

Table B4. Consumption of Electricity by End Use, 1989

Building Characteristics RSE Column Factor:	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	2,773	96	282	278	24	1,023	56	187	379	449	5.91
Building Floorspace											
(Square Feet)											
1,001 to 5,000	326	15	44	29	8	96	15	33	52	33	6.53
5,001 to 10,000	246	9	33	21	3	83	6	16	41	34	12.33
10,001 to 25,000	381	25	39	27	4	124	8	30	73	52	10.32
25,001 to 50,000	331	Q	34	26	2	127	6	27	46	46	10.91
50,001 to 100,000	433	9	36	40	2	161	6	31	44	104	16.23
100,001 to 200,000	387	12	35	43	2	153	5	19	47	71	12.79
200,001 to 500,000	366	7	35	50	2	151	5	15	39	62	17.96
Over 500,000	303	3	26	43	1	126	4	15	37	46	17.56
Year Constructed											
1899 or Before	25	1	2	3	Q	8	1	3	3	4	17.03
1900 to 1919	75	2	5	7	1	29	1	4	10	18	16.56
1920 to 1945	211	Q	24	29	1	76	5	14	23	25	12.34
1946 to 1959	379	5	35	42	2	158	6	21	53	56	13.12
1960 to 1969	589	15	60	55	5	219	10	32	72	121	15.03
1970 to 1979	730	31	83	70	9	276	16	51	93	101	7.28
1980 to 1983	295	15	30	23	3	98	7	16	47	56	16.84
1984 to 1986	303	11	29	37	2	104	7	25	50	39	12.71
1987 to 1989	167	4	14	12	1	55	3	21	28	28	19.81
BUILDING USE											
Principal Building Activity											
Assembly	186	19	25	25	1	63	1	11	6	35	17.84
Education	217	10	17	24	2	114	1	10	10	28	9.30
Food Sales	105	*	16	8	1	19	9	45	1	7	22.55
Food Service	113	1	19	13	3	27	17	16	2	15	11.37
Health Care	154	3	31	21	2	68	5	6	5	12	13.95
Lodging	138	11	17	20	5	47	14	16	1	6	11.61
Mercantile and Service	550	12	51	26	4	201	4	12	115	124	10.77
Office	781	27	81	133	4	272	3	35	165	62	6.40
Parking Garage	18	Q	*	*	*	8	*	1	1	7	25.81
Public Order and Safety	29	Q	1	2	*	13	*	2	1	8	28.04
Warehouse	243	Q	6	3	1	102	1	24	57	39	18.91
Other	201	Q	14	1	Q	76	1	7	Q	Q	41.44
Vacant	39	1	3	*	*	13	*	2	2	18	19.68
Weekly Operating Hours											
39 or Fewer	71	5	7	10	1	23	1	6	7	12	11.94
40 to 48	440	16	47	43	3	158	2	27	71	73	9.57
49 to 60	478	22	44	52	3	169	3	24	93	69	7.93
61 to 84	522	14	54	52	3	189	7	31	71	100	10.12
85 to 167	485	12	47	38	4	196	14	44	56	72	10.27
168 (Open Continuously)	779	27	83	83	9	289	28	54	81	123	13.40
Workers											
4 or Fewer	294	15	34	28	6	88	11	30	44	39	5.56
5 to 9	258	16	30	21	4	83	8	17	42	37	8.81
10 to 19	238	11	30	20	3	74	8	20	42	31	11.44
20 to 49	401	14	40	27	4	156	9	33	56	61	9.28
50 to 99	348	17	36	25	2	133	7	28	39	60	10.76
100 to 249	478	9	42	43	3	201	6	29	58	87	15.02
250 or More	758	13	71	113	2	288	8	31	99	133	17.20

