

# igaro D1

Hub|Shimano DH-3N80 (XT)

	Small lights			GPS		Smartphone & Powerbanks				
	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
<b>R ohm</b>	48.70	9.90	5.20				5.00	4.00	3.00	2.00
<b>Max Eff</b>	0.072	0.165	0.160							

Manufacturer	Model	Version	Test Date		Vdrop	W	Km/h	Eff	Perf
Busch & Müller	E Werk		23 Sep 16						
				L1	4.88	0.49	6.8	0.072	100.0%
				L2	4.68	2.21	14.6	0.152	91.7%
				L3	3.32	2.12	25.3	0.084	52.3%
igaro	D1	NG	23 Sep 16						
				L1	4.92	0.50	10.4	0.048	66.5%
				L2	4.7	2.23	13.5	0.165	100.0%
				L3	4.49	3.88	24.2	0.160	100.0%
Sinewave	Revolution		30 Sep 16						
				L1					
				L2					
				L3					
SuperNova	The Plug	3	14 Oct 16						
				L1					
				L2					
				L3					

Notes

## Efficiency Test

**This test demonstrates the minimum speeds required to satisfy the varying power requirements of different loads. This figure represents efficiency and transfer ability. Performance is this figure compared to the leader.**

Some devices (including Igaro D1) may detect unstable voltage (dynamo pulsing) and prevent turn on until speed is increased. While this will result in a lower rating for low speed in reality the device (I.e smartphone screen) would be rapidly turning on and off. Any load with a Vdrop less than 4.75V is out of USB spec and may cause device power/charging to fail. Some devices (including Supernova The Plug 3) will not permit the voltage to drop below USB spec. Both methods prevent USB software lockup.

**Vdrop** = voltage drop over the resistor

**Km/h** = cycle computer measurement, 700c with standard 32c tyre, minimum speed at which the voltage (wattage) could be sustained

**W** =  $(V_{drop}/R) * V_{drop}$

**Eff** = ratio of wattage vs speed, higher is better

**Perf** = Gain compared to the max leader (Eff/Max Eff)

Resistors are suitably large (wire for very low resistance, ceramic otherwise). Multimeter is TENMA 72-7780 RMS. Speedometer accuracy +/- 0.1km/h.

This data has been compiled in good faith and is accurate to the best of our knowledge (and test equipment).

We welcome feedback: [d1-general@igaro.com](mailto:d1-general@igaro.com)