

1997 Housing Characteristics Tables

Air Conditioning Tables

(Percent of U.S. Households; 24 pages, 81 kb)

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These data are from the 1997 Residential Energy Consumption Survey (RECS) which provides information on the use of energy in residential housing units in the United States. The RECS is a national statistical survey that collects data for occupied primary housing units. RECS was first conducted in 1978; the sixth and most recent survey was conducted in 1997 RECS. The data were collected from a sample of 5,900 housing units statistically selected to represent the 101.5 million units in the United States. The 1997 data are available for the four Census regions, the nine Census divisions, and for the four most populous States--California, Florida, New York, and Texas.

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World Wide Web: <http://www.eia.doe.gov/emeu/consumption>

**Table HC4-1b. Air Conditioning by Climate Zone,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total	Climate Zone ¹					RSE Row Factors
		Fewer than 2,000 CDD and --				2,000 CDD or More and Fewer than 4,000 HDD	
		More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.5	1.9	1.0	0.9	1.2	0.9	
Total Households With							
Air-Conditioning	100.0	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	Q	Q	39.8
Room Air Conditioners Not Used ..	1.0	Q	2.0	Q	Q	Q	29.2
Households Using Electric Air-Conditioning²							
Air-Conditioning ²	98.7	98.6	98.0	99.1	98.7	99.1	NE
Type of Electric Air-Conditioning Used							
Central Air-Conditioning ³	64.5	54.8	56.6	58.2	69.0	77.5	4.0
Without a Heat Pump	50.2	52.1	52.8	42.0	47.1	56.3	6.7
With a Heat Pump	14.4	2.6	3.8	16.2	21.9	21.3	18.3
Room Air-Conditioning	34.2	43.8	41.4	41.0	29.7	21.6	7.2
1 Unit	20.2	33.1	26.7	20.6	20.6	10.2	8.7
2 Units	9.8	9.5	10.6	14.2	7.0	7.0	12.4
3 or More Units	4.1	Q	4.1	6.1	2.0	4.4	19.7
Number of Rooms Air-Conditioned in Summer 1997							
One or Two	17.7	20.3	25.0	20.3	14.0	10.1	9.8
Three	11.2	10.1	10.5	10.2	11.5	12.7	11.1
Four	15.7	14.0	14.9	17.8	15.8	15.0	11.2
Five or More	54.2	54.1	47.7	50.9	57.4	61.2	4.9
Percentage of Rooms Air-Conditioned							
100%	68.3	58.2	59.2	64.3	74.8	79.2	3.2
50% to 99%	15.5	21.4	16.4	17.6	12.1	13.4	9.4
25% to 49%	9.5	12.3	12.2	11.6	9.0	4.5	13.2
1% to 24%	5.4	6.6	10.2	5.6	2.8	2.1	16.4
Large Tree(s) that Shade the Home							
Yes	48.2	50.5	44.3	45.0	50.7	52.6	5.4
No	50.5	48.1	53.7	54.1	47.9	46.5	5.3
Central Air-Conditioner Age (excludes systems for more than one housing unit)							
Less than 5 Years	17.8	14.8	16.4	16.6	19.4	20.2	8.8
5 to 9 Years	19.2	19.2	16.3	16.0	22.3	22.8	11.8
10 to 19 Years	17.4	14.6	13.4	16.3	18.7	21.9	10.6
20 Years or More	5.4	3.3	6.1	5.7	5.2	5.0	17.6
Don't Know	3.7	Q	3.7	2.6	3.2	5.7	24.8
Central Air-Conditioning Use							
Only a Few Times	17.1	27.3	23.5	14.9	16.6	10.6	11.8
Quite a Bit	14.2	19.4	15.2	14.9	13.9	11.6	9.7
All Summer	33.2	8.1	17.9	28.4	38.5	55.3	8.1
Pays for Electricity for Central Air-Conditioning							
Yes	62.8	53.4	55.9	56.3	67.7	74.7	4.1
No	1.5	Q	Q	1.6	Q	2.4	39.8

See footnotes at end of table.

**Table HC4-1b. Air Conditioning by Climate Zone,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total	Climate Zone ¹					RSE Row Factors
		Fewer than 2,000 CDD and --				2,000 CDD or More and Fewer than 4,000 HDD	
		More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.5	1.9	1.0	0.9	1.2	0.9	
Age of Most-Used Room Air Conditioner							
Less than 5 Years	11.9	12.5	13.1	13.7	11.9	8.8	11.0
5 to 9 Years	9.3	11.2	12.7	10.8	7.1	5.7	12.1
10 or 19 Years	7.7	12.1	8.6	9.2	6.6	5.0	12.7
20 or More Years	2.7	5.2	3.5	3.6	2.5	Q	17.2
Don't Know	2.6	2.8	3.5	3.6	1.4	1.5	22.5
Pays for Electricity for Room Air-Conditioning							
Yes	31.8	39.9	39.1	38.3	27.0	20.1	7.5
No	2.4	Q	2.4	2.6	2.7	1.5	34.2
Room Air-Conditioning Use							
Only a Few Times	17.9	28.7	25.2	21.8	13.6	7.4	9.6
Quite a Bit	8.8	12.3	10.3	11.2	7.6	5.1	11.2
All Summer	7.5	Q	5.9	8.0	8.5	9.1	12.9

¹ One of five climatically distinct areas, determined according to the 30-year average (1961-1990) of the annual heating and cooling degree-days. For this report, the heating or cooling degree-days are a measure of how cold or how hot a location is over a period of one year, relative to a base temperature of 65 degrees Fahrenheit. A household is assigned to a climate zone according to the 30-year average annual degree-days for an appropriate nearby weather station.

