static Friction
Slip Friction**

**Speed
Time
Distance
Horsepower (corrected std)
Torque
RPM
Gear Ratio (rev/ft)**

**Longitudinal G-Force
Lateral G-Force
Vertical G-Force
Gradient
Superelevation
Delta Velocity
English or Metric**

Made in the United States of America since 1984

THE ULTIMATE DEVICE FOR MEASURING: ACCELERATION, DECELERATION AND LATERAL G



ADVANTAGES OF USING THE VC3000

- Accuracy:** G force 1%, Speed 1 mph, Distance 1%, Time .01 second.
- Easy to Operate:** The VC3000 is very sophisticated on the inside to make it very simple to operate on the outside. Each button is clearly labeled Distance, Speed, Time, etc.
- Cost Effective:** The VC3000 is a fraction of the cost of larger, bulkier equipment that would give comparable information.
- Credibility:** The VC3000 is a reliable instrument that applies the exact laws of physics, therefore its accuracy can be demonstrated by comparing the data to any reliable method that measures speed, distance, time or G-force.
- Versatility:** The VC3000 will measure acceleration, deceleration and lateral G force. Additional tri axis accelerometers and other sensors can be added when needed. Expandable to 22 sensors. Software is provided for easy analysis of all accelerometers and sensors.
- Portability:** There are no cumbersome electrical or mechanical connections required. It mounts with suction cups or vacuum cups to the windshield of any vehicle.
- Safety:** All operations are done from inside the vehicle, eliminating the possibility of the operator becoming the victim in a pedestrian/vehicle accident.
- Time Savings:** Each vehicle can be tested for braking and acceleration in less than 5 minutes from installation to finish.
- Labor Savings:** Fewer man-hours are required and more data is collected. Our Profile © for Windows software makes it quick and easy to compare runs and analyze data.
- Calibration:** Utilizing the continuous G mode the operator can do a simple calibration check.



VC3000DAQ #330850-DAQ

- 6 channel data acquisition system.
- Expandable up to 22 sensors.
- PC interface, USB port, and Profile© software.
- Accepts all options, sensors and tachometer.



VC3000PC #320850-PC

- PC interface, RS232 port and Profile© Software.
- Accepts options and tachometer only.



VC3000 Brake Meter-vac #320430-vac

- Accepts options only.



VC3000 Brake Meter #320430

- Accepts options only.

Standard features for all VC3000 units

- Records and displays time, acceleration in 2-axis, speed, distance and horsepower. Also displays average acceleration & peak acceleration.
- Two axis accelerometer $\pm 2G$ (X longitudinal & Y lateral).
- Two built-in levels (pitch & roll).
- Graphic display 128 x 64 dot EL backlit LCD. Displays data, acceleration graph, bar graphs and friction circle.
- Sample rate 100 hertz.
- Quick clutch easy leveling mounting kit.
- Vacuum Cup Mounting Kit (not included with #320430).
- Suction cup mounting kit.
- 17 key EL backlit keypad.
- All modular connections.
- RS232 port for printing on a portable thermal printer.
- NiMH rechargeable batteries for portability with 110V / 12V charger.
- Battery indicator display.
- Custom carrying case.
- Acceleration testing mode.
- Brake testing mode.
- Continuous display of acceleration.
- Audible G force alarm threshold setting.
- Displays table after an acceleration test.
- Calculates adjusted distance for an adjusted speed using true distance and true speed.
- Displays in Metric and English units.
- Activates from G value or reaction time switch (also see options).
- Dimensions without mounting brackets 6 ¾ in wide, 3 ½ in high, 4 in deep. Weight 1 pound.

Profile© Software

Typical graphs and tables for analyzing data and making presentations

Average of Runs			Time	Ave G	Speed	Distance	Adj Dist	Peak G
			1.99	-.833	36.47	53.16	48.56	-1.002
Vehicle	Date	Run	Time (sec)	Ave G	Speed (mph)	Distance (feet)	Adj Dist (feet)	Peak G
97 Taurus	5/8/1997	1	1.74	-0.823	31.40	39.71	49.44	-0.965
97 Taurus	5/8/1997	5	1.77	-0.821	31.86	41.25	49.80	-0.987
97 Taurus	5/8/1997	7	1.93	-0.827	35.01	47.00	46.97	-0.982
97 Taurus	5/8/1997	8	2.23	-0.847	41.44	66.39	0.00	-0.988
97 Taurus	5/8/1997	9	1.90	-0.832	34.69	47.15	48.02	-1.090
97 Taurus	5/8/1997	10	2.39	-0.848	44.44	77.44	0.00	-0.988

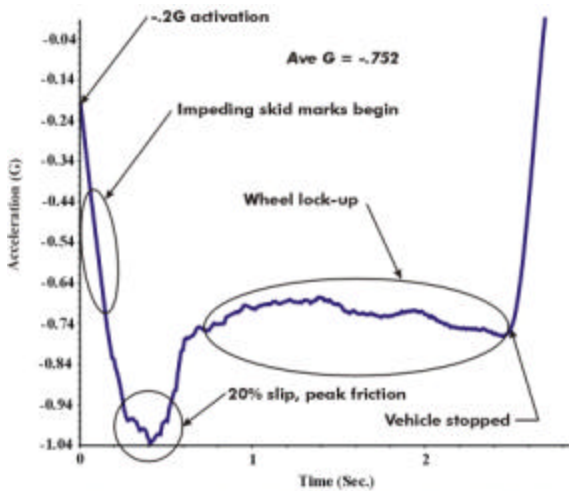
	Distance (feet)	Time (sec)	Speed (MPH)	RPM	G-force	HP	Torque	Ave HP	Ave Torq
1/4 mile	1,320.0	14.067	107.70	4857	.1803	441	407	321	301
1,000 feet	1,000.0	11.956	98.92	4653	.2131	419	413	302	283
1/8 mile	660.0	9.449	85.43	5779	.2590	398	315	270	265
1/16 mile	330.0	6.487	65.95	4675	.3163	335	329	222	235
60 feet	60.0	2.805	30.67	3893	.5081	222	262	207	142
30 feet	30.0	2.018	20.82	3302	.6064	181	251	68	94
15 feet	15.0	1.421	14.04	4223	.4114	81	88	44	59
Peak G	33.2	2.120	22.25	3350	.6949	200	274	74	102
Peak RPM	857.6	10.950	93.88	6238	.2180	385	283	291	272
60 MPH	254.5	5.671	60.00	4350	.3393	310	326	208	222
30 MPH	57.2	2.744	30.00	3811	.4966	216	260	104	140
35-70 MPH	310.4	3.893	35.00					323	313
---at pk HP	202.1	5.050	54.96	4364	.4769	380	399		
---at pk torq	206.1	5.100	55.49	4216	.4737	374	407		