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Ownership and Occupancy											
Nongovernment Owned	2,113	76	228	209	21	757	48	154	311	310	5.71
Owner Occupied.....	1,575	58	173	166	16	566	38	121	211	227	6.90
Single Establishment	1,182	45	133	114	14	419	34	105	150	168	8.22
Multiple Establishment.....	393	14	40	51	2	146	4	16	61	59	10.38
Nonowner Occupied.....	537	17	54	44	5	192	10	33	100	83	9.12
Single Establishment	265	7	25	21	3	98	6	22	51	32	13.09
Multiple Establishment.....	265	10	29	22	2	91	Q	11	48	48	12.80
Vacant	8	*	1	*	*	3	*	*	*	3	25.16
Government Owned	660	20	54	69	3	266	8	33	68	139	14.93
Federal	132	3	8	17	1	60	1	5	16	21	35.56
State	240	Q	19	22	1	83	5	14	29	Q	28.90
Local	288	12	27	31	2	122	3	15	23	54	13.95
Multibuilding Facility											
Not on Multibuilding Facility.....	1,428	46	148	146	16	510	36	114	213	199	4.25
Part of Multibuilding Facility	1,345	50	134	132	8	513	20	73	166	249	11.09
On Facility with Central Plant	635	13	57	67	3	250	11	38	64	132	20.83
Percent Vacant at Least Three Months											
0	2,062	75	210	194	20	756	47	151	287	322	6.35
1 to 50	583	16	62	71	3	217	6	25	80	103	8.92
51 to 99	64	2	3	7	*	28	Q	4	6	12	33.39
100	63	3	6	6	1	21	2	6	6	12	11.17
Months in Use Out of Past 12 Months											
0 to 8	81	3	8	7	1	25	2	8	10	17	14.45
9 to 11	76	5	7	11	1	32	1	4	4	10	9.75
12	2,616	87	267	260	22	966	53	175	365	422	6.20
LOCATION											
Census Region											
Northeast.....	586	23	35	57	3	227	11	35	92	102	13.99
Midwest	609	26	51	59	6	241	14	48	79	85	9.11
South.....	975	31	135	93	12	341	20	65	122	155	8.65
West.....	604	15	61	69	4	214	11	38	86	106	12.01
Census Division											
Northeast											
New England.....	115	4	7	13	1	46	3	8	16	19	14.84
Middle Atlantic	470	19	27	44	2	182	8	28	76	84	16.91
Midwest											
East North Central.....	399	17	28	37	4	160	9	34	54	56	11.91
West North Central	210	10	24	22	2	80	5	14	25	29	15.15
South											
South Atlantic.....	416	13	61	43	6	147	7	25	55	60	11.69
East South Central.....	215	11	20	17	3	71	6	15	30	41	19.47
West South Central	344	8	54	33	3	123	7	25	37	54	15.08
West											
Mountain.....	179	5	20	24	1	66	4	12	24	23	29.65
Pacific	425	10	41	45	2	148	7	26	62	83	16.21
Metropolitan Status											
Metropolitan	2,366	71	245	244	17	873	44	156	324	390	6.46
Nonmetropolitan.....	407	24	37	34	7	149	12	31	55	58	13.40

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	211	10	10	16	2	84	6	23	30	31	17.08
5,500-7,000 HDD.....	668	25	45	70	5	266	16	47	93	102	14.48
4,000-5,499 HDD.....	706	33	59	72	7	279	11	42	102	101	10.12
Under 4,000 HDD	663	17	70	67	5	225	12	38	93	135	16.48
2,000 CDD or More and --											
Under 4,000 HDD	525	11	98	52	6	169	12	37	60	80	11.41
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	286	10	14	23	2	117	8	29	38	44	15.40
5,500-7,000 HDD.....	852	34	67	91	7	335	18	55	119	126	13.17
4,000-5,499 HDD.....	539	28	38	54	5	212	9	34	81	79	13.41
Under 4,000 HDD	594	13	67	60	4	197	10	34	83	126	16.04
2,000 CDD or More and --											
Under 4,000 HDD	503	11	94	50	6	162	11	36	58	75	11.76
STRUCTURE											
Floors											
1	922	31	110	71	11	322	23	74	142	138	6.91
2	793	29	69	58	5	298	13	59	114	148	10.14
3	320	17	29	35	3	107	5	15	38	Q	21.45
4 to 6	342	9	34	42	2	144	8	20	35	47	13.89
7 or More	396	10	39	73	2	151	7	19	51	44	11.85
Wall Materials											
Masonry	1,740	54	191	168	16	634	40	127	230	279	6.33
Siding or Shingles	150	9	15	12	3	56	4	10	22	19	11.52
Metal Panels	246	10	21	19	2	97	2	15	42	40	19.67
Concrete Panels	397	15	36	38	2	144	6	24	46	84	15.84
Window Glass	146	6	12	26	1	54	Q	7	24	13	22.39
Other	94	2	6	14	*	39	1	4	15	13	22.18
Roof Materials											
Built-Up.....	1,484	48	154	152	12	556	29	92	191	249	8.05
Shingles (Not Wood)	341	14	40	35	5	119	10	31	45	43	8.20
Metal Surfacing	314	10	21	17	3	118	4	20	59	61	15.58
Synthetic or Rubber	416	16	40	45	2	151	6	30	57	68	15.18
Slate or Tile.....	70	3	8	8	1	23	3	6	Q	9	23.25
Concrete.....	71	2	6	12	Q	28	1	3	10	9	32.42
Wooden Materials	29	1	4	4	*	9	1	2	3	4	18.89
Other	48	Q	7	Q	Q	19	1	2	Q	5	38.31
Building Shell Conservation											
Features (Solely or in Combination)											
Roof or Ceiling Insulation	2,201	79	234	223	19	820	45	149	306	326	5.92
Wall Insulation.....	1,547	56	162	148	14	585	30	105	216	229	7.36
Storm or Multiple Glazing.....	1,225	43	123	128	12	455	28	92	180	163	7.24
Tinted, Reflective, or Shading Glass	1,295	39	132	143	9	490	20	76	189	198	7.35
Exterior or Interior Shadings or Awnings	1,381	41	140	149	12	496	27	82	195	239	8.24
Weather Stripping or Caulking.....	2,257	80	230	229	20	829	44	145	310	371	6.64
None of the Above.....	134	4	12	12	1	51	3	11	19	20	10.78

