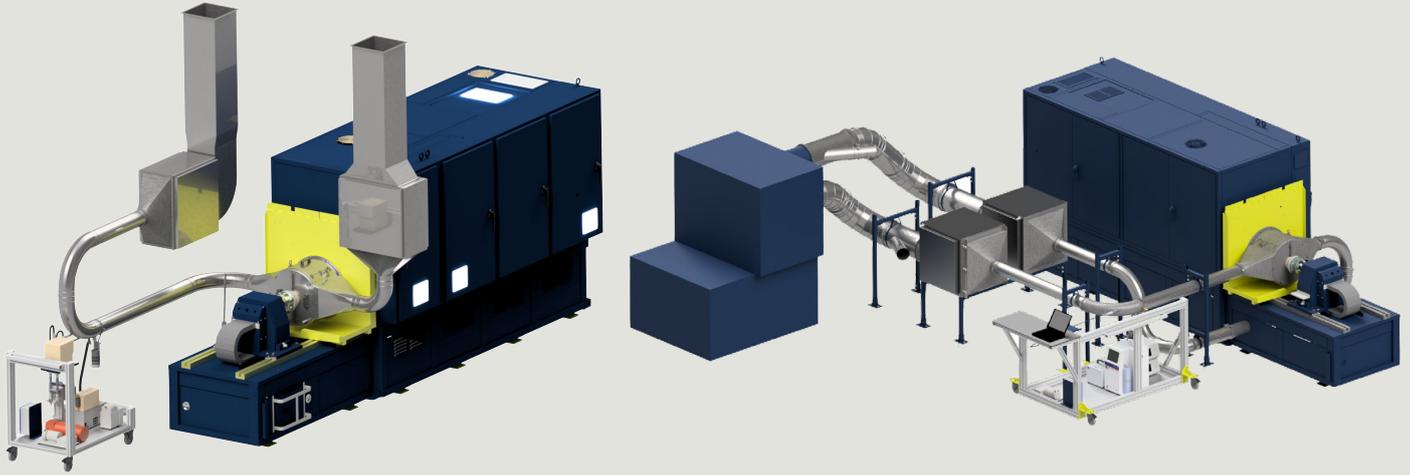


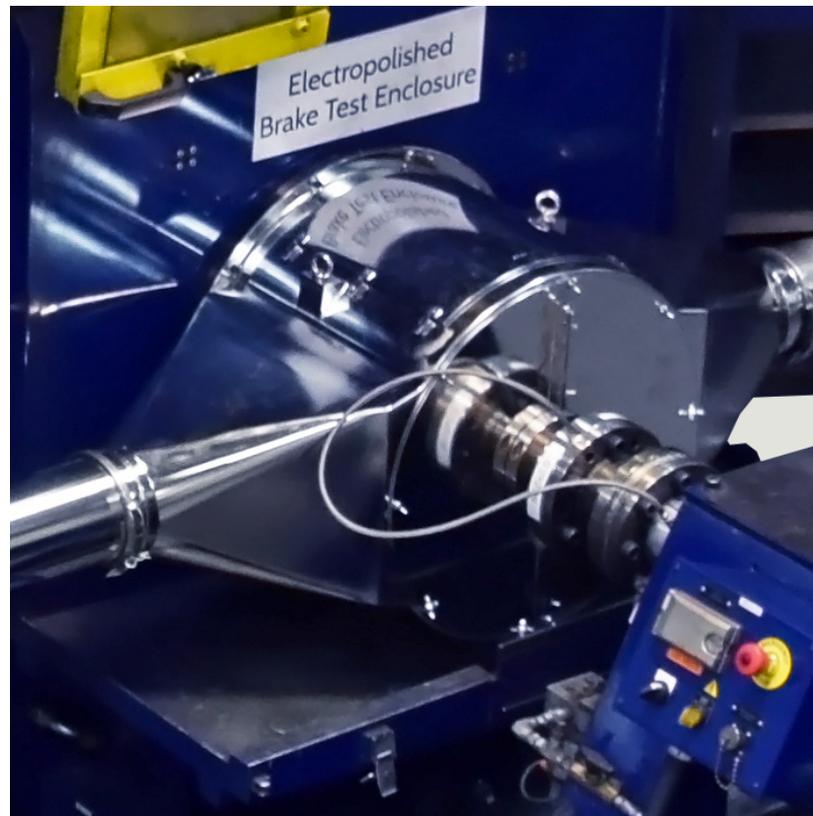


# Model 6330

## Brake Emissions Testing



**LINK**





# Model 6330

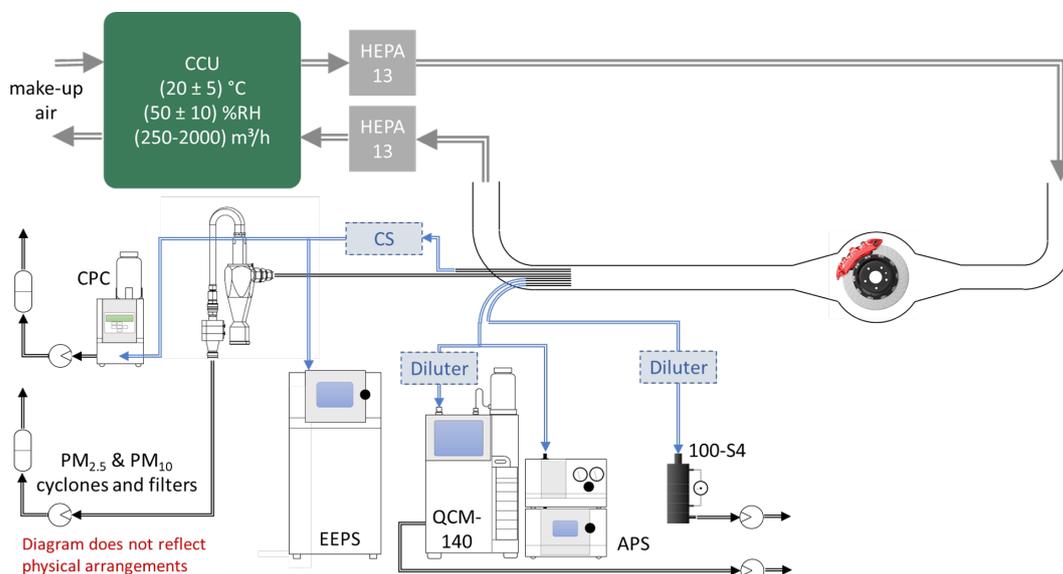
## The New Focus on Brake Emissions

With automotive exhaust emissions declining substantially, government and environmental groups are putting more attention on the possible adverse effects of other emissions sources—notably tires and particulate matter from brakes.

It has become increasingly important to be able to precisely benchmark the emission levels and dynamics of current brake technologies, and to accurately predict how variables such as materials, brake sizes, duty cycles, and vehicle applications can potentially reduce these emissions going forward. For this, you need the best laboratory data: Robust. Repeatable. Reliable.

As the global leader in testing and measurement for more than 80 years, Link Engineering Company has stood at the forefront of developing brake emission methods and testing systems in close collaboration with the industry. LINK designed and performed the laboratory testing for the Brake Pad Partnership, and established the world's first independent ISO 17025-accredited lab for the Better Brake Rules. Today we continue to support protocols and standards for interlaboratory brake-emissions evaluations at U.S. and European facilities.

The result of this unmatched experience and expertise is our Model 6330 Brake Emissions Testing System, which offers the industry's most efficient and accurate measurement of brake particulate matter, incorporating the largest number of international standards and established practices, and yielding the widest array of data from a single test.





## Introducing the LINK M6330

The M6330 is an enclosed, dynamometer-based brake sampling system that lets you replicate a duty cycle from your vehicle and collect samples of particulate matter under tightly-controlled conditions such as air temperature, humidity, brake cooling, and many more. You can then measure a large variety of characteristics like particulate mass, particulate number, particle size distribution and concentration—as well as sample for chemical and toxicology assessments—all in a single setup.

No other laboratory in the world can do this, and no other lab meets CARB, EPA, and ISO standards all at once.

Our unique measurement methodology and design overcome the inherent limitations of other systems, yielding representative, isokinetic samples over the entire range of significant particles. The bottom line is a more efficient process and more accurate results—actionable conclusions you can trust.