Typical data table stored for each run. Data table may be printed in any interval, .1 sec, .2 sec etc.

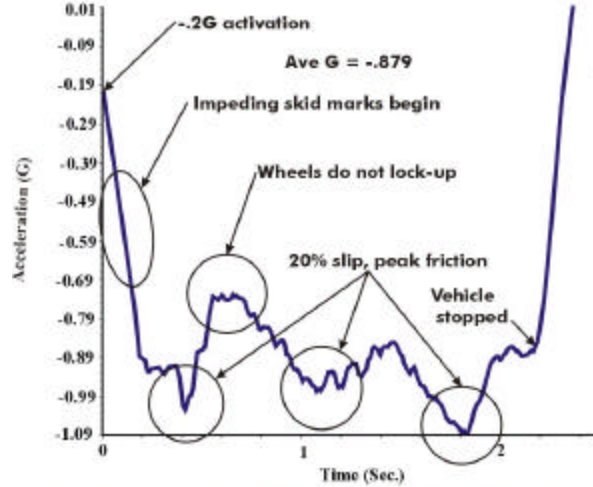
Time	G	Speed	Distance	Time	G	Speed	Distance	Time	G	Speed	Distance
0.00	0.0000	32.95	0.00	0.94	-0.9113	15.01	28.60	1.49	-1.0440	2.93	34.86
0.01	-0.2557	32.89	0.42	0.95	-0.9064	14.81	28.79	1.50	-1.0375	2.70	34.89
0.02	-0.3081	32.83	0.83	0.96	-0.9064	14.61	28.98	1.51	-1.0277	2.48	34.93
0.03	-0.3999	32.74	1.24	0.97	-0.9211	14.41	29.16	1.52	-1.0145	2.26	34.96
0.04	-0.4966	32.63	1.66	0.98	-0.9441	14.20	29.34	1.53	-1.0129	2.03	34.98
0.05	-0.6064	32.50	2.07	0.99	-0.9441	14.00	29.52	1.54	-1.0178	1.81	35.01
0.06	-0.7326	32.34	2.47	1.00	-0.9359	13.79	29.69	1.55	-0.9900	1.59	35.03
0.07	-0.8605	32.15	2.88	1.01	-0.9310	13.59	29.87	1.56	-0.9637	1.38	35.05
0.08	-1.0080	31.93	3.29	1.02	-0.9457	13.38	30.04	1.57	-0.9457	1.18	35.06
0.09	-1.1457	31.67	3.69	1.03	-0.9670	13.17	30.20	1.58	-0.9424	0.97	35.08
0.10	-1.2309	31.40	4.08	1.04	-0.9637	12.96	30.37	1.59	-0.9523	0.76	35.09
0.11	-1.2424	31.13	4.48	1.05	-0.9539	12.75	30.53	1.60	-0.9277	0.56	35.10
0.12	-1.1965	30.87	4.87	1.06	-0.9490	12.54	30.69	1.61	-0.8834	0.36	35.10
0.13	-1.1096	30.63	5.26	1.07	-0.9719	12.33	30.85	1.62	-0.8408	0.18	35.11
0.14	-1.0309	30.40	5.64	1.08	-0.9949	12.11	31.00	1.63	-0.8113	0.00	35.11
.....				

THE PRECISION ACCELEROMETER WILL DETECT THE DIFFERENCE BETWEEN ABS AND STANDARD BRAKES

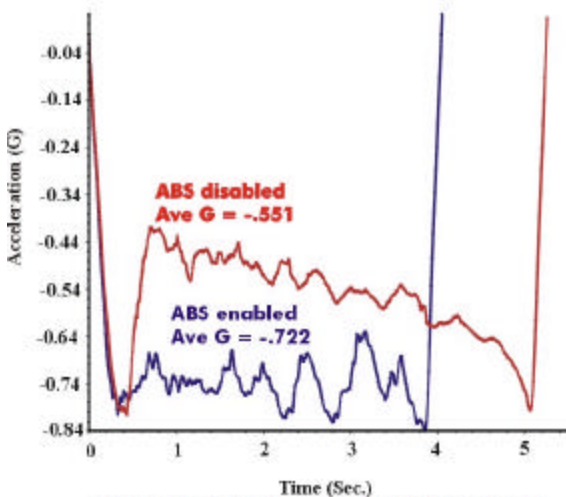
Deceleration Graphs



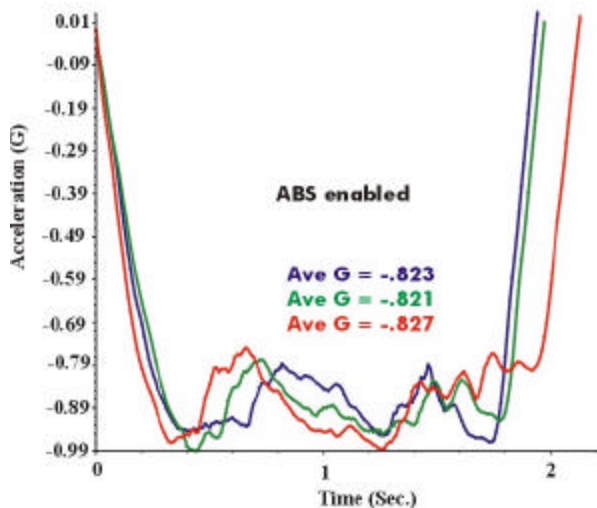
Friction curve of a 1998 Cadillac Deville ABS disabled on dry surface