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	2,773	96	282	278	24	1,023	56	187	379	449	5.91
Natural Gas.....	1,824	29	187	195	10	689	41	122	237	313	8.39
Fuel Oil.....	662	10	66	85	5	263	11	40	91	90	15.56
District Heat	444	Q	34	56	Q	165	8	21	46	98	20.92
Other	402	9	30	34	4	152	9	33	42	89	15.70
Energy End Uses (Solely or in Combination)											
Heated Buildings.....	2,676	96	267	268	23	993	54	179	369	427	5.99
Air-Conditioned Buildings.....	2,555	91	282	256	23	933	51	172	342	406	5.78
Buildings with Water Heating.....	2,602	90	263	263	24	958	54	179	347	422	6.17
Buildings with Cooking.....	1,331	32	142	150	12	502	41	96	130	226	9.79
Buildings with Manufacturing.....	291	Q	17	15	1	112	1	19	38	81	17.76
Space-Heating Energy Source											
Electricity	1,039	96	112	83	15	355	20	70	144	144	6.02
Main.....	800	75	92	68	13	263	17	59	120	92	5.83
With Secondary	118	9	13	10	2	37	3	Q	14	16	21.04
Natural Gas Only.....	57	3	6	3	*	18	Q	Q	6	8	30.58
Other Energy Sources or Combinations.....	54	6	5	Q	2	18	1	2	Q	7	38.11
With No Secondary	682	66	78	58	11	226	14	46	106	76	5.36
Secondary	239	21	20	15	1	92	3	11	24	52	15.24
Other Excluding Electricity	1,637	NC	155	185	8	637	34	109	225	284	8.50
Building Not Heated	97	NC	15	10	2	30	2	8	10	21	22.85
Main Space-Heating Energy Source											
Electricity	800	75	92	68	13	263	17	59	120	92	5.83
Natural Gas.....	1,287	9	136	134	6	489	26	81	169	237	8.70
Fuel Oil.....	182	1	11	16	2	72	4	11	35	30	18.86
District Heat	349	Q	25	49	1	139	7	18	37	60	17.80
Other	62	Q	3	5	1	23	Q	Q	9	8	41.49
Air-Conditioning Energy Source											
Electricity	2,373	86	282	230	22	848	47	161	321	376	5.81
Other Excluding Electricity	182	Q	NC	26	1	85	5	11	21	30	17.62
Air-Conditioning Not Performed.....	218	5	NC	22	1	90	4	15	37	43	17.62
Water-Heating Energy Source											
Electricity	1,135	65	122	100	24	381	15	74	175	178	6.36
Other Excluding Electricity	1,466	25	141	163	NC	577	39	105	172	245	8.57
Water Heating Not Performed.....	171	6	18	15	NC	65	1	8	32	26	9.30
HEATING AND COOLING											
Percent Heated											
Not Heated	98	Q	15	10	2	30	2	8	10	21	22.55
1 to 50	210	4	15	11	2	76	3	24	41	33	15.51
51 to 99	496	13	51	54	4	178	9	28	77	83	11.17
100	1,969	79	201	203	17	739	42	127	250	310	7.68
Percent Cooled											
Not Cooled	218	5	NC	22	1	90	4	15	37	43	17.62
1 to 50	461	16	31	29	3	172	8	34	75	93	9.26
51 to 99	783	22	91	88	7	295	16	55	101	109	7.78
100	1,311	53	161	138	13	466	28	83	166	204	9.51

