Specifications and Regulatory Information

This section lists specifications and regulatory information of the Agilent 86060C-series lightwave switches. Specifications apply over the temperature range +0°C to +55°C (unless otherwise noted). All specifications apply after the instrument's temperature has been stabilized after 120 minutes of continuous operation.

Table 1-4 on page 1-8 lists specification, *characteristics*, and nominal values. The distinction between these terms is described as follows:

Specifications Specifications describe warranted performance.

Characteristics *Characteristics* provide useful information by giving functional, but nonwarranted, performance parameters. *Characteristics are printed in italics.*

Nominal values Nominal value indicates the expected, but not warranted, value of the parameter.

Calibration cycle Agilent Technologies warrants instrument specifications over the recommended calibration interval. To maintain specifications, periodic recalibrations are necessary. We recommend that the Agilent 86060C-series switches be calibrated at an Agilent Technologies service facility every 24 months.

CAUTION Improper connector care, cleaning, or use of mismatched cable connectors can invalidate the published specifications and damage connectors. Clean all cables before applying to any connector. Repair of damaged connectors due to improper use is not covered under warranty. Refer to "Cleaning Connections for Accurate Measurements" on page 1-12 for proper cleaning procedures.

Table 1-4. Optical Interface Specifications and Characteristics

Insertion Loss[a]	
Single-mode switches	1.0 dB *(0.7 dB)*
Multi-mode switches	0.8 dB *(0.6 dB)*
Insertion Loss Stability[b]	±0.03 dB *(±0.025)*
Repeatability [c]	
Sequential switching	±0.008 dB *(±0.005)*
Random switching	±0.025 dB *(±0.01)*
Optical Return Loss[d]	
Single-mode	58 dB *(62 dB)*
Multimode	20 dB *(25 dB)*
Polarization Dependent Loss[e]	0.05 dB *(0.02 dB)*
Isolation	–80 dB *(–100 dB)*
Typical Switching Life	10 million cycles, minimum
Switching Time	
Between adjacent channels	330 msec
Each additional channel	50 msec

a. Insertion loss does not include connectors. Include an additional 0.5 dB (*0.25 dB characteristic*) for each connector.
b. Drift of any channel relative to one assigned reference channel at ±3°C deviation of ambient temperature over 7 day period.
c. Repeatability measured after four (4) hours warm-up and with a one (1) second pause between movements.
d. Excludes external pigtail backscatter and connector reflections.
e. Polarization dependent loss only applies to single-mode switches and is measured at 1550 nm.

Table 1-5. Switching Time Sample (msec)

Switch Size[a]	Switch	Starting Channel to Adjacent Channels	Plus Additional Time/Channel	Maximum[b] Switching Time
1×4	Agilent 86060C, HP 86061C	290	40	370
1×8	Agilent 86060C, HP 86061C	290	40	530
1×56	HP 86062C	258	7.5	663
1×100	HP 86062C	258	7.5	993

a. Note that the switch mechanism used for channel count greater than 48 is different, hence switching time.
b. Switching time = (switching between starting and adjacent channel) + (additional time/channel) × remaining channel increments to reach last channel.

Table 1-6. General Specifications (1 of 2)

OPTICAL CONNECTORS[a,b,c]	
Option 012	FC/PC connectors
Option 014	ST connectors
Option 017	SC connectors
GENERAL SPECIFICATIONS	
Temperature Range Operating Storage	 +0°C to +55°C –40°C to +70°C
Humidity Operating Storage	 Maximum relative humidity 95% for temperatures up to 40°C (non-condensing) Maximum relative humidity less than 90% at 65°C
Altitude	Altitude up to 15,000 feet (4,572 meters).
EMI Compatibility	Conducted and radiated emissions meet the requirements of CISPR Publication 11 and EN 55011 Group 1, Class A.
Power Requirements	100/115/230/240 V *(range 90 to 254 Vac)*, 50/60 Hz (*range 47 to 63 Hz*)
Power Consumption	*Up to 80 VA*
Installation Category	Category II per I.E.C. 1010
Pollution Degree	Degree 2 per I.E.C. 664
Usage	For indoor use.
Enclosure Protection	IP 2 0, according to IEC 529

Table 1-6. General Specifications (2 of 2)

Weight (dependent on # of channels)	
Agilent 86060C	3.76 kg to 4.1 kg (8.4 lb to 9.2 lb)
HP 86061C	4.0 kg to 6.18 kg (8.8 lb to 13.6 lb)
HP 86062C	7.72 kg to 13.74 kg (17.25 lb to 30.7 lb)
Dimensions (H × W × D) [d]	
Agilent 86060C	132.6 × 213 × 345.4 mm (5.25 × 8.39 × 14 in)
HP 86061C	177 × 213 × 345.4 mm (7 × 8.39 × 14 in)
HP 86062C	177 × 425 × 345.4 mm (7 × 16.75 × 14 in)

a. All Agilent 86060C-series lightwave switches must specify one of the following options, except when specifying Option 3xx.
b. Unlike most Agilent Technologies lightwave instruments, connector types are not interchangeable.
c. Other connector types are available upon request.
d. Feet add 12.5 mm to the height of the instrument.

Regulatory Information

This instrument is in conformance with the German Regulation on Noise Declaration for Machines (Laermangabe nach der Maschinenlaermrerordnung –3.GSGV Deutschland).

Notice for Germany: Noise Declaration

Acoustic Noise Emission	Geraeuschemission
LpA 70 dB	LpA 70 dB
Operator position	am Arbeitsplatz
Normal position	normaler Betrieb
per ISO 7779	nach DIN 45635 t.19