Friction curve of a 1998 Cadillac Deville ABS enabled on dry surface



Overlay of 1997 Taurus, ABS vs ABS disabled on wet surface

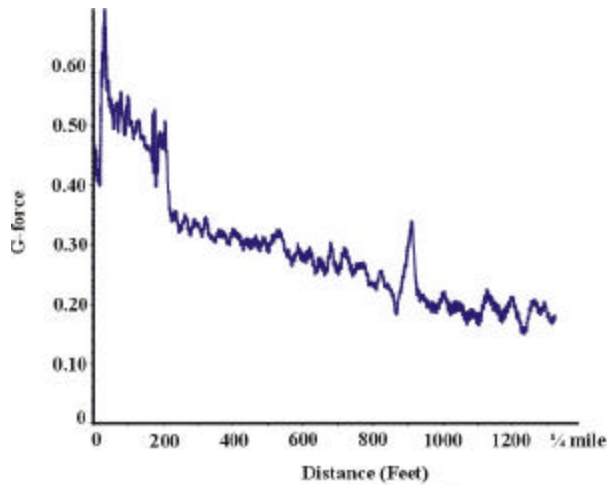


Typical overlay to compare frictions curves

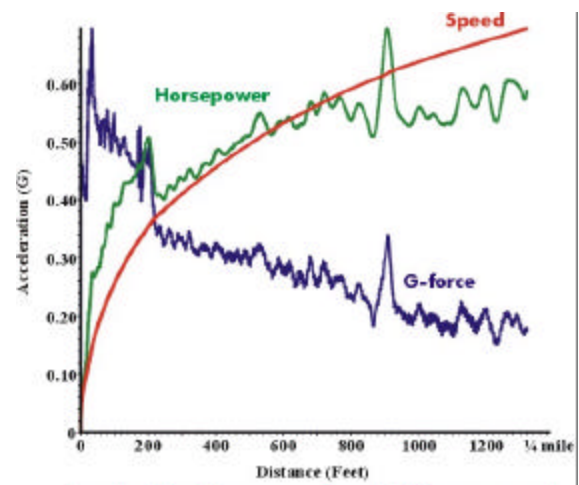
These are typical graphs that can easily be created using the VC3000PC/VC3000DAQ with Profile© software.

THE VC3000PC/VC3000DAQ ARE EXTREMELY VERSATILE AND CAN MEASURE ACCELERATION OR DECELERATION

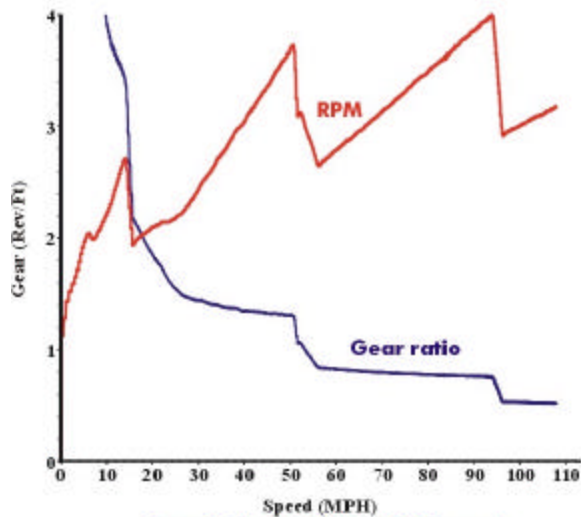
Acceleration Graphs



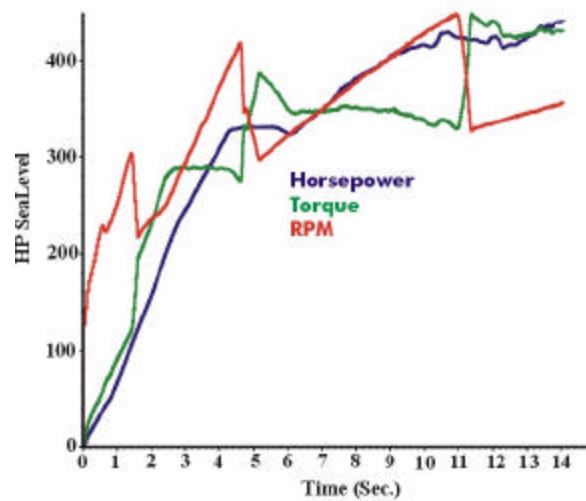
Acceleration graph



Acceleration, Horsepower, Speed & Distance graph



Gear Ratio, Speed and RPM graph



Gear Ratio, Speed & RPM graph

These are typical graphs that can easily be created using the VC3000PC/VC3000DAQ with Profile© software.

BRAKING REACTION TIMER



A valuable tool for drivers training and rehabilitation assessment. Add the reaction time switch to any VC3000 and create your own drivers training instrument.

Measurements Recorded

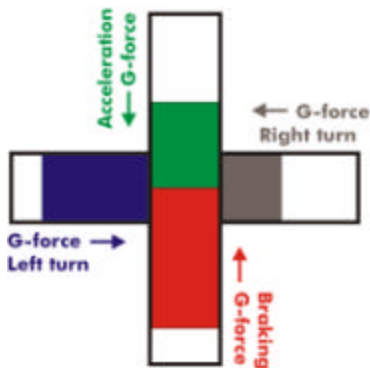
- Reaction Time & Distance.
- Braking Speed.
- Total Braking Distance.
- Total Braking Time.
- Longitudinal average G and peak G force.
- Lateral average G and peak G force.

