

Comparison of TSL® Mobile RAIN® RFID UHF Readers

	Wearable 1153	Standard Duty					Heavy Duty				
		1128	2128P	3138	2128L		1166	3166			
											
Read Range	Up to 2 m (6.5 ft)	Up to 5.5 m (18 ft)	Up to 9 m (29.5 ft)	Up to 9 m (29.5 ft)	Up to 15 m (49 ft)* <small>*Orientation dependent</small>		Up to 9 m (29.5 ft)	Up to 9 m (29.5 ft)	Read Range		
Maximum RF Output Power	Up to 26 dBm EIRP (region dependant)	Up to 32 dBm EIRP (region dependant)	Up to 34 dBm EIRP (region dependant)	Up to 34 dBm EIRP (region dependant)	Up to 35 dBm EIRP (region dependant)		Up to 34 dBm EIRP (region dependant)	Up to 34 dBm EIRP (region dependant)	Maximum RF Output Power		
IP Rating	IP54	IP54	IP54	IP54	IP54		IP67	IP67	IP Rating		
Drop Spec	1.2 m* <small>*Multiple drops to concrete: 4 ft / 1.2 m ambient, 3ft / 0.9m across the operating temperature range.</small>	1.2 m* <small>*Multiple drops to concrete: 4 ft / 1.2 m ambient, 3ft / 0.9m across the operating temperature range.</small>	1.2 m* <small>*Multiple drops to concrete: 4 ft / 1.2 m ambient, 3ft / 0.9m across the operating temperature range.</small>	1.2 m* <small>*Multiple drops to concrete: 4 ft / 1.2 m ambient, 3ft / 0.9m across the operating temperature range.</small>	1.2 m* <small>*Multiple drops to concrete: 4 ft / 1.2 m ambient, 3ft / 0.9m across the operating temperature range.</small>		1.8 m* <small>*Multiple drops to concrete: 1.8 m ambient.</small>	1.8 m* <small>*Multiple drops to concrete: 1.8 m ambient.</small>	Drop Spec		
Optional 2D barcode imager	Yes	Yes	Yes	Yes	No		Yes	Yes	Optional 2D barcode imager		
CommandScan™	No	No	No	Includes CommandScan - instantly configure the reader by scanning special barcodes	No		No	Includes CommandScan - instantly configure the reader by scanning special barcodes	CommandScan™		
Security Features	Reader Static Authentication	Reader Static Authentication	Reader Static Authentication	HID OMINKEY™ Advanced security features including Mutual and Dynamic Authentication	Reader Static Authentication		Reader Static Authentication	Reader Static Authentication	Security Features		
Bluetooth® version	Bluetooth 2.1	Bluetooth 2.1	Bluetooth 4.2 <small>Supports Classic, BLE & IAP2</small>	Bluetooth 5.1* <small>*v5.1 compatible, v4.2 compliant Supports Classic, BLE & IAP2</small>	Bluetooth 4.2 <small>Supports Classic, BLE & IAP2</small>		Bluetooth 2.1	Bluetooth 5.1* <small>*v5.1 compatible, v4.2 compliant Supports Classic, BLE & IAP2</small>	Bluetooth® version		
Apple Mfi certified	Yes	Yes	Yes	Yes (pending)	Yes		Yes	Yes	Apple Mfi certified		
Internal Storage	Up to 32 GB* <small>*Via Micro SD card (not supplied)</small>	Up to 32 GB* <small>*Via Micro SD card (not supplied)</small>	Up to 32 GB* <small>*Via Micro SD card (not supplied)</small>	Up to 256 GB* <small>*Via Micro SD card (not supplied)</small>	16 GB* <small>*For units manufactured in August 2020 onwards. Units manufactured before this date will be 8 GB.</small>		16 GB* <small>*For units manufactured in August 2020 onwards. Units manufactured before this date will be 4 or 8 GB.</small>	32 GB	Internal Storage		
No. of tags that can be stored on an SD card (Batch Data Mode)	Up to 500 million tags* <small>*Via Micro SD card (not supplied)</small>	Up to 500 million tags* <small>*Via Micro SD card (not supplied)</small>	Up to 500 million tags* <small>*Via Micro SD card (not supplied)</small>	Up to 4 billion tags* <small>*Via Micro SD card (not supplied)</small>	Up to 250 million tags* <small>*For units manufactured in August 2020 onwards.</small>		Up to 250 million tags* <small>*For units manufactured in August 2020 onwards.</small>	Up to 500 million tags	No. of tags that can be stored on an SD card (Batch Data Mode)		
