

Detectors

Agilent 85037 series precision detectors (AC/DC)

The 85037 series precision detectors are designed specifically for operation with the Agilent 8757D scalar network analyzer and are not compatible with the 8757A/E, 8756, or 8755 scalar network analyzers. These detectors may be used in either AC or DC detection modes. For improved power measurement accuracy versus frequency, each 85037 series precision detector includes detector specific frequency response data, stored in an internal EEPROM, which is automatically read by the 8757D. When used in conjunction with the 8757D's internal power calibrator (Option 002), these detectors provide the maximum absolute power measurement accuracy.



Precision Detector Summary, Agilent 85037 Series¹ For use with the 8757D in either AC or DC detection modes

Model	Frequency range	Connector type	Dynamic range	Frequency	Return loss	Frequency response ³
85037A	10 MHz to 18 GHz	Type-N (m) 7 mm ²	AC mode +20 to -55 dBm	0.01 to 0.04 GHz	10 dB	±0.35 dB
			DC mode +20 to -50 dBm	0.04 to 18 GHz	20 dB	±0.18 dB
85037B	10 MHz to 26.5 GHz	3.5 mm (m)	AC mode +20 to -55 dBm	0.01 to 0.04 GHz	10 dB	±0.35 dB
			DC mode +20 to -50 dBm	0.04 to 18 GHz	20 dB	±0.18 dB
				18 to 26.5 GHz	18 dB	±0.22 dB

Model	Power (50 MHz)	Dynamic accuracy ^{4,5}		Absolute accuracy ^{4,6}	
		Corrected	Default	Corrected	Default
85037A/B	20 dBm	±0.25 dB	±0.40 dB	±0.25 dB	±0.40 dB
	10 dBm	±0.11 dB	±0.40 dB	±0.11 dB	±0.40 dB
	-30 dBm	±0.11 dB	±0.40 dB	±0.11 dB	±0.40 dB
	-40 dBm	±0.40 dB	±0.80 dB	±0.40 dB	±0.80 dB
	-50 dBm	±0.85 dB	±1.30 dB	±0.85 dB	±1.30 dB
	-55 dBm	±0.85 dB	±1.30 dB	—	—

Temperature coefficient of linearity: 0.01 dB/°C temperature change after calibration

- The 85037A/B specifications are only applicable when used with the 8757D scalar network analyzer.
- Option 001 changes to 7 mm connector.
- 10 dBm, 25 ±5°C

Agilent 85025 and 85026 series detectors (AC/DC)

The 85025 and 85026 series detectors are designed specifically for operation with the Agilent 8757 scalar network analyzer and are not compatible with either the 8756 or the 8755. The 85025/26 detectors may be used in either AC or DC detection modes.

General information—coaxial detectors

Impedance: 50 ohms nominal

Maximum input power: +20 dBm (100 mW)

Maximum input voltage: 10 VDC

Dimensions: Cable length is 1.22 m (48 in.)

Weight: Net 0.24 kg (0.5 lb), Shipping 1.0 kg (2.2 lb)

Detector adapters

The Agilent 85025C detector adapters match the scalar analyzer display to most standard crystal, silicon, and gallium arsenide detectors. This enables the user to operate up to 110 GHz with the Agilent 8757. The 85025C detector adapters are designed for use with the 8757 only, and can operate in either AC or DC detection modes.

Maximum measurable input: ±3 V peak

Maximum allowable input: ±10 V peak

Connector: SMA (m)

- The corrected specifications apply after a calibration via the 8757D Option 002 internal power calibrator. The default specifications apply when the calibrator is not used. Power calibrator uncertainty is included in the 85037A/B corrected specifications.
- Dynamic accuracy refers to measurement accuracy as power varies (in dB) from a 0 dBm reference. 25 ±5°C. 50 MHz, calibration and measurement at the same temperature.
- DC mode. 25 ±5°C, calibration and measurement at the same temperature.