Typical 30 mph Test

- ✓ Reaction Time = .75 Sec.
- ✓ Total Stopping Time = 2.55 Sec.
- ✓ Braking Speed = 30.0 MPH.
- ✓ Reaction Distance = 33 ft.
- ✓ Total Stopping Distance = 73 ft.
- ✓ Average G-force = .536.
- ✓ Peak G-force = -.85 G.

Used by leading experts in:

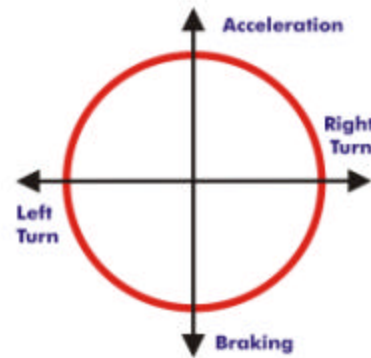
- ❖ Drivers Training.
- ❖ Occupational Therapy.
- ❖ Rehab/Driver Assessment.
- ❖ Testing Handicap Vehicles.
- ❖ Traffic Crash Investigation.
- ❖ Law Enforcement.



4 Directional grayscale bar graph is displayed for a driver's training aid

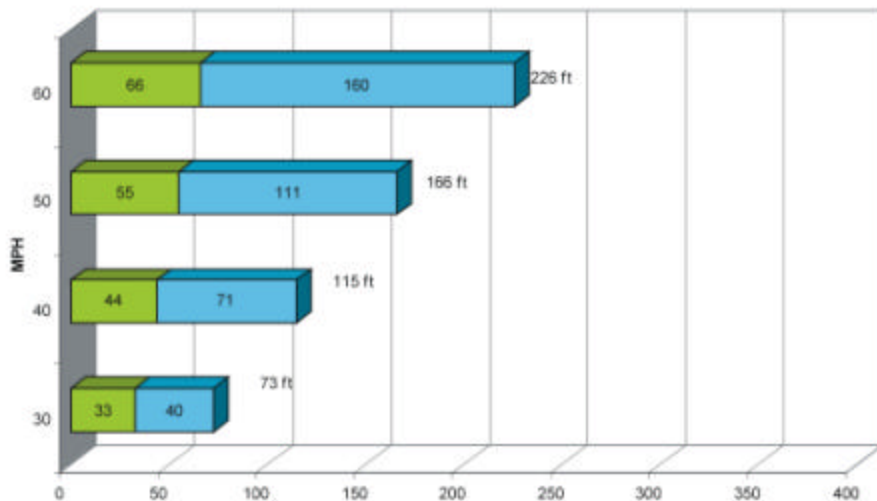


Alarm Threshold Settings







The friction circle is plotted to measure the drivers performance

Stopping Distance when reaction time is .75 sec and braking force is .75 Gs








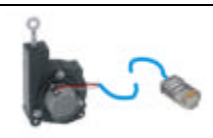


Options

	<p>Graphic Thermal Micro Printer #120104 Printer plugs directly into the VC3000 and prints out information in the field without downloading to a PC. Rechargeable battery & charger included. Dim (inches): W 6.3 × D 6.7 × H 2 .6. Wight: 2 pounds</p>
	<p>Reaction Time Switch # 117304 Push button switch with red light diode for measuring drivers reaction time and perception time. Plugs directly into the VC3000.</p>
	<p>Activation Switch # 117303 12V to 36V switch, connects to brake lights. Plugs directly in to the VC3000. G threshold activation software is also included.</p>

	<p>Tachometer # 230106 Coil pick-up, magnetic pick-up or Inductive pick-up available. Profile© will compute torque and gear ratio (rev/ft) when RPM are measured. Connects to the VC3000PC and VC3000DAQ only.</p>
---	--

Sensors for the VC3000DAQ

	<p>OBDII Vehicle Sensor Interface #117312 Connects to all 1996 or newer domestic and import cars and trucks to monitor up to 27 sensors built into the vehicle. Log sensor data into the VC3000DAQ along with all the standard VC3000 information then import to Profile for graphing and analysis.</p>	
	<p>Six Sensor Junction Box # 117302 Accommodates up to 6 sensors. 6 each RJ45 jacks for input and one RJ45 connector for output are used for quick and easy connections to the VC3000DAQ.</p>	
	<p>Load Cell # 230104 Mounts on the vehicle brake pedal and measures brake pedal force up to 200 pounds or 900 Newtons. May be used as an activation switch. Plugs directly into the VC3000DAQ or the sensor junction box. Dimensions: 4.75 inches X 2.74 inches X 1.25 inches, Weight 1.5 lbs.</p>	
	<p>10 G Tri Axis Accelerometer# 230105-10 10 G tri axis is very popular for measuring low speed impacts and other applications. 50 G tri axis is also popular. Other tri axis accelerometers are available up to 400 G. Plugs into the sensor junction box.</p>	
	<p>Angular rate Sensor #230108 Measures angular rotation in degrees per second (yaw sensor).</p>	
	<p>Z Axis Accelerometer # 230101-2 Vertical axis accelerometer ± 2G. Plugs directly into the VC3000DAQ or the sensor junction box.</p>	<p>Thermocouple #230205-xxxx K type, measures exhaust, intake, engine & oil temperature, etc. Amplifier & pressure fitting mount included. Plugs directly into the VC3000DAQ. 0°-200°, 0°-1750°, 32°-212°, 32-932°, 32-1472°, 200°-1400, 392°-2192°</p>
	<p>Air or Fluid Transducer # 230202-100 Measures air, fuel, brake fluid etc. up to 100 psi. Other sensors are available 25 – 50 – 75 – 100 - 250 - 500 psi & up. Plugs directly into the VC3000DAQ or the sensor junction box.</p>	
	<p>String Pot # 230107-15 String potentiometer, measures distances. Range 2.8 inches to 15 inches. Also available in lengths of 2 to 10, 2.8 to 30, 3.8 to 20, 3.8 to 40, 4.7 to 25, 4.7 to 50. Plugs directly into the VC3000DAQ or the sensor junction box. Dimensions (inches): W 1.75 x .90 x H 2.4. Weight 2 oz.</p>	

VC3000 DATA DISPLAYED

Braking Information Displayed for all units

- Average G-force (drag factor or braking force).
- Braking speed.
- Braking distance.
- Braking time.
- 1st Peak G and time it occurred.
- Highest Peak G and the time it occurred.
- Peak lateral G.
- G-force every .1 second up to 5 seconds.
- Deceleration graph.
- G-force Bar graph.
- Friction curve.

