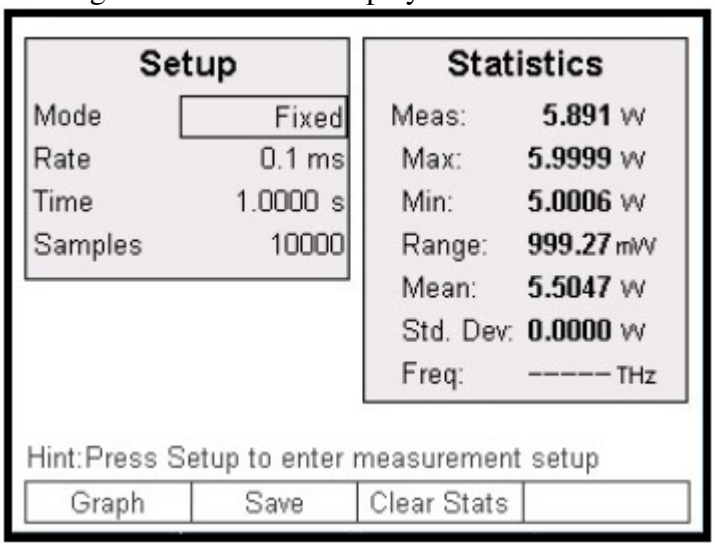
19xx_29xx Statistics Screen

One of the powerful features of the 19xx/29xx Newport power meters is the ability to collect data and store it on a flash drive. This enables easy transfer of data to an external computer for analysis. This feature can be accessed through the Setup menu on the 19xx/29xx power meter. An image of the screen is displayed below:



This technical note provides an interpretation of the Rate and Time setting on the statistics screen.

Interpretation of Rate in the Statistics Screen

Rate is the data store time interval. The default for the rate parameter is 0.1 ms. The parameter represents the interval in milliseconds for storing one measurement in the data buffer. Rate in the Setup menu is not to be confused with the measurement rate.

The Rate setting in the Setup menu can be interpreted as follows:
0.1ms implies that every measurement will be saved in the data store buffer
0.2ms implies that every other measurement will be saved in the data store buffer
1.0ms implies that every 10th measurement will be saved in the data store buffer and so forth.

CW Continuous

The measurement rate is 10 kHz by default for photodetectors. The measurement rate is 1 kHz by default for thermopiles. This is the fastest measurement rate that the meter is capable of performing. The measurement rate cannot be changed. Adjusting the Rate parameter while in CW Continuous mode will adjust the rate at which measurements are stored in the data buffer. The meter will continue to take measurements at the default rate regardless of the Rate setting.

Pk-Pk Continuous

The measurement rate is 1 Hz by default. In the Pk-Pk Continuous mode or in the Pulse Continuous mode the measurement rate can be changed by sending the TIMEOUT[1] command. Timeout is 1 second by default.

CW Integrate

The measurement rate is 1 kHz by default.

Pulse Continuous

The measurement rate is determined by the incoming pulsed laser repetition rate. The data storage rate can be adjusted as described for CW Continuous mode.

Interpretation of Time in the Statistics Screen

The Time value you see from the statistics screen is the actual representation of data storage time only if you are in CW Continuous mode.

Rate (ms)	PM:DS:INT[2] (ms)	CW Continuous Photodiode (ms)	CW Continuous Thermopile (ms)	Pulse Continuous (ms)	Pk-Pk Continuous (ms)
0.1	1	0.1	1.0	1/rep rate	1*timeout
0.2	2	0.2	2.0	2/rep rate	2*timeout
0.3	3	0.3	3.0	3/rep rate	3*timeout

Table 1: Correlation between Rate setting on power meter display and data storage time

[1] PM:MEAS:TIMEOUT: The parameter <value> is of type <number> that is an integer. The parameter represents the measurement timeout period. These measurements are updated once every timeout period .

[2] PM:DS:INTerval: The parameter <interval> is of type <number> that is an integer. The parameter represents the interval in milliseconds for storing one measurement in the data buffer.