² The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

³ Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-2b. Air Conditioning by Year of Construction,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total	Year of Construction						RSE Row Factors
		1990 to 1997 ¹	1980 to 1989	1970 to 1979	1960 to 1969	1950 to 1959	1949 or Before	
RSE Column Factor:	0.5	1.7	1.2	1.0	1.1	1.1	0.9	
Households With Electric Air-Conditioning Equipment								
Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	Q	Q	Q	38.3
Room Air Conditioners Not Used ..	1.0	Q	Q	Q	Q	Q	2.1	28.7
Households Using Electric Air-Conditioning²								
Air-Conditioning ²	98.7	99.7	99.0	99.3	98.0	99.6	97.6	NE
Type of Electric Air-Conditioning Used								
Central Air-Conditioning ³	64.5	90.1	87.0	72.8	64.1	51.4	31.3	3.2
Without a Heat Pump	50.2	66.7	60.6	55.2	54.3	43.0	29.2	5.2
With a Heat Pump	14.4	23.4	26.5	17.6	9.8	8.5	2.1	14.6
Room Air-Conditioning	34.2	9.6	11.9	26.4	33.9	48.1	66.2	7.0
1 Unit	20.2	7.3	9.3	17.6	20.0	25.1	36.5	9.7
2 Units	9.8	Q	1.9	6.1	9.2	16.8	21.0	12.6
3 or More Units	4.1	Q	Q	2.8	4.7	6.2	8.8	19.1
Number of Rooms Air-Conditioned in Summer 1997								
One or Two	17.7	7.2	8.8	13.9	17.1	20.2	33.4	10.1
Three	11.2	4.1	9.3	14.6	12.7	10.0	13.1	12.5
Four	15.7	16.0	17.8	15.1	14.8	13.5	16.1	10.2
Five or More	54.2	72.4	63.1	55.7	53.5	55.9	35.0	4.2
Percentage of Rooms Air-Conditioned								
100%	68.3	89.9	82.9	75.5	70.2	62.4	39.8	2.7
50% to 99%	15.5	4.3	10.8	13.8	14.8	19.1	25.4	10.3
25% to 49%	9.5	3.0	3.9	7.3	8.1	11.7	19.4	13.9
1% to 24%	5.4	2.5	1.3	2.7	5.0	6.4	12.9	16.9
Large Tree(s) that Shade the Home								
Yes	48.2	26.2	45.1	49.9	54.5	54.1	53.6	5.2
No	50.5	73.5	53.9	49.3	43.5	45.5	44.0	4.7
Central Air-Conditioner Age (excludes systems for more than one housing unit)								
Less than 5 Years	17.8	56.4	10.1	15.9	15.7	14.8	10.1	8.7
5 to 9 Years	19.2	31.6	33.7	15.8	14.9	12.7	8.9	10.1
10 to 19 Years	17.4	Q	37.4	21.6	14.5	14.4	7.5	9.9
20 Years or More	5.4	Q	Q	10.0	12.7	6.3	2.7	15.7
Don't Know	3.7	Q	4.1	8.0	3.4	2.6	1.6	22.6
Central Air-Conditioning Use								
Only a Few Times	17.1	18.8	21.4	18.9	17.8	17.9	9.9	10.4
Quite a Bit	14.2	21.2	18.0	16.3	12.4	10.6	8.6	10.1
All Summer	33.2	50.0	47.6	37.6	34.0	22.9	12.7	6.7
Pays for Electricity for Central Air-Conditioning								
Yes	62.8	88.7	84.6	70.9	60.5	51.0	30.8	3.4
No	1.5	Q	2.3	1.8	2.9	Q	Q	37.1

See footnotes at end of table.

**Table HC4-2b. Air Conditioning by Year of Construction,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total	Year of Construction						RSE Row Factors
		1990 to 1997 ¹	1980 to 1989	1970 to 1979	1960 to 1969	1950 to 1959	1949 or Before	
RSE Column Factor:	0.5	1.7	1.2	1.0	1.1	1.1	0.9	
Age of Most-Used Room Air Conditioner								
Less than 5 Years	11.9	6.0	4.5	8.3	10.3	16.8	22.9	10.9
5 to 9 Years	9.3	3.0	2.5	6.6	9.3	11.2	20.1	13.7
10 or 19 Years	7.7	Q	3.7	5.9	6.8	12.1	15.0	12.9
20 or More Years	2.7	Q	Q	2.9	4.6	4.1	4.4	20.2
Don't Know	2.6	Q	Q	2.7	2.9	3.9	3.9	22.6
Pays for Electricity for Room Air-Conditioning								
Yes	31.8	9.4	9.7	23.4	32.8	46.0	62.3	7.3
No	2.4	Q	2.2	3.0	Q	2.1	3.9	30.4
Room Air-Conditioning Use								
Only a Few Times	17.9	3.9	7.2	12.8	17.0	24.2	36.4	10.4
Quite a Bit	8.8	2.5	2.4	6.3	9.3	12.8	17.4	13.1
All Summer	7.5	3.2	2.3	7.3	7.5	11.1	12.4	14.8

¹ New construction for 1997 includes only those housing units built and occupied between January and the April-August period when the household interviews were conducted.

² The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

³ Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-3b. Air Conditioning by Household Income,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total	1997 Household Income				Below Poverty Line	Eligible for Federal Assistance ¹	RSE Row Factors
		Less than \$10,000	\$10,000 to \$24,999	\$25,000 to \$49,999	\$50,000 or More			
RSE Column Factor:	0.6	1.4	1.0	0.9	1.0	1.4	0.9	
Households With Electric Air-Conditioning Equipment								
Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	Q	Q	Q	31.9
Room Air Conditioners Not Used ..	1.0	Q	1.1	0.9	1.0	Q	1.4	29.7
Households Using Electric Air-Conditioning²								
Air-Conditioning ²	98.7	99.0	98.4	98.6	99.1	98.4	98.1	NE
Type of Electric Air-Conditioning Used								
Central Air-Conditioning ³	64.5	44.7	55.6	66.6	77.3	43.3	49.3	3.4
Without a Heat Pump	50.2	34.0	42.8	53.2	59.3	33.3	37.6	5.1
With a Heat Pump	14.4	10.7	12.7	13.5	18.1	10.0	11.7	12.2
Room Air-Conditioning	34.2	54.3	42.8	31.9	21.8	55.0	48.8	4.8
1 Unit	20.2	40.1	27.9	17.0	9.7	39.9	32.4	5.9
2 Units	9.8	12.3	10.8	11.2	6.6	13.2	12.7	10.2
3 or More Units	4.1	Q	4.1	3.7	5.5	2.0	3.8	18.4
Number of Rooms Air-Conditioned in Summer 1997								
One or Two	17.7	34.1	22.2	14.1	11.6	32.4	25.9	6.8
Three	11.2	20.1	14.4	11.3	4.9	17.6	15.9	8.4
Four	15.7	18.1	19.7	17.9	9.1	18.0	18.7	8.1
Five or More	54.2	26.7	42.1	55.2	73.5	30.4	37.5	4.1
Percentage of Rooms Air-Conditioned								
100%	68.3	59.6	64.8	69.6	73.2	56.0	61.8	2.6
50% to 99%	15.5	18.7	16.8	15.5	13.3	21.1	17.9	7.6
25% to 49%	9.5	15.9	11.0	8.2	7.2	14.5	12.6	10.5
1% to 24%	5.4	4.8	5.8	5.4	5.4	6.7	5.8	12.7
Large Tree(s) that Shade the Home								
Yes	48.2	37.6	46.3	50.4	51.4	38.6	41.0	4.9
No	50.5	61.4	52.1	48.1	47.7	59.8	57.1	4.1
Central Air-Conditioner Age (excludes systems for more than one housing unit)								
Less than 5 Years	17.8	11.9	14.4	19.0	21.8	11.7	13.4	8.1
5 to 9 Years	19.2	9.5	15.8	18.2	26.6	11.0	12.5	10.1
10 to 19 Years	17.4	12.7	14.7	18.1	20.6	10.3	12.7	8.9
20 Years or More	5.4	3.9	5.4	5.9	5.3	3.4	4.7	16.3
Don't Know	3.7	4.3	3.4	4.8	2.5	5.0	3.9	19.4
Central Air-Conditioning Use								
Only a Few Times	17.1	14.5	14.5	18.8	18.5	12.9	14.1	9.1
Quite a Bit	14.2	9.4	10.5	14.7	18.8	9.2	10.0	9.4
All Summer	33.2	20.8	30.5	33.1	40.0	21.3	25.2	6.3
Pays for Electricity for Central Air-Conditioning								
Yes	62.8	41.4	52.9	65.5	76.5	40.7	46.1	3.6
No	1.5	2.5	2.3	1.1	Q	Q	2.5	31.0