Acceleration Information Displayed for all units

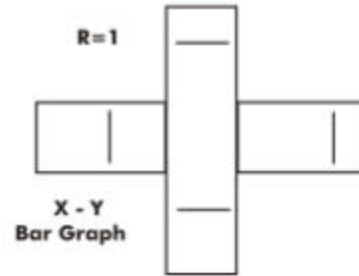
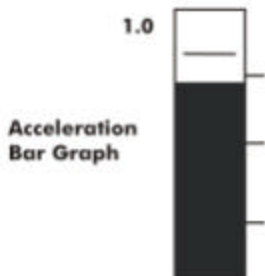
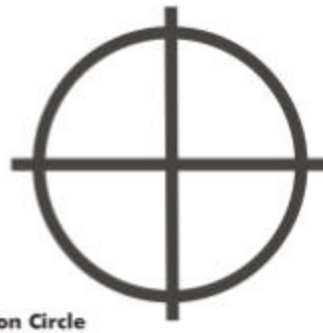
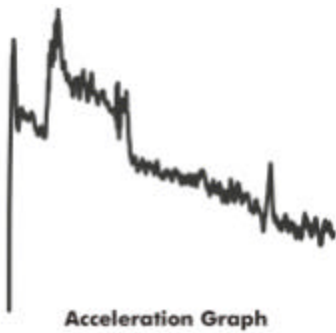
The VC3000 may be programmed for any speed, time or distance parameters, the default setting is ¼ mile.

¼ mile QuickData™ table

Distance	Time	Speed	G-force
¼ mile	11.15	128.6	.17
1000 feet	9.30	113.4	.24
1/8mile	7.14	100.1	.33
330 feet	4.64	79.3	.44
60 feet	1.71	43.3	.83
30 feet	1.17	33.7	.79
15 feet	0.84	26.1	1.31
152 ft	2.91	60 mph	.63
21 ft	0.98	30 mph	1.11

Peak horsepower, Peak G, and Ave G is also displayed.

VC3000 GRAPHS DISPLAYED



RUNWAY FRICTION TESTING



Mounts to the windshield of any vehicle

FAA Approved

The Vericom VC3000RFM is the only decelerometer approved by the FAA and is made in the USA.

Quick, easy to operate, extremely accurate, completely portable and low cost. Apply brakes for only one second to measure Runway Friction (mu). Vericom has been making electronic brake meters since 1984.

VC3000RFM includes:

- VC3000 Decelerometer.
- Easy mounting Vacuum cup kit.
- Thermo micro printer.
- USB and RS232 ports.
- PC interface & Profile© software.
- Hard shell carrying case.
- Braking options: apply brake for only one second or come to a complete stop.

Measures

Friction (μ)
Deceleration
Speed
Time
Distance
Lateral G

Optional Features

[Ambient Temperature](#)
[Surface Temperature](#)
[Brake Pedal Force](#)
[Wireless connection](#)

Features:

- Fully approved by the FAA in AC 150/5200-30A , Airport Winter Safety and Operations, Appendix 5, Performance Standards for Decelerometers. Prints out test results as required in Appendix 5 par 3a, 3b & 3d.
- Quick clutch easy leveling mounting kit provided to prevent false reading due to bounce or ambient vibration.
- Two built-in levels (pitch & roll).
- Easily programmable for proper identification of all runways and taxiways.
- Does all calculations as required by averaging 3 tests per zone and 9 tests per runway.
- Vehicle does not need to come to a complete stop to calculate runway friction.
- ABS compatible.
- Automatically sorts runway zones.
- Airport name and operator name and ID entry.
- Two axis accelerometer (X longitudinal & Y lateral). Y axis may be used to detect yaw error when braking.
- Comes with [thermal micro printer](#).
- [Wireless transfer](#) of data to tower or office from vehicle (optional).
- [Surface](#) and [ambient air](#) temperature recorded with each test (optional).
- Graphic display 128 x 64 dot EL backlit LCD.
- Records and displays time, acceleration in 2-axis, speed, distance and additional sensors every .01 second. Also displays average acceleration & peak acceleration.
- Recalls information from previous runs on the display.
- A six channel data acquisition input is included to allow up to 6 additional sensors to be added.
- 16 key EL backlit keypad.
- All modular connectors.
- USB port for transferring files to a computer.
- Application software [Profile©](#) 3.
- RS232 port for printing on a portable thermal printer.
- NiMH rechargeable batteries for portability.
- Battery indicator display.
- Continuous display of acceleration, lateral G or any external sensor.
- Metric and English units.
- Saves 21.8 minutes (1,308 seconds) of data in Flash memory for transferring to a computer, printing or recalling a previous test.
- Up to 255 runs stored.
- Any test stored in memory can be deleted.

