



# Cross Reference for Models 3196, 3197 and 3169-20

Model	HIOKI 3196	HIOKI 3197	HIOKI 3169
			
<b>INPUT</b>			
Frequency range	42.5 to 69Hz 360 to 440Hz	45 to 66Hz	45 to 66Hz
<b>Voltage</b>			
Channels	4 (CH4: AC/DC)	3	4
Ranges	Up to 600V	Up to 600V	Up to 600V 0.3%+0.2%f.s
Basic accuracy	0.2%+0.1%f.s.	0.3%+0.2%f.s	0.2%+0.1%f.s.
<b>Current (Clamp on input)</b>			
Channels	4	3(neutral calculated)	4
Ranges	Up to 5000A	Up to 5000A	Up to 5000A
Basic accuracy	0.2%+0.1%f.s. + Clamp	0.3%+0.2%f.s. + Clamp	0.2%+0.1%f.s. + Clamp
<b>Sampling</b>			
RMS	PLL (256 points/cycle)	10.24kHz	PLL (128 points/cycle)
Harmonic	2048 points per 10/12 cycles	2048 points per 10/12 cycles	128 points/cycle
Transient	2MHz	peak detector	×
<b>TIME PLOT</b>			
Interval	1s to 1h	Auto (1s to 1h), 1min to 1h	1 cycle to 1h
Recording values	MAX/MIN/AVE	MAX/MIN/AVE	MAX/MIN/AVE
Graph display	○	○	×
<b>Parameters</b>			
Voltage (1/2 sliding 1 cycle)	○	○	×
Frequency	○	○	○
Voltage / Current	○	○	○
Waveform peak (Voltage / Current)	○	○	×
Power (Active / Reactive / Apparent)	○	○	○
Power factor	○	○	○(Power factor only)
Displacement power factor	○	○	○(Power factor only)
Energy (Active / Reactive)	×	○	○
Demand (Active / Reactive)	×	○	○
K factor	○	○	×
THD (Voltage / Current)	○	△ (voltage only)	○
Unbalance factor (Voltage/ Current)	○	△ (voltage only)	×
Flicker	○ (ΔV10 or Pst/Plt)	×	×
Harmonic (up to 50th) (Voltage / Current / Power)	○	×	○ (up to 40th)
Phase angle (up to 50th)	○	×	○ (up to 40th)
Inter-harmonic (up to 49.5th) (Voltage / Current)	○	×	×
<b>MEMORY</b>			
Internal	13MB	4MB (10 years backup)	1MB
External	PC card (up to 512MB)	×	PC card (up to 512MB)
Recording	Data (binary/text), BMP	Data (binary), BMP	Data (binary/CSV)
<b>INTERFACE</b>			
Data download	LAN, Modem	USB2.0	RS-232C
Remote control	LAN, Modem	USB2.0	RS-232C
Modem	RS-232C	×	RS-232C
External printer	RS-232C	×	RS-232C