See footnotes at end of table.

Table HC4-3b. Air Conditioning by Household Income, Percent of U.S. Households, 1997 (Continued)

Air Conditioning Characteristics	Total	1997 Household Income				Below Poverty Line	Eligible for Federal Assistance ¹	RSE Row Factors
		Less than \$10,000	\$10,000 to \$24,999	\$25,000 to \$49,999	\$50,000 or More			
RSE Column Factor:	0.6	1.4	1.0	0.9	1.0	1.4	0.9	
Age of Most-Used Room Air Conditioner								
Less than 5 Years	11.9	21.1	13.0	12.0	7.4	20.5	17.0	8.7
5 to 9 Years	9.3	12.5	11.2	8.8	7.0	13.1	12.4	10.1
10 or 19 Years	7.7	11.0	11.7	6.2	4.7	12.4	11.1	9.6
20 or More Years	2.7	4.0	3.7	2.8	1.3	3.6	3.9	16.0
Don't Know	2.6	5.7	3.2	2.2	1.4	5.4	4.5	17.5
Pays for Electricity for Room Air-Conditioning								
Yes	31.8	44.9	40.0	30.6	21.3	46.8	44.0	5.4
No	2.4	9.3	2.9	1.3	Q	8.3	4.8	21.9
Room Air-Conditioning Use								
Only a Few Times	17.9	28.4	23.8	16.4	10.6	28.2	25.9	6.7
Quite a Bit	8.8	11.5	9.0	10.3	6.0	11.9	10.3	10.8
All Summer	7.5	14.4	9.9	5.2	5.2	14.9	12.6	10.3

¹ Below 150 percent of poverty line or 60 percent of median State income.

² The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

³ Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-4b. Air Conditioning by Type of Housing Unit,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total	Type of Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.5	0.6	1.8	1.3	1.5	
Households With Electric Air-Conditioning Equipment						
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	0.4	Q	Q	Q	46.5
Room Air Conditioners Not Used ..	1.0	0.9	Q	Q	Q	35.8
Households Using Electric Air-Conditioning¹						
Households Using Electric Air-Conditioning ¹	98.7	99.0	97.3	97.9	99.1	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ²	64.5	67.6	45.4	58.1	57.8	4.4
Without a Heat Pump	50.2	52.1	40.0	45.8	45.3	6.4
With a Heat Pump	14.4	15.5	Q	12.3	12.6	16.2
Room Air-Conditioning	34.2	31.3	51.9	39.8	41.3	6.5
1 Unit	20.2	16.1	39.6	30.8	29.3	8.1
2 Units	9.8	10.3	11.6	7.4	9.4	13.2
3 or More Units	4.1	5.0	Q	Q	Q	19.8
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	17.7	13.3	34.1	33.4	18.9	8.3
Three	11.2	7.6	23.9	25.1	9.4	10.6
Four	15.7	11.0	21.9	30.2	32.3	8.8
Five or More	54.2	67.0	17.4	9.2	38.5	5.9
Percentage of Rooms Air-Conditioned						
100%	68.3	68.0	57.6	72.4	70.4	3.4
50% to 99%	15.5	16.7	13.4	9.8	16.5	10.2
25% to 49%	9.5	8.1	19.4	13.6	8.6	12.7
1% to 24%	5.4	6.2	6.9	2.0	Q	15.1
Large Tree(s) that Shade the Home						
Yes	48.2	54.4	27.3	27.3	42.1	6.9
No	50.5	44.6	70.0	70.6	57.0	4.6
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	17.8	19.8	7.5	8.2	26.6	10.8
5 to 9 Years	19.2	20.8	9.8	16.1	13.8	13.2
10 to 19 Years	17.4	19.3	10.9	12.4	11.7	11.5
20 Years or More	5.4	5.4	Q	6.5	3.8	18.3
Don't Know	3.7	2.1	12.8	9.4	Q	18.8
Central Air-Conditioning Use						
Only a Few Times	17.1	17.7	12.4	17.6	12.4	11.6
Quite a Bit	14.2	14.6	17.4	11.9	13.0	10.7
All Summer	33.2	35.3	15.7	28.7	32.4	7.9
Pays for Electricity for Central Air-Conditioning						
Yes	62.8	67.2	42.0	51.8	54.1	4.7
No	1.5	0.5	Q	4.9	Q	34.4

See footnotes at end of table.