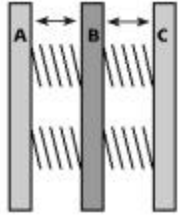
Typical printout

VERICOM VC3000RFM						
*** Runway Friction Report ***						
Airport = MSP						
Op Name = Joe						
Op ID = 87654321						
Report Time = 11:03am						
Report Date = 10/09/01						
Run	RW	Zone	FN %	Time	Speed mph	Temp F
1	9L	Touch	22	15:50	28.9	31
2	9L	Touch	27	15:51	29.2	31
3	9L	Touch	24	15:51	29.1	32
4	9L	Mid	28	15:51	303	32
5	9L	Mid	27	15:52	31.4	32
6	9L	Mid	26	15:52	29.8	31
7	9L	Roll	26	15:53	30.1	29
8	9L	Roll	24	15:53	29.7	29
9	9L	Roll	26	15:53	29.2	30
10	20	Touch	31	15:55	30.3	30
11	20	Touch	30	15:56	30.9	32
12	20	Touch	30	15:56	29.0	32
13	20	Mid	29	15:58	27.7	31
14	20	Mid	28	15:58	30.3	31
15	20	Mid	30	15:59	30.3	30
16	20	Roll	32	15:61	31.1	29
17	20	Roll	31	15:61	31.9	29
18	20	Roll	31	15:61	30.5	31

Runway = 9L
 Touchdown friction = 24
 Midpoint friction = 27
 Rollout friction = 26
 RunWay friction = 26

Runway = 20
 Touchdown friction = 30
 Midpoint friction = 29
 Rollout friction = 31
 RunWay friction = 29

Signature_____



How an Accelerometer works

Plate B is a mass suspended by springs between plate A and plate C. At zero G's plate B is equidistant from plate A & plate C. When you apply the brakes the vehicle pulls negative G's and B moves closer to C and farther away from plate A. As B moves closer to C the voltage from B to C increases at the rate of one volt per G. .01 volt will equal .01 G. 1 volt will equal 1 G. When you increase your speed plate B moves closer to plate A and farther away from plate C. When this occurs we are measuring the positive acceleration of the vehicle.

ABS & Standard Brakes

Most braking test devices take only one G reading and assume constant deceleration, therefore they can not measure the difference between ABS and standard brakes. However the VC3000 measures the instantaneous G-force 100 times per second, effectively measuring the difference between ABS and standard brakes. Other devices without a critically damped accelerator have a slower response time and can not pick up the sudden change in friction, which occurs as the ABS controls the angular velocity of the tire.

How the VC3000 works

The VC3000 has 3 major components: an accelerometer, a crystal clock and a Microcontroller. Knowing the acceleration and the time the Microcontroller calculates velocity every 1/100 second ($V=a \times t$). Knowing the velocity and the time the Microcontroller calculates distance every 1/100 second ($D=V \times t$). This concept is called inertial navigation, which has been used for more than 50 years in guided missiles, airplanes and submarines. There is nothing new about this technology: what is new is that modern technology makes it possible for us to manufacture this device inexpensively so that it is cost effective for the application of vehicle brake testing.

Mounting

Attach the VC3000 to the windshield of the vehicle with suction cups. The unit comes with suction cups, mounting brackets and NiMH batteries. Vacuum cups provide a more powerful mounting grip and are included with some models. No electrical or mechanical connections are needed. It can be installed in less than one minute.

Tested accurate

The VC3000 is so accurate that it is considered the most modern and reliable braking test device used by the leading experts in traffic accident investigation worldwide. It is used by automobile, truck and bus manufacturers, thousands of law enforcement officers, universities, transit companies and training academies. The Gforce is measured within .001 G, this is an accuracy of 1/10 of 1%. The VC3000 can measure a 1/4 mile within 14 feet, this is an accuracy of 1% over 1,320 ft. From 0 to 100 mph the VC3000 is accurate within 1 mph, this is an accuracy of 1% at 100 mph. Most road vehicles have a pitch greater than .02 and less than .04. The VC3000 defaults to a pitch adjustment value of .03. Greater than 1% accuracy can be achieved by adjusting the pitch factor.

Confirming Accuracy

There are several ways to confirm the accuracy of the VC3000. The two easiest ways are: 1) Utilizing the continuous G mode, rotate the VC3000 90 degrees. The VC3000 will display 1.000 which is the gravitational pull of the Earth and the sine of 90 degrees. 2) a radar gun or accurate speedometer may be used to confirm the speed displayed by the VC3000. If the speed is correct then the G-force is correct.

Vehicle types

The VC3000 will work on all types of vehicles including trucks, automobiles, buses, school buses, trains, light rail, motorcycles, pick-ups, vans, ATVs and snowmobiles.









Activation

The VC3000 is activated at a .2 G threshold, which can be changed to any G value. Activation can also be initiated with the 12V-36V brake light switch, reaction time switch or brake pedal load cell.

Calibration

A calibration test is simple and easy to do because the VC3000 has a continuous G mode. Rotate the VC3000 90° and it will display the gravitational pull of the earth, which is 1.00 G. Easy to follow calibration check instructions are in the operators manual.

APPLICATIONS FOR THE VERICOM VC3000

<p>Traffic Crash Reconstruction</p> 	<p>The Vericom Brake Testing Computer has been used by leading experts in the field of traffic crash investigation since 1984 including IPTM and Northwestern Traffic Institute. It has become the favorite and most widely used accelerometer device in the US and the world for measuring drag factor.</p>
<p>Bus Maintenance</p> 	<p>The electronic Vericom has replaced the outdated mechanical type brake meter for DOT brake inspection. It has become the only Brake Meter approved by New Jersey DOT, New York State DOT, New Jersey Transit Authorities, New York City Transit Authorities, most leading transit authorities in the US, Canada and many other countries.</p>
<p>Engineers and OEM</p> 	<p>Automotive Engineers throughout the world use the Vericom performance computer for measuring acceleration, deceleration and Lateral G. Our elite customer list includes all major vehicle manufacturers, tire manufacturers and most OEM suppliers.</p>
<p>Drivers Training</p> 	<p>Add the reaction timer switch and the Vericom becomes a valuable tool for driver's training and assessment. Used by rehabilitation centers and driving schools.</p>
<p>Runway Friction Testing</p> 	<p>Approved by the FAA as a decelerometer for measuring runway friction during winter conditions.</p>
<p>Rail Car Testing</p> 	<p>The Vericom inertial navigation system is fast replacing the expensive chart recorders for measuring and recording rail car performance.</p>
<p>Trucks</p> 	<p>The Vericom is the most versatile and accurate brake meter available. Over the road carriers use the Vericom to measure vehicle braking force and air pressure build up.</p>
<p>Racing</p> 	<p>Racing of any kind. The Vericom can measure acceleration, deceleration and lateral G. It is used by drag racers and circle track racers. It can also be used as a data acquisition system by adding additional sensors.</p>

