



## Road Surface Profiler (RSP)

### Model: TBTPQL Series

### Introduction

Pavement roughness, as the main factor of dynamic loads which from vehicle movement, can expedite deterioration of pavement as well as wear and tear of vehicles. By using RSP, the pavement roughness can be determined as IRI. **TBTPQL-B** is specialized to test IRI.

Besides IRI, RSP with differnt modular can be used to measure other parameters of pavement, such as SMTD/MPD, RUT etc. which our model **TBTPQL-A/C/D** can do.

**TBTPQL** series Road Surface Profiler(RSP) adopts laser sensor and accelerometer combination to measuring the longitudinal profile; It's a real time, continuous measuring device for collecting data of pavement condition. Installed at the front of vehicle, easy installation and operation.

**TBTPQL** Series Road Surface Profiler(RSP) can be equipped together with devices to realize the measurement for road damage such as crack detection(LCMS).

### Different Configures

- ▶ TBTPQL-A: 13pcs laser sensor (single IRI/ single SMTD/RUT)
- ▶ TBTPQL-B: 1pc laser sensor(single IRI)
- ▶ TBTPQL-C: 1pc laser sensor(single IRI/ single SMTD)
- ▶ TBTPQL-D: 2pcs laser sensor(dual IRI/single SMTD)
- ▶ TBTPQL-E: 2pcs laser sensor(dual IRI/dual SMTD)
- ▶ TBTPQL-F: 11pcs laser sensor(dual IRI/dual SMTD/RUT)

Note: SMTD and MPD all available

### Referring Standard :

**ASTM E950    ASTM E1926**  
**ASTM 1845    ASTM 1489**  
**AASHTO R56**

### Features

- ▶ Modular system, easy for maintenance.
- ▶ Real-time data collection for IRI,  $\sigma$ , RN, RQI, SMTD/MPD, RUT, speed etc.
- ▶ Testing at traffic speed enables faster measuring and saving time.
- ▶ Real time graph display.
- ▶ Adopts imported sensor and accelerometer.
- ▶ Cover lane width of 3500mm.
- ▶ Accords to ASTM E950 Class 1 profiling.
- ▶ Adapt to third party analysis software such as ProVal.
- ▶ With built-in GPS , get coordinate in real time.
- ▶ With DMI installed on rear wheel, easy for surveying the distance.
- ▶ Laser sensors can be extended up to 17pcs, or reduce to 7pcs.

### Technical specification

No.	Description	Specification
1	Testing project	IRI, RN, SMTD(MPD)
2	Laser(IRI/RUT)	Riftek (from Republic of Belarus)
	Frequency	9.4kHz
	Ground clearance	375 / 745mm
	Measuring range	±250 / 500mm
	Resolution	< 0.05mm
	Protection level	IP 67
3	Accuracy	< 0.5mm
	SMTD laser	KEYENCE
	Ground clearance	400mm
	Respond frequency	20kHz
	Measuring range	±100mm
	Resolution	0.01mm
4	Protection level	IP 67
	Linearity	±0.05% F.S.
	Communication	Ethernet interface
5	Acceleration sensor	Lance (from USA)
	Measuring range	±10g
	Resolution/Frequency	0.00004g / 0.7 ~ 7700Hz
6	Distance sensor	OMRON
	Pulse count / Protection level	2048pulse / turn / IP67
	Measuring accuracy	±0.5m / km
7	Sampling interval	≥1mm
8	IRI resolution	0.01m / km
9	SMTD resolution	0.01mm
10	SMTD accuracy	0.05mm
11	Wheel track testing range	0 ~ 200mm
12	Wheel track testing resolution (Rut depth Accuracy)	0.1mm
13	Cross section lane width	3500mm