**Table HC4-4b. Air Conditioning by Type of Housing Unit,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total	Type of Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.5	0.6	1.8	1.3	1.5	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	11.9	10.9	20.1	12.1	16.5	10.1
5 to 9 Years	9.3	8.9	16.7	9.1	9.6	12.4
10 or 19 Years	7.7	7.8	6.9	7.0	8.5	13.4
20 or More Years	2.7	2.2	Q	4.9	Q	19.7
Don't Know	2.6	1.5	Q	6.7	4.1	20.1
Pays for Electricity for Room Air-Conditioning						
Yes	31.8	30.8	45.5	29.7	39.3	7.0
No	2.4	0.6	6.4	10.1	Q	27.4
Room Air-Conditioning Use						
Only a Few Times	17.9	16.1	32.5	22.0	18.4	9.2
Quite a Bit	8.8	8.3	12.7	9.8	9.7	11.4
All Summer	7.5	7.0	6.7	8.0	13.2	13.0

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-5b. Air Conditioning by Type of Owner-Occupied Housing Unit,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total Owner-Occupied Units	Type of Owner-Occupied Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.6	0.6	1.7	1.3	1.4	
Total	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	0.4	Q	Q	Q	45.0
Room Air Conditioners Not Used ..	0.9	0.9	Q	Q	Q	37.8
Households Using Electric Air-Conditioning¹	98.8	99.0	97.3	97.9	99.1	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ²	68.8	67.6	45.4	58.1	57.8	4.5
Without a Heat Pump	53.7	52.1	40.0	45.8	45.3	6.5
With a Heat Pump	15.1	15.5	Q	12.3	12.6	16.6
Room Air-Conditioning	30.0	31.3	51.9	39.8	41.3	6.9
1 Unit	14.8	16.1	39.6	30.8	29.3	8.7
2 Units	9.9	10.3	11.6	7.4	9.4	13.5
3 or More Units	5.2	5.0	Q	Q	Q	18.8
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	11.8	13.3	34.1	33.4	18.9	9.1
Three	7.4	7.6	23.9	25.1	9.4	11.5
Four	12.6	11.0	21.9	30.2	32.3	9.0
Five or More	67.1	67.0	17.4	9.2	38.5	5.6
Percentage of Rooms Air-Conditioned						
100%	69.7	68.0	57.6	72.4	70.4	3.5
50% to 99%	16.4	16.7	13.4	9.8	16.5	10.4
25% to 49%	7.2	8.1	19.4	13.6	8.6	13.5
1% to 24%	5.5	6.2	6.9	2.0	Q	15.8
Large Tree(s) that Shade the Home						
Yes	54.0	54.4	27.3	27.3	42.1	6.8
No	44.8	44.6	70.0	70.6	57.0	4.8
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	21.2	19.8	7.5	8.2	26.6	11.0
5 to 9 Years	21.1	20.8	9.8	16.1	13.8	13.1
10 to 19 Years	19.5	19.3	10.9	12.4	11.7	11.9
20 Years or More	5.3	5.4	Q	6.5	3.8	18.4
Don't Know	1.4	2.1	12.8	9.4	Q	19.8
Central Air-Conditioning Use						
Only a Few Times	17.7	17.7	12.4	17.6	12.4	11.9
Quite a Bit	15.1	14.6	17.4	11.9	13.0	11.2
All Summer	36.0	35.3	15.7	28.7	32.4	8.1
Pays for Electricity for Central Air-Conditioning						
Yes	68.2	67.2	42.0	51.8	54.1	4.8
No	0.6	0.5	Q	4.9	Q	39.5

See footnotes at end of table.

Table HC4-5b. Air Conditioning by Type of Owner-Occupied Housing Unit, Percent of U.S. Households, 1997 (Continued)

Air Conditioning Characteristics	Total Owner-Occupied Units	Type of Owner-Occupied Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.6	0.6	1.7	1.3	1.4	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	10.1	10.9	20.1	12.1	16.5	10.6
5 to 9 Years	8.7	8.9	16.7	9.1	9.6	12.8
10 or 19 Years	7.6	7.8	6.9	7.0	8.5	14.2
20 or More Years	2.6	2.2	Q	4.9	Q	20.7
Don't Know	1.0	1.5	Q	6.7	4.1	24.4
Pays for Electricity for Room Air-Conditioning						
Yes	29.8	30.8	45.5	29.7	39.3	7.3
No	Q	0.6	6.4	10.1	Q	NF
Room Air-Conditioning Use						
Only a Few Times	15.6	16.1	32.5	22.0	18.4	9.9
Quite a Bit	7.7	8.3	12.7	9.8	9.7	11.6
All Summer	6.6	7.0	6.7	8.0	13.2	14.0

¹ The number of households where the end use is electric air-conditioning excludes households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those latter households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-6b. Air Conditioning by Type of Rented Housing Unit,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total Rented Units	Type of Rented Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.7	0.5	1.6	1.2	1.3	
Total	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	Q	0.4	Q	Q	Q	NF
Room Air Conditioners Not Used ..	1.0	0.9	Q	Q	Q	50.6
Households Using Electric Air-Conditioning¹	98.5	99.0	97.3	97.9	99.1	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ²	53.8	67.6	45.4	58.1	57.8	5.3
Without a Heat Pump	41.2	52.1	40.0	45.8	45.3	7.3
With a Heat Pump	12.6	15.5	Q	12.3	12.6	17.0
Room Air-Conditioning	44.8	31.3	51.9	39.8	41.3	7.0
1 Unit	33.6	16.1	39.6	30.8	29.3	8.5
2 Units	9.6	10.3	11.6	7.4	9.4	14.8
3 or More Units	1.5	5.0	Q	Q	Q	23.4
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	32.4	13.3	34.1	33.4	18.9	8.7
Three	20.6	7.6	23.9	25.1	9.4	11.3
Four	23.5	11.0	21.9	30.2	32.3	9.6
Five or More	21.9	67.0	17.4	9.2	38.5	7.2
Percentage of Rooms Air-Conditioned						
100%	64.8	68.0	57.6	72.4	70.4	3.9
50% to 99%	13.3	16.7	13.4	9.8	16.5	11.4
25% to 49%	15.2	8.1	19.4	13.6	8.6	13.6
1% to 24%	5.3	6.2	6.9	2.0	Q	16.3
Large Tree(s) that Shade the Home						
Yes	33.9	54.4	27.3	27.3	42.1	8.1
No	64.7	44.6	70.0	70.6	57.0	4.9
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	9.4	19.8	7.5	8.2	26.6	13.5
5 to 9 Years	14.4	20.8	9.8	16.1	13.8	16.1
10 to 19 Years	12.1	19.3	10.9	12.4	11.7	13.3
20 Years or More	5.5	5.4	Q	6.5	3.8	20.2
Don't Know	9.4	2.1	12.8	9.4	Q	19.1
Central Air-Conditioning Use						
Only a Few Times	15.6	17.7	12.4	17.6	12.4	13.6
Quite a Bit	12.1	14.6	17.4	11.9	13.0	12.5
All Summer	26.1	35.3	15.7	28.7	32.4	8.9
Pays for Electricity for Central Air-Conditioning						
Yes	49.5	67.2	42.0	51.8	54.1	5.7
No	3.6	0.5	Q	4.9	Q	33.8

See footnotes at end of table.