WARRANTY

The Vericom VC3000 computer is covered by a one year 100% parts and labor warranty for all repairs due to defects in material or workmanship appearing under normal use and service.

January 2005

Vericom Computers, Inc.

14320 James Road – Suite 200 – Rogers, Minnesota 55374

Phone 763.428.1381 Fax 763.428.4856

USA and Canada call toll free 1.800.533.5547

Web site: www.vericomcomputers.com

email: vericom@vericomcomputers.com



Vehicle Sensor Interface (VSI)

Part number 117312

OBDII Input (VC3000DAQ version only)

Use your VC3000DAQ to read real-time sensor data from your OBDII and then upload to your PC. The VC3000DAQ OBDII Interface option operates only on USA-spec OBDII equipped cars. All USA-spec vehicles after 1996 are OBDII compliant. The vehicle will have an OBDII connector under the dash or in another location near the driver's seat.

Vehicles Applicable:

All domestic and imports cars and trucks built since January 1, 1996 have OBDII systems. There are three basic OBDII protocols in use with minor variations on the communication pattern between the OBDII computer and the scanner console or tool. GM cars and light trucks use SAE J1850 Variable Pulse Width Modulation (VPW). Domestic Fords use SAE J1850 Pulse Width Modulation (PWM). Chrysler products and all European and most Asian Imports use ISO 9141 circuitry. The Vericom VSI is compatible with all three applications. Includes 27 EPA required data and manufacturer proprietary codes.

Most popular Sensors and Measurements

VSI

Engine temperature

Fuel Pressure

Manifold Pressure

Engine Speed (RPM)

Vehicle Speed

Ignition Advance

Intake Air Temperature

Air Flow Rate

Throttle Position

VC3000DAQ

Acceleration G-force

Lateral G-force

Speed

Distance

Time

Horsepower

Torque

Gear Ratio

Reaction Time

Six Channel Data Acquisition

This is the ideal Reaction Timer for Therapists working with handicapped or disabled drivers. Take the guesswork out of driver assessment by analyzing the driver's skills using computer technology. This will work at any speed from 1 mph and up. Vericom has been making Vehicle Performance Analyzers for Traffic Accident Investigators since 1984. Our reaction timers are being used by hundreds of Occupational Therapist and Rehabilitation Centers. AAA driving schools also use the Vericom reaction timer.



Perception Reaction Timer

The Vericom VC3000 with perception reaction time (PRT) switch will measure drivers' reaction time, vehicle speed, vehicle stopping distance and G-force. The combination of 4 lights and 4 different responses requires the driver to make a decision before reacting therefore both perception and reaction time can be measured. It will work at any speed from 1 mph and up.

Light indicator and response key

1. Single red light is a command to soft brake.
2. Both red lights are a command to hard brake.
3. Left amber light is a command to make a hard left turn with no braking.
4. Right amber light is a command to make a hard right turn with no braking.

This is a real time dynamic test to be conducted while actually driving a vehicle. Total cost for the Perception Reaction Timer part number 320440 is \$1,093.00

Vericom Computers, Inc.

14320 James Road - Suite 200 - Rogers Minnesota 55374

USA or Canada toll-free 800-533-5547

Phone 763-428-1381 Fax 763-428-4856

Web site: www.vericomcomputers.com Email: vericom@vericomcomputers.com

VERICOM STATIONARY REACTION TIMER

Includes software, steering wheel and pedals

Displays driving scene

Works on any PC with Windows software

Mounts to any desk or table

Save and print test data in a formatted report



- Conduct simple or perception/response reaction time tests.
- Test in an office environment before doing in-vehicle testing.
- Displays the time from an on-screen stimulus to the driver's foot coming off the accelerator.
- Displays the time from driver's foot coming off the accelerator to depressing the brake pedal.
- Displays the time from an on-screen stimulus to the driver's foot depressing the brake pedal.
- Displays the distance traveled during the reaction time.
- Stores data to the computer disk for future reference.
- Prints test results to any printer connected to your computer or network.
- Turn video on or off.
- Pedals are reversible.
- Simple reaction time mode with only hard brake option available.
- Service plan available.
- Client and instructor information logged and printed.
- Several test parameters are adjustable.
- Uses same stimuli as our in-vehicle perception/response timer.

VERICOM COMPUTERS, INC

14320 James Rd
Suite 200
Rogers, MN 55374
Phone: 763-428-1381
Fax: 763-428-4856
E-mail: vericom@vericomcomputers.com
Web: www.vericomcomputers.com

Vericom Computers, Inc.