Coaxial Detector Summary, Agilent 85025 Series
For use with the 8757 in either AC or DC detection modes

Model	Frequency range	Connector type	Dynamic range	Frequency	Return loss	Frequency response ²	Power (50 MHz)	Dynamic accuracy ³	Absolute accuracy ⁴
85025A ⁵	10 MHz to 18 GHz	Type-N (m)	AC mode	0.01 to 0.04 GHz	10 dB	±0.8 dB	16 dBm	±0.8 dB	±0.8 dB
			+16 to -55 dBm	0.04 to 4 GHz	20 dB	±0.5 dB	6 dBm	±0.4 dB	±0.4 dB
		7 mm ¹	DC mode	4 to 18 GHz	17 dB	±0.5 dB	-35 dBm	±0.4 dB	±0.4 dB
			+16 to -50 dBm				-50 dBm	±1.3 dB	±1.3 dB
						-55 dBm	±1.6 dB		
85025B ⁵	10 MHz to 26.5 GHz	3.5 mm (m)	AC mode	0.01 to 0.04 GHz	10 dB	±0.8 dB	16 dBm	±0.8 dB	±0.8 dB
			+16 to -55 dBm	0.04 to 4 GHz	20 dB	±0.5 dB	6 dBm	±0.4 dB	±0.4 dB
			DC mode	4 to 18 GHz	17 dB	±0.5 dB	-35 dBm	±0.4 dB	±0.4 dB
			+16 to -50 dBm	18 to 26.5 GHz	12 dB	±2.0 dB	-50 dBm	±1.3 dB	±1.3 dB
						-55 dBm	±1.6 dB		
85025D ⁵	10 MHz to 50 GHz	2.4 mm (m)	AC mode	0.01 to 0.1 GHz	10 dB	±0.8 dB	16 dBm	±1.0 dB	±1.0 dB
			+16 to -55 dBm	0.1 to 20 GHz	20 dB	±0.5 dB	6 dBm	±0.4 dB	±0.4 dB
			DC mode	20 to 26.5 GHz	20 dB	±1.0 dB	-35 dBm	±0.4 dB	±0.4 dB
			+16 to -50 dBm	26.5 to 40 GHz	15 dB	±2.5 dB	-50 dBm	±1.3 dB	±1.3 dB
				40 to 50 GHz	9 dB	±3.0 dB	-55 dBm	±1.6 dB	
85025E ⁵	10 MHz to 26.5 GHz	3.5 mm (m)	AC mode	0.01 to 0.1 GHz	10 dB	±0.8 dB	16 dBm	±1.0 dB	±1.0 dB
			+16 to -55 dBm	0.1 to 18 GHz	25 dB	±0.5 dB	6 dBm	±0.4 dB	±0.4 dB
			DC mode	18 to 25 GHz	25 dB	±0.5 dB	-35 dBm	±0.4 dB	±0.4 dB
			+16 to -50 dBm	25 to 26.5 GHz	23 dB	±1.4 dB	-50 dBm	±1.3 dB	±1.3 dB
						-55 dBm	±1.6 dB		

Waveguide Detectors and Detector Adapters Summary
For use with the 8757 only in either AC or DC detection modes

Model	Frequency range	Connector type	Dynamic range	Return loss	Frequency response	Dynamic accuracy
R85026A ⁵	26.5 to 40 GHz	WR-28	+10 to -50 dBm (AC mode) +10 to -45 dBm (DC mode)	12 dB	±1.5 dB	±(0.3 dB + 0.03 dB/dB)
Q85026A ⁵	33 to 50 GHz	WR-22	+10 to -50 dBm (AC mode) +10 to -45 dBm (DC mode)	12 dB	±2.0 dB	±(0.3 dB + 0.03 dB/dB)
U85026A ⁵	40 to 60 GHz	WR-19	+10 to -50 dBm (AC mode) +10 to -45 dBm (DC mode)	12 dB	±2.0 dB	±(0.3 dB + 0.03 dB/dB)
85025C Opt. K57 ⁷	50 to 75 GHz	WR-15	+10 to -45 dBm (typical)	9.5 dB (typical)		
85025C Opt. K71 ⁷	75 to 110 GHz	WR-10	+10 to -45 dBm (typical)	9.5 dB (typical)		
85025C ⁵	⁶	SMA (m)	⁶	⁶	⁶	⁶

1. Option 001 changes to 7 mm connector.

2. -10 dBm, 25 ±5°C

3. Dynamic accuracy refers to measurement accuracy as power varies (in dB) from a 0 dBm reference. 25 ±5°C, 50 MHz.

4. DC mode, 25 ±5°C.

5. The 85025 and 85026 series detectors and the 85025C detector adapter require 8757A firmware revision 2.0 or higher.

6. Depends on the detector.

7. Must be used with the 85025C detector adapter.