Table HC4-6b. Air Conditioning by Type of Rented Housing Unit, Percent of U.S. Households, 1997 (Continued)

Air Conditioning Characteristics	Total Rented Units	Type of Rented Housing Unit				RSE Row Factors
		Single-Family	Multifamily		Mobile Home	
			Two to Four Units	Five or More Units		
RSE Column Factor:	0.7	0.5	1.6	1.2	1.3	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	16.1	10.9	20.1	12.1	16.5	10.7
5 to 9 Years	10.9	8.9	16.7	9.1	9.6	13.3
10 or 19 Years	8.0	7.8	6.9	7.0	8.5	14.8
20 or More Years	3.2	2.2	Q	4.9	Q	23.0
Don't Know	6.6	1.5	Q	6.7	4.1	20.2
Pays for Electricity for Room Air-Conditioning						
Yes	37.0	30.8	45.5	29.7	39.3	7.6
No	7.8	0.6	6.4	10.1	Q	26.7
Room Air-Conditioning Use						
Only a Few Times	23.8	16.1	32.5	22.0	18.4	9.5
Quite a Bit	11.4	8.3	12.7	9.8	9.7	12.9
All Summer	9.6	7.0	6.7	8.0	13.2	13.8

¹ The number of households where the end use is electric air-conditioning excludes households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those latter households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-7b. Air Conditioning by Four Most Populated States,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total	Four Most Populated States				RSE Row Factors
		New York	California	Texas	Florida	
RSE Column Factor:	0.4	1.3	1.4	1.2	1.2	
Households With Electric Air-Conditioning Equipment						
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	2.9	0.6	1.2	28.9
Room Air Conditioners Not Used	1.0	Q	Q	Q	1.2	40.5
Households Using Electric Air-Conditioning¹						
Households Using Electric Air-Conditioning ¹	98.7	99.4	96.4	99.4	98.3	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ²	64.5	29.5	67.0	74.8	85.5	4.7
Without a Heat Pump	50.2	27.4	60.0	64.1	43.7	8.6
With a Heat Pump	14.4	2.1	7.0	10.7	41.8	21.2
Room Air-Conditioning	34.2	69.9	29.4	24.7	12.8	9.0
1 Unit	20.2	36.4	26.8	10.5	8.2	11.4
2 Units	9.8	22.6	2.3	8.3	2.6	16.8
3 or More Units	4.1	10.9	Q	5.8	2.0	26.8
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	17.7	45.5	20.4	12.4	5.4	14.0
Three	11.2	8.7	14.0	17.2	5.8	12.8
Four	15.7	20.8	14.9	11.7	15.7	18.8
Five or More	54.2	24.4	47.1	58.0	71.4	8.7
Percentage of Rooms Air-Conditioned						
100%	68.3	43.9	70.6	78.7	84.3	4.0
50% to 99%	15.5	18.5	10.3	13.3	11.2	16.8
25% to 49%	9.5	20.4	10.6	6.1	Q	18.2
1% to 24%	5.4	16.6	4.8	1.3	Q	17.5
Large Tree(s) that Shade the Home						
Yes	48.2	35.9	35.6	49.4	56.8	7.0
No	50.5	63.4	60.7	50.1	41.5	6.0
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	17.8	12.8	11.9	25.2	16.9	9.7
5 to 9 Years	19.2	10.3	24.0	17.9	30.8	15.8
10 to 19 Years	17.4	3.3	19.1	20.0	25.9	13.7
20 Years or More	5.4	Q	9.8	3.4	5.4	15.6
Don't Know	3.7	Q	1.5	5.1	5.9	29.0
Central Air-Conditioning Use						
Only a Few Times	17.1	10.6	35.2	8.2	11.5	14.4
Quite a Bit	14.2	10.2	17.4	9.7	11.6	12.8
All Summer	33.2	8.6	14.3	56.9	62.4	7.4
Pays for Electricity for Central Air-Conditioning						
Yes	62.8	27.8	63.5	70.6	84.3	4.9
No	1.5	Q	Q	Q	1.2	41.7

See footnotes at end of table.

**Table HC4-7b. Air Conditioning by Four Most Populated States,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total	Four Most Populated States				RSE Row Factors
		New York	California	Texas	Florida	
RSE Column Factor:	0.4	1.3	1.4	1.2	1.2	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	11.9	23.3	11.6	11.2	4.6	13.5
5 to 9 Years	9.3	20.2	5.3	8.0	1.9	19.4
10 or 19 Years	7.7	16.8	5.8	3.5	4.0	14.7
20 or More Years	2.7	3.5	3.3	Q	Q	23.1
Don't Know	2.6	6.1	3.4	1.5	2.2	25.6
Pays for Electricity for Room Air-Conditioning						
Yes	31.8	63.4	25.4	23.1	11.2	10.7
No	2.4	6.5	4.0	1.5	Q	32.1
Room Air-Conditioning Use						
Only a Few Times	17.9	43.2	20.2	7.6	5.0	12.0
Quite a Bit	8.8	17.9	5.1	6.5	2.9	15.2
All Summer	7.5	8.8	4.1	10.6	4.9	20.7