14320 James Road – Suite 200 – Rogers, Minnesota 55374

USA or Canada toll – free 1-800-533-5547 Phone 763-428-1381 Fax 763-428-4856

Dec 2006, prices are in US Dollars

Friction & Performance Computers				
VC3000DAQ # 330850-DAQ Includes: Six Channel Data Acquisition, Profile Pro Software, service contract, carrying case, wall charger, car charger, large mounting bracket kit	VC3000PC # 320850-PC Includes: Profile Pro Software, service contract, carrying case, wall charger, car charger, large mounting bracket kit	VC3000 Brake Meter # 320430-vac Includes: carrying case, wall charger, car charger, large mounting bracket kit	VC3000 Brake Meter # 320430 Includes: carrying case, wall charger, car charger, small mounting bracket kit	VC3000RFM # 330850-RFM Includes: Six Channel Data Acquisition, Profile Pro Software, Thermo printer, carrying case, wall charger, car charger, large mounting bracket kit
2,975.00	2,231.00	988.00	898.00	2,987.00

Reaction Timers		
Stationary Reaction Timer # 117325	Mobile Reaction Timer # 320440	Elite Mobile Reaction Timer #440850-DAQ
395.00	1,093.00	3,970.00

Software and Service Contracts	
Profile Express #117335 Software for VC3000 Brake Meter	Service contract for Profile express #312 and Response software #311
350.00	150.00

Profile Pro Software and service contract are included in the price for the VC3000DAQ, VC3000PC & VC3000RFM.

Sensors for VC3000DAQ only			Options for VC3000DAQ & VC3000PC		
Part no	Description	Price	Part no	Description	Price
117302	6 Sensor Junction Box	98.00	230106	RPM Option w/1 sensor*	560.00
230115	Brake pedal force sensor	450.00	230126	RPM Option w/2 sensors*	710.00
230105-10	10 G tri axis accelerometer	797.00	Options		
230101-4	4 G Z axis accelerometer	350.00	Available for all units		
117312	Vehicle Sensor Interface (VSI)	350.00	117303	Brake light switch	85.00
230108	Angular rate sensor	720.00	117314	Brake Pedal Switch	85.00
230202-100	Air pressure sensor – 100psi	215.00	117304	Reaction Time switch	125.00
230205-1750	Thermocouple	240.00	117321	Perception-React Time sw	195.00
230209	Infrared Temperature Sensor	836.00	120104	Thermo micro printer	350.00
230107-15	String Potentiometer	350.00			
230100	16 channel DAB	1,250.00			
117308	5V Event Marker	118.00			

Additional accelerometers and sensors are available upon request.

*Choose from coil, inductive or magnetic rpm sensor.

Replacement Accessories					
Part no	Description	Price	Part no	Description	Price
210500	Vacuum cup mtg kit (VC2000)	96.00	119057	110V / 12V charger	24.00
210503	Vacuum cup mtg kit (VC3000)	96.00	119065	90V to 265V charger	36.00
119086	Hard shell carrying case	75.00	120505	Training video	10.00
130505	Locking lever kit for VC3000	25.00	120110	Thermo paper for printer (roll)	4.50

A two day training class is offered for \$2,000.00 (max 24 people) within the continental US.

All prices are in US dollars. Add \$15.00 shipping and handling charge for each VC3000 unit within the contiguous United States.

VC3000DAQ / Standard Reconstructionist Package Part number 410850-DAQ

The package is specially designed to meet the technical needs of the modern day Traffic Crash Reconstructionist. Additional sensors are added to analyze vehicle dynamics and differentiating driver's error from vehicle failure.

Item	Part Number	Description	Qty	Price	Extension
1	330850-DAQ	VC3000DAQ	1	2,975.00	2,975.00
2	117302	6 Sensor Junction Box	1	98.00	98.00
3	117312	VSI (OBDII connector)	1	350.00	350.00
4	230202-100	Pressure sensors (air or fluid)	1	215.00	215.00
5	230115	Brake pedal force sensor	1	450.00	450.00
6	117321	Perception-reaction time switch	1	195.00	195.00
7	119088/	Accessory carrying case	1	75.00	75.00
Total					4,358.00

VC3000DAQ / ComRecon Package Part number 460850-DAQ

The package is specially designed to meet the technical needs of the modern day Traffic Crash Reconstructionist with added sensors for commercial vehicle application

Item	Part Number	Description	Qty	Price	Extension
1	330850-DAQ	VC3000DAQ	1	2,975.00	2,975.00
2	117302	6 Sensor Junction Box	1	98.00	98.00
3	117312	VSI (OBDII connector)	1	350.00	350.00
4	230202-100	Pressure sensors (air)	2	215.00	430.00
5	230115	Brake pedal force sensor	1	450.00	450.00
6	117321	Perception-reaction time switch	1	195.00	195.00
7	117314	Brake Pedal Switch	1	85.00	85.00
8	117401	Glad hand T	1	95.00	95.00
9	119088/	Accessory carrying case	1	75.00	75.00
Total					4,753.00

VC3000DAQ / Advanced Reconstructionist Package Part number 470850-DAQ

The package is specially designed to meet the technical needs of the Advanced Traffic Crash Reconstructionist with added sensors for commercial vehicle application. Additional accelerometers have been added for evaluating injuries resulting from low speed impacts. More sensors are added to analyze vehicle dynamics (including yaw) and differentiating driver's error from vehicle failure.

Item	Part Number	Description	Qty	Price	Extension
1	330850-DAQ	VC3000DAQ	1	2,975.00	2,975.00
2	117302	6 Sensor Junction Box	1	98.00	98.00
3	117312	VSI (OBDII connector)	1	350.00	350.00
4	230202-100	Pressure sensors (air or fluid)	2	215.00	430.00
5	230115	Brake pedal force sensor	1	450.00	450.00
6	117321	Perception-reaction time switch	1	195.00	195.00
7	117314	Brake Pedal Switch	1	85.00	85.00
8	117308	5V Event Marker	1	118.00	118.00
9	117401	Glad hand T	1	95.00	95.00
10	230105-10	3 axis 10 G accelerometer	1	797.00	797.00
11	230108	Angular rate sensor	1	720.00	720.00
12	230209	Infrared Temperature Sensor	1	836.00	836.00
13	119088	Accessory carrying case	1	75.00	75.00
Total					7,224.00

A two day training classes is offered periodically though out the continental US. The typical cost is \$175 per person. For group rates or US law enforcement discounts ask for quotes.