The M6330 is available for purchase as a system, or we can perform your testing as a service. Our modular system design allows different levels of instrumentation, from core instruments for  $PM_{2.5}$ ,  $PM_{10}$ , and PN to diluters, catalytic strippers, real time mass measurement, etc. When we perform testing as a service, we provide you all of this data, including weight (with 0.000001 g resolution).

The M6330 system is controlled by our industry leading ProLINK suite of software tools, which lets you analyze your data and create virtually unlimited custom reports through simple menu selections. Using a Binary Large Object (BLOB), 100+ serial channels of particle count, concentration, and size distribution data are automatically collected in real-time into a single ProLINK file, eliminating synchronization problems, and time consuming post processing. Test reports can be viewed in normal Pro-LINK report format, or as VDA 305 EEC/EED and DSA files.

### Experience & Endorsements

- Designed system and executed testing resulting in CA and WA Better Brakes Rules
- Established world's first independent ISO 17025-accredited lab per SME & BMC
- Active support developing laboratory protocols with the UNECE/GRPE/PMP program
- Conduct testing campaigns for large U.S. and German OEs
- LINK is the designated and approved brake emissions/particulate matter lab for CARB, CALTRANS, and the EPA

# Test Procedures

- WLTP-Brake cycle with 303 brake events, 192 km distance traveled
- CARB-Brake cycle based on California vehicle activity
- Duty cycles using 1 hz speed traces
- City traffic simulations
- Brake emissions evaluation matrix as a function of speed, deceleration, temperature and time

# Options

- M6330-PMP with PN, PM2.5, and PM10
- M6330-R&D with all instruments - See spec sheet below
- Fixed system can be outfitted on a LINK M3900 NVH Dynamometer

## Specifications (Including all options)

Temperature	20 °C ± 5 °C
Temperature Control Stability	± 0.5 °C (0.9 °F)
Humidity	50 % Relative Humidity
Humidity Control Stability	± 10 % Relative Humidity
Minimum Airflow (Environmental On)	100 m <sup>3</sup> /h (147 ft <sup>3</sup> /min) variable speed
Maximum Airflow (Environmental Off)	2000 m <sup>3</sup> /h (1177 ft <sup>3</sup> /min) variable speed
Airflow Control Stability	± 5 % Steady State
Aerosol sampling	Isokinetic between 95%-115% per ISO 9096
Minimum particle size range for PMP particle count concentration	Below 2.1 µm
Optional particle size range for particle count concentration	6 nm to 20 µm
Particle size range for PMP particle mass (gravimetric sampling)	PM <sub>1.0</sub> , PM <sub>1.0-2.5</sub> , PM <sub>2.5</sub> , PM <sub>2.5-10</sub> , PM <sub>10</sub> , PM <sub>10-18</sub> , and PM <sub>&gt;18</sub>
Sampling plane position after last disturbance	5-8 diameters per EPA / ISO Standards