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-8b. Air Conditioning by Urban/Rural Location,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Urban/Rural Location ¹					RSE Row Factors
	Total	City	Town	Suburbs	Rural	
	0.6	0.8	1.3	1.3	1.3	
Households With Electric Air-Conditioning Equipment						
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	0.8	Q	Q	Q	28.5
Room Air Conditioners Not Used	1.0	1.0	0.8	Q	Q	29.8
Households Using Electric Air-Conditioning²						
Households Using Electric Air-Conditioning ²	98.7	98.4	99.0	99.0	99.0	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ³	64.5	60.9	58.6	79.6	62.2	2.9
Without a Heat Pump	50.2	48.7	48.8	61.0	42.0	4.7
With a Heat Pump	14.4	12.2	9.8	18.6	20.3	11.2
Room Air-Conditioning	34.2	37.5	40.4	19.4	36.7	5.6
1 Unit	20.2	23.2	22.5	11.4	20.3	7.6
2 Units	9.8	9.8	13.1	5.6	11.6	10.4
3 or More Units	4.1	4.5	4.7	2.4	4.8	16.0
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	17.7	21.4	19.6	9.2	15.7	8.0
Three	11.2	12.6	12.0	6.3	12.3	10.1
Four	15.7	17.2	15.8	14.7	12.8	8.9
Five or More	54.2	47.2	51.6	68.9	58.2	3.7
Percentage of Rooms Air-Conditioned						
100%	68.3	67.8	65.4	77.2	61.5	2.4
50% to 99%	15.5	14.0	17.2	14.0	20.0	7.8
25% to 49%	9.5	11.5	9.8	3.3	11.3	10.8
1% to 24%	5.4	5.2	6.5	4.4	6.2	12.4
Large Tree(s) that Shade the Home						
Yes	48.2	42.5	48.8	54.7	55.7	4.2
No	50.5	55.9	50.1	44.3	43.3	4.3
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	17.8	15.2	16.4	21.4	22.7	7.3
5 to 9 Years	19.2	18.9	17.2	22.2	18.2	8.6
10 to 19 Years	17.4	14.8	17.1	25.0	15.4	8.3
20 Years or More	5.4	5.1	5.8	6.4	4.3	14.5
Don't Know	3.7	5.2	1.5	4.0	1.4	20.5
Central Air-Conditioning Use						
Only a Few Times	17.1	16.4	16.9	20.4	15.1	8.8
Quite a Bit	14.2	13.0	11.6	19.4	14.1	8.1
All Summer	33.2	31.5	30.0	39.7	33.0	5.4
Pays for Electricity for Central Air-Conditioning						
Yes	62.8	58.7	57.4	78.3	61.1	3.0
No	1.5	1.9	Q	1.1	1.2	29.9

See footnotes at end of table.

**Table HC4-8b. Air Conditioning by Urban/Rural Location,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total	Urban/Rural Location ¹				RSE Row Factors
		City	Town	Suburbs	Rural	
RSE Column Factor:	0.6	0.8	1.3	1.3	1.3	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	11.9	13.5	14.7	5.9	11.4	9.4
5 to 9 Years	9.3	10.3	11.0	5.1	10.0	10.8
10 or 19 Years	7.7	8.0	8.5	5.1	9.4	10.7
20 or More Years	2.7	2.1	4.5	1.9	3.7	18.4
Don't Know	2.6	3.6	1.7	1.4	2.3	18.7
Pays for Electricity for Room Air-Conditioning						
Yes	31.8	34.3	37.9	17.8	36.0	5.9
No	2.4	3.2	2.5	1.7	0.7	29.5
Room Air-Conditioning Use						
Only a Few Times	17.9	20.1	22.2	9.4	17.9	7.9
Quite a Bit	8.8	9.7	9.6	5.5	9.6	9.5
All Summer	7.5	7.8	8.6	4.5	9.2	11.4

¹ Based on the household respondent's description rather than the Federal Government definition.

² The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

³ Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-9b. Air Conditioning by Northeast Census Region,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total U.S.	Northeast Census Region			RSE Row Factors
		Total	Census Division		
			Middle Atlantic	New England	
RSE Column Factor:	0.4	1.1	1.2	1.8	
Households With Electric Air-Conditioning Equipment					
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	45.0
Room Air Conditioners Not Used	1.0	2.3	2.0	Q	32.3
Households Using Electric Air-Conditioning¹					
Households Using Electric Air-Conditioning ¹	98.7	97.5	97.9	96.1	1.3
Type of Electric Air-Conditioning Used					
Central Air-Conditioning ²	64.5	35.0	40.0	15.7	10.1
Without a Heat Pump	50.2	31.1	35.7	13.7	12.8
With a Heat Pump	14.4	3.9	4.4	Q	26.9
Room Air-Conditioning	34.2	62.5	57.8	80.4	6.3
1 Unit	20.2	32.0	28.6	45.0	8.0
2 Units	9.8	21.5	20.9	24.0	10.4
3 or More Units	4.1	9.0	8.4	11.4	18.5
Number of Rooms Air-Conditioned in Summer 1997					
One or Two	17.7	37.3	35.2	45.5	8.2
Three	11.2	10.8	10.6	11.9	11.5
Four	15.7	15.2	15.7	13.4	14.6
Five or More	54.2	34.1	36.4	25.4	7.5
Percentage of Rooms Air-Conditioned					
100%	68.3	47.2	49.8	37.1	5.2
50% to 99%	15.5	18.3	18.6	16.8	11.2
25% to 49%	9.5	17.7	16.7	21.9	11.0
1% to 24%	5.4	14.3	12.8	20.3	11.2
Large Tree(s) that Shade the Home					
Yes	48.2	41.5	41.1	42.8	6.9
No	50.5	56.1	56.8	53.3	5.6
Central Air-Conditioner Age (excludes systems for more than one housing unit)					
Less than 5 Years	17.8	10.1	12.1	Q	8.6
5 to 9 Years	19.2	11.1	12.4	5.9	18.4
10 to 19 Years	17.4	9.0	10.6	Q	21.4
20 Years or More	5.4	3.4	3.7	Q	20.7
Don't Know	3.7	Q	Q	Q	28.9
Central Air-Conditioning Use					
Only a Few Times	17.1	15.5	17.0	9.8	13.6
Quite a Bit	14.2	8.6	10.1	Q	18.1
All Summer	33.2	10.9	12.9	Q	8.4
Pays for Electricity for Central Air-Conditioning					
Yes	62.8	34.4	39.2	15.7	10.1
No	1.5	Q	Q	Q	46.0

See footnotes at end of table.