Tag de-duplication (removes duplication of tag reads)	Software Based	Software Based	Hardware based tag de-duplication	Hardware based tag de-duplication <small>10X more compared to 2nd-gen (21x0) readers - 500,000 compared to 50,000</small>	Hardware based tag de-duplication		Software Based	Hardware based tag de-duplication <small>10X more compared to 2nd-gen (21x0) readers - 500,000 compared to 50,000</small>	Tag de-duplication (removes duplication of tag reads)		
On-board accelerometer	No	No	Yes	Yes	Yes		No	No	On-board accelerometer		
Mounting options for a host device	Tablet Mount 	Slide-on Mounts* 	ePop-Loq® Mounts 	ePop-Loq® Mounts <small>New, Faster ePop-Loq mode to accommodate higher tag throughput</small> 	ePop-Loq® Mounts 		Pop-Loq® Mounts 	ePop-Loq® Mounts <small>New, Faster ePop-Loq mode to accommodate higher tag throughput</small> 	Mounting options for a host device		
Reader Model	1153	1128	2128P	3138	2128L		1166	3166	Reader Model		
Docking Options		 Docking Cradle* Order 1128-CRD-02-KIT <small>*Slide-on Mounts must be removed from the 1128 in order to use the Docking Cradle</small>	 Docking Cradle Order 2128-CRD-03-KIT	 Docking Cradle <small>(for use with 8-way Power Pins option)</small> Order 3138-CRD-01-KIT	 Docking Cradle Order 2128-CRD-02-KIT		 Docking Cradle Order 1166-CRD-01-KIT	 Docking Cradle Order 1166-CRD-01-KIT	Docking Options		
Battery	 L Battery	 XL Battery  Power Handle <small>(order: 2102-PH-Y)</small>	 XL Battery  Power Handle <small>(order: 2102-PH-Y)</small>	 Power Handle included <small>Removable. Choice of USB-C connector, or 8-way Power Pins for use with docking cradle.</small>	 Power Handle included <small>Built-in (non-removable)</small>		 High Capacity Battery	 High Capacity Battery	Battery		
Minimum operating time ¹	Light use ² : 10 hrs Moderate use ³ : 6.5 hrs Heavy use ⁴ : 2.5 hrs	6 hrs Light use ² 3.5 hrs Moderate use ³ 1.5 hrs Heavy use ⁴ 16 hrs 9 hrs 4.5 hrs	8.5 hrs Light use ² 5 hrs Moderate use ³ 2.5 hrs Heavy use ⁴ 22.5 hrs 13 hrs 7.5 hrs	Light use ² : 22.5 hrs Moderate use ³ : 13 hrs Heavy use ⁴ : 7.5 hrs <small>(preliminary estimate)</small>	Light use ² : 22.5 hrs Moderate use ³ : 15.5 hrs Heavy use ⁴ : 7 hrs		Light use ² : 25 hrs Moderate use ³ : 16.5 hrs Heavy use ⁴ : 8 hrs	Light use ² : 33.5 hrs Moderate use ³ : 21.5 hrs Heavy use ⁴ : 12 hrs ⁵	Minimum operating time ¹		
Tag Reads per single battery charge	1 million	1 million	1 million 2.3 million	25.2 million <small>(preliminary estimate)</small>	2.3 million		2.6 million	4.5 million	Tag Reads per single battery charge		
Charge Time	2 hrs	2.5 hrs	2.5 hrs 5 hrs	3.3 hrs <small>(using 20W USB-C PD charger)</small>	5 hrs		2.5 hrs	2.5 hrs	Charge Time		
Keyboard Support (in HID Mode)	US HID Keyboard Support	US HID Keyboard Support	International HID Keyboard Support	International HID Keyboard Support	International HID Keyboard Support* <small>*Enquire when ordering</small>		US HID Keyboard Support	International HID Keyboard Support	Keyboard Support (in HID Mode)		