**Table HC4-9b. Air Conditioning by Northeast Census Region,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total U.S.	Northeast Census Region			RSE Row Factors
		Total	Census Division		
			Middle Atlantic	New England	
RSE Column Factor:	0.4	1.1	1.2	1.8	
Age of Most-Used Room Air Conditioner					
Less than 5 Years	11.9	20.5	18.5	28.1	10.3
5 to 9 Years	9.3	19.5	17.3	27.9	10.4
10 or 19 Years	7.7	13.5	13.9	12.3	12.7
20 or More Years	2.7	5.0	4.5	6.6	20.9
Don't Know	2.6	4.1	3.7	5.5	19.5
Pays for Electricity for Room Air-Conditioning					
Yes	31.8	57.9	53.4	74.9	6.4
No	2.4	4.6	4.4	5.4	25.4
Room Air-Conditioning Use					
Only a Few Times	17.9	41.8	38.7	53.9	8.0
Quite a Bit	8.8	14.0	13.1	17.4	7.0
All Summer	7.5	6.7	6.1	9.1	14.3

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-10b. Air Conditioning by Midwest Census Region,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total U.S.	Midwest Census Region			RSE Row Factors
		Total	Census Division		
			East North Central	West North Central	
RSE Column Factor:	0.5	1.0	1.2	1.6	
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	37.5
Room Air Conditioners Not Used	1.0	1.1	Q	Q	27.3
Households Using Electric Air-Conditioning¹	98.7	98.9	99.0	98.7	NE
Type of Electric Air-Conditioning Used					
Central Air-Conditioning ²	64.5	65.6	64.4	67.8	3.9
Without a Heat Pump	50.2	63.3	62.0	65.9	4.5
With a Heat Pump	14.4	2.2	2.4	Q	24.0
Room Air-Conditioning	34.2	33.3	34.6	30.9	7.6
1 Unit	20.2	23.2	23.6	22.5	9.2
2 Units	9.8	8.0	8.2	7.7	13.5
3 or More Units	4.1	2.1	2.8	Q	21.5
Number of Rooms Air-Conditioned in Summer 1997					
One or Two	17.7	17.3	18.2	15.6	8.1
Three	11.2	9.4	10.5	7.1	12.0
Four	15.7	16.2	16.1	16.6	8.9
Five or More	54.2	56.0	54.2	59.5	4.1
Percentage of Rooms Air-Conditioned					
100%	68.3	67.0	66.5	68.1	3.1
50% to 99%	15.5	16.2	16.5	15.7	9.4
25% to 49%	9.5	10.1	10.6	9.2	8.3
1% to 24%	5.4	5.5	5.4	5.8	14.0
Large Tree(s) that Shade the Home					
Yes	48.2	49.2	46.9	53.6	4.6
No	50.5	49.7	52.1	45.1	4.6
Central Air-Conditioner Age (excludes systems for more than one housing unit)					
Less than 5 Years	17.8	18.6	18.6	18.7	7.8
5 to 9 Years	19.2	19.0	19.3	18.4	10.0
10 to 19 Years	17.4	16.4	14.3	20.6	10.2
20 Years or More	5.4	6.7	7.0	6.2	18.8
Don't Know	3.7	3.9	4.5	Q	20.2
Central Air-Conditioning Use					
Only a Few Times	17.1	24.6	24.5	24.9	8.1
Quite a Bit	14.2	18.9	20.2	16.3	9.0
All Summer	33.2	22.1	19.8	26.6	9.3
Pays for Electricity for Central Air-Conditioning					
Yes	62.8	64.5	63.4	66.8	3.7
No	1.5	1.0	Q	Q	41.4

See footnotes at end of table.

**Table HC4-10b. Air Conditioning by Midwest Census Region,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total U.S.	Midwest Census Region			RSE Row Factors
		Total	Census Division		
			East North Central	West North Central	
RSE Column Factor:	0.5	1.0	1.2	1.6	
Age of Most-Used Room Air Conditioner					
Less than 5 Years	11.9	10.4	12.1	6.9	8.9
5 to 9 Years	9.3	8.9	9.8	7.2	13.1
10 or 19 Years	7.7	8.0	7.2	9.5	11.4
20 or More Years	2.7	2.9	2.7	3.3	20.7
Don't Know	2.6	3.1	2.7	4.0	19.6
Pays for Electricity for Room Air-Conditioning					
Yes	31.8	30.8	32.2	28.2	8.3
No	2.4	2.5	2.4	Q	34.5
Room Air-Conditioning Use					
Only a Few Times	17.9	18.4	17.8	19.8	9.2
Quite a Bit	8.8	10.2	11.4	7.8	12.4
All Summer	7.5	4.7	5.4	3.4	13.1

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-11b. Air Conditioning by South Census Region,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total U.S.	South Census Region				RSE Row Factors
		Total	Census Division			
			South Atlantic	East South Central	West South Central	
RSE Column Factor:	0.5	0.8	1.1	1.5	1.4	
Households With Electric Air-Conditioning Equipment						
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	Q	Q	Q	Q	35.9
Room Air Conditioners Not Used	1.0	Q	Q	Q	Q	31.8
Households Using Electric Air-Conditioning¹						
Households Using Electric Air-Conditioning ¹	98.7	99.5	99.3	100.0	99.6	NE
Type of Electric Air-Conditioning Used						
Central Air-Conditioning ²	64.5	74.6	76.9	70.2	73.3	2.6
Without a Heat Pump	50.2	49.1	40.8	48.0	64.0	5.9
With a Heat Pump	14.4	25.5	36.1	22.2	9.4	12.3
Room Air-Conditioning	34.2	24.9	22.4	29.8	26.3	6.8
1 Unit	20.2	12.7	13.1	14.5	10.8	8.2
2 Units	9.8	7.9	6.2	9.9	9.6	13.0
3 or More Units	4.1	4.4	3.1	5.3	5.9	20.2
Number of Rooms Air-Conditioned in Summer 1997						
One or Two	17.7	9.9	8.5	12.9	10.3	11.1
Three	11.2	11.7	10.8	9.0	15.0	9.8
Four	15.7	15.9	17.1	16.9	13.1	8.5
Five or More	54.2	62.1	62.9	61.2	61.2	3.8
Percentage of Rooms Air-Conditioned						
100%	68.3	76.6	75.0	75.3	80.2	2.5
50% to 99%	15.5	14.9	16.7	14.2	12.1	8.6
25% to 49%	9.5	5.9	5.8	6.8	5.7	14.5
1% to 24%	5.4	2.1	1.7	3.8	1.6	20.0
Large Tree(s) that Shade the Home						
Yes	48.2	53.4	51.6	59.9	52.5	5.1
No	50.5	46.2	47.8	40.1	47.1	5.9
Central Air-Conditioner Age (excludes systems for more than one housing unit)						
Less than 5 Years	17.8	21.1	18.7	25.5	22.5	6.7
5 to 9 Years	19.2	21.9	26.2	18.0	16.9	10.0
10 to 19 Years	17.4	20.8	21.3	15.9	22.7	8.0
20 Years or More	5.4	4.5	4.6	5.0	4.1	16.6
Don't Know	3.7	5.1	5.4	Q	4.6	21.2
Central Air-Conditioning Use						
Only a Few Times	17.1	10.7	12.7	10.8	7.1	14.9
Quite a Bit	14.2	13.1	15.4	14.6	8.3	7.2
All Summer	33.2	50.8	48.8	44.8	58.0	4.7
Pays for Electricity for Central Air-Conditioning						
Yes	62.8	72.6	75.2	68.6	70.5	2.8
No	1.5	1.7	1.7	Q	Q	37.5

See footnotes at end of table.

**Table HC4-11b. Air Conditioning by South Census Region,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total U.S.	South Census Region				RSE Row Factors
		Total	Census Division			
			South Atlantic	East South Central	West South Central	
RSE Column Factor:	0.5	0.8	1.1	1.5	1.4	
Age of Most-Used Room Air Conditioner						
Less than 5 Years	11.9	9.3	8.0	10.4	11.0	10.7
5 to 9 Years	9.3	6.9	5.8	7.8	8.2	12.3
10 or 19 Years	7.7	5.8	5.5	7.8	5.1	10.7
20 or More Years	2.7	1.4	1.4	2.4	Q	13.2
Don't Know	2.6	1.5	1.8	Q	Q	21.5
Pays for Electricity for Room Air-Conditioning						
Yes	31.8	23.6	20.9	28.5	25.3	7.3
No	2.4	1.3	Q	1.3	Q	31.4
Room Air-Conditioning Use						
Only a Few Times	17.9	8.3	7.7	12.6	6.8	10.7
Quite a Bit	8.8	6.5	6.2	5.7	7.7	11.8
All Summer	7.5	10.0	8.5	11.4	11.8	11.3

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

• Percentages are calculated on unrounded numbers. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1997 Residential Energy Consumption Survey.

**Table HC4-12b. Air Conditioning by West Census Region,
Percent of U.S. Households, 1997**

Air Conditioning Characteristics	Total U.S.	West Census Region			RSE Row Factors
		Total	Census Division		
			Mountain	Pacific	
RSE Column Factor:	0.4	1.1	1.4	1.5	
Households With Electric Air-Conditioning Equipment					
Households With Electric Air-Conditioning Equipment	100.0	100.0	100.0	100.0	0.0
Central Equipment Not Used	0.5	1.7	Q	Q	34.9
Room Air Conditioners Not Used	1.0	Q	Q	Q	39.1
Households Using Electric Air-Conditioning¹					
Households Using Electric Air-Conditioning ¹	98.7	97.1	97.8	96.7	NE
Type of Electric Air-Conditioning Used					
Central Air-Conditioning ²	64.5	65.8	69.8	63.8	3.9
Without a Heat Pump	50.2	53.0	53.4	52.8	5.2
With a Heat Pump	14.4	12.9	16.5	11.0	16.1
Room Air-Conditioning	34.2	31.2	27.9	32.9	7.7
1 Unit	20.2	25.7	21.5	27.9	9.2
2 Units	9.8	4.6	5.2	4.3	16.0
3 or More Units	4.1	Q	Q	Q	24.9
Number of Rooms Air-Conditioned in Summer 1997					
One or Two	17.7	20.2	19.9	20.4	10.7
Three	11.2	13.3	13.1	13.5	12.8
Four	15.7	14.8	16.3	14.1	13.0
Five or More	54.2	48.7	48.5	48.8	7.1
Percentage of Rooms Air-Conditioned					
100%	68.3	69.4	69.7	69.3	3.5
50% to 99%	15.5	12.6	15.7	11.0	14.6
25% to 49%	9.5	9.8	7.4	11.0	18.1
1% to 24%	5.4	5.3	5.0	5.4	20.6
Large Tree(s) that Shade the Home					
Yes	48.2	36.5	38.6	35.4	5.0
No	50.5	60.6	59.2	61.3	3.5
Central Air-Conditioner Age (excludes systems for more than one housing unit)					
Less than 5 Years	17.8	15.0	21.7	11.6	11.7
5 to 9 Years	19.2	20.3	16.1	22.5	12.5
10 to 19 Years	17.4	18.3	17.7	18.6	10.6
20 Years or More	5.4	8.4	7.1	9.0	20.6
Don't Know	3.7	2.1	Q	Q	26.1
Central Air-Conditioning Use					
Only a Few Times	17.1	27.6	18.7	32.1	10.6
Quite a Bit	14.2	16.5	17.0	16.3	10.9
All Summer	33.2	21.7	34.1	15.4	8.9
Pays for Electricity for Central Air-Conditioning					
Yes	62.8	62.6	65.7	61.0	4.2
No	1.5	2.8	Q	Q	35.9

See footnotes at end of table.

**Table HC4-12b. Air Conditioning by West Census Region,
Percent of U.S. Households, 1997 (Continued)**

Air Conditioning Characteristics	Total U.S.	West Census Region			RSE Row Factors
		Total	Census Division		
			Mountain	Pacific	
RSE Column Factor:	0.4	1.1	1.4	1.5	
Age of Most-Used Room Air Conditioner					
Less than 5 Years	11.9	12.4	9.5	13.8	13.6
5 to 9 Years	9.3	5.1	Q	6.4	16.6
10 or 19 Years	7.7	6.3	6.3	6.3	15.0
20 or More Years	2.7	4.0	Q	3.7	21.0
Don't Know	2.6	3.4	Q	Q	26.8
Pays for Electricity for Room Air-Conditioning					
Yes	31.8	28.5	26.5	29.5	8.0
No	2.4	2.8	Q	3.4	35.4
Room Air-Conditioning Use					
Only a Few Times	17.9	19.4	16.0	21.1	10.5
Quite a Bit	8.8	7.1	7.3	6.9	15.7
All Summer	7.5	4.8	4.7	4.8	14.9

¹ The number of households, where the end use is electric air-conditioning, does **not** include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.

² Includes 642,000 households using room/wall air-conditioners in addition to central air-conditioning. These are excluded from the count of 25.2 million households using only room air-conditioners.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

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