Country Certifications	Albania Andorra Austria Belgium Bosnia & Herzegovina Brazil (Licensed via ACURA) Bulgaria Canada Croatia Cyprus Czech Republic Denmark Ecuador El Salvador Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required) Germany Greece Greenland Guadeloupe Guam Guatemala Guernsey Hungary Iceland India Ireland Italy Jersey Kazakhstan Latvia Liechtenstein Lithuania Luxembourg	Macedonia Malta Martinique Monaco Montenegro Netherlands Northern Mariana Islands Norway Poland Portugal Puerto Rico Romania Slovakia Slovenia Switzerland Thailand (Licence Required) United Kingdom United States of America (USA)	Albania Andorra Austria Australia Bangladesh Belgium Bosnia & Herzegovina Brazil (Licensed via ACURA) Canada Croatia Cyprus Czech Republic Denmark Ecuador El Salvador Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required) Germany Greece Greenland Guadeloupe Guam Guatemala Guernsey Hungary Iceland India Ireland Italy Jersey Latvia Liechtenstein Lithuania Luxembourg	Macedonia Malta Martinique Monaco Montenegro Netherlands Northern Mariana Islands Norway Poland Portugal Puerto Rico Romania Slovakia Slovenia Spain Sweden Switzerland United Kingdom United States of America (USA)	Albania Andorra Austria Australia Belgium Bosnia & Herzegovina Brazil (Licensed via ACURA) Canada Croatia Cyprus Czech Republic Denmark Ecuador El Salvador Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required) Germany Greece Greenland Guadeloupe Guam Guatemala Guernsey Hungary Iceland India Ireland Italy Jersey Latvia Liechtenstein Lithuania Luxembourg Macedonia Malta Martinique Monaco	Martinique Monaco Montenegro Netherlands Northern Mariana Islands Norway Poland Portugal Puerto Rico Romania Slovakia Slovenia Spain Sweden Switzerland United Kingdom United States of America (USA)	Albania Andorra Austria Belgium Bosnia & Herzegovina Brazil (Licensed via ACURA) Bulgaria Canada Croatia Cyprus Czech Republic Denmark Ecuador El Salvador Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required) Germany Greece Greenland Guadeloupe Guam Guatemala Guernsey Hungary Iceland India Ireland Italy Jersey Kazakhstan Latvia	Liechtenstein Lithuania Luxembourg Malta Martinique Monaco Montenegro Netherlands Northern Mariana Islands Norway Poland Portugal Puerto Rico Romania Slovakia Slovenia Spain Sweden Switzerland Thailand (Licence Required) United Kingdom United States of America (USA)	Albania Andorra Austria Australia Bangladesh Belgium Bosnia & Herzegovina Brazil (Licensed via ACURA) Bulgaria Canada Croatia Cyprus Czech Republic Denmark Ecuador El Salvador Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required) Germany Greece Greenland Guadeloupe Guam Guatemala Guernsey Hungary Iceland India Ireland Italy Jersey Kazakhstan Latvia Liechtenstein Lithuania Luxembourg Macedonia	Malta Martinique Monaco Montenegro Netherlands Northern Mariana Islands Norway Poland Portugal Puerto Rico Romania Slovakia Slovenia Spain Sweden Switzerland Saudi Arabia Slovenia Spain Portugal Qatar Romania Saudi Arabia Slovakia Slovenia Spain Sweden Switzerland United Kingdom United States of America (USA)	Country Certifications
	For other regions, please contact enquiries@tsl.com	For other regions, please contact enquiries@tsl.com	For other regions, please contact enquiries@tsl.com	For other regions, please contact enquiries@tsl.com	For other regions, please contact enquiries@tsl.com		For other regions, please contact enquiries@tsl.com	For other regions, please contact enquiries@tsl.com			
	1153 Wearable	1128	2128P	3138	2128L		1166	3166			
		Standard Duty						Heavy Duty			

¹Figures are based on new units that have been stored, charged and operated within the Environmental Specifications stated on the Reader datasheet. Units stored over 3 months must be recharged every 3 months. Number of transponders in the environment affects minimum operating time.
²Light Use: Continuous RFID inventories for 20% of every 120s.
³Moderate Use: Continuous RFID inventories for 10% of every 30s.
⁴Heavy Use: Continuous RFID inventories for 5% of every 60s.
⁵When operating in the "Eco" battery saver mode.