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
Heating Equipment (Solely or in Combination)											
Furnaces.....	608	22	55	45	6	219	15	52	99	95	8.80
Boilers.....	874	19	85	108	5	354	14	56	103	131	9.13
Individual Space Heaters.....	942	50	80	82	9	358	15	54	133	160	9.04
Packaged Heating Units.....	878	31	100	68	7	316	18	50	117	171	10.89
Heat Pumps.....	426	26	49	43	4	148	8	31	57	60	10.47
Air Ducts.....	2,004	58	205	205	15	753	37	125	275	330	7.44
Heating or Reheating Coils.....	1,040	28	97	127	5	401	16	52	123	191	13.64
Fan-Coil Units.....	682	Q	59	79	3	273	10	34	77	129	15.07
Steam or Hot Water Radiators or Baseboards.....	603	12	45	77	3	256	12	34	71	93	10.51
Other.....	117	Q	14	Q	1	41	2	9	14	14	29.18
Cooling Equipment (Solely or in Combination)											
Central Chillers.....	922	28	101	132	5	344	13	42	108	150	13.05
Individual Air Conditioners.....	754	28	75	70	9	269	15	52	87	150	10.36
Packaged Cooling Units.....	1,804	53	203	170	15	655	37	122	244	305	7.32
Heat Pumps.....	467	26	48	40	5	152	7	30	64	96	16.32
Air Ducts.....	1,877	63	205	195	14	696	36	116	246	305	7.31
Fan-Coil Units.....	753	22	76	108	3	288	10	35	89	121	14.29
Other.....	63	1	8	5	*	29	1	3	8	8	33.67
Year Main Central Chiller Installed											
1959 or Before.....	91	Q	11	16	1	32	1	4	10	8	24.98
1960 to 1969.....	252	3	26	29	*	90	2	9	26	Q	31.68
1970 to 1979.....	231	5	24	32	2	89	3	10	29	36	15.03
1980 to 1986.....	245	9	28	41	1	93	4	12	30	26	21.11
1987 to 1989.....	103	2	12	14	Q	40	2	6	12	13	22.77
Year Packaged Cooling System Installed											
1959 or Before.....	79	1	8	9	*	36	1	3	9	11	18.32
1960 to 1969.....	276	6	25	21	1	98	3	13	36	Q	25.88
1970 to 1979.....	547	24	67	53	6	205	12	36	73	73	8.37
1980 to 1986.....	599	19	64	55	5	213	14	47	88	93	10.44
1987 to 1989.....	303	5	37	31	2	104	7	23	38	56	10.68
Computer Area with Separate Air-Conditioning System											
Present in Building.....	1,194	24	114	145	5	452	13	63	181	198	10.59
Not Present.....	1,579	72	168	133	20	570	43	124	198	250	5.77
LIGHTING AND REFRIGERATION											
Percent Lit When Open											
Not Lit.....	8	Q	*	*	*	2	*	1	Q	3	30.06
1 to 50.....	192	14	20	22	4	48	5	15	32	35	9.45
51 to 99.....	813	22	80	85	6	293	12	43	114	157	9.92
100.....	1,760	59	182	171	14	680	39	129	232	253	7.78
Percent Lit When Closed											
Not Lit.....	947	52	100	85	10	309	22	63	135	172	8.73
1 to 50.....	1,566	42	149	160	11	613	25	102	220	244	6.46
51 to 99.....	203	2	23	27	2	81	6	13	22	28	25.13
100.....	57	Q	10	7	Q	20	Q	Q	2	5	36.11
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps.....	1,747	62	180	183	15	685	38	115	206	265	7.40
Fluorescent Lamps.....	2,735	94	279	274	24	1,008	55	185	375	440	5.93
High-Intensity Discharge Lamps.....	982	31	85	95	5	396	13	63	122	173	10.04
Other Lamps.....	28	Q	4	4	*	12	Q	Q	3	3	24.45
High-Efficiency Ballasts.....	1,415	53	141	152	11	490	28	99	213	228	8.82

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	1,495	31	155	160	13	552	44	128	158	253	8.76
Freezers.....	1,424	29	148	150	12	526	43	124	148	244	8.92
Residential											
Refrigerators	2,054	61	202	215	15	794	30	117	292	328	6.59
Freezers.....	651	17	71	63	6	248	17	42	65	121	12.78
Ice-Making Machines.....	1,540	44	173	177	13	562	43	111	164	254	8.62
Refrigerated Vending Machines	2,122	64	213	222	16	816	42	141	283	325	6.03
Water Coolers.....	2,147	70	215	224	14	811	31	124	289	369	7.52
Other	186	Q	21	14	2	55	3	10	22	Q	31.51
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	1,074	42	120	97	13	393	24	67	147	170	6.04
With Thermostats	986	39	110	89	12	362	22	58	135	160	6.88
Any Control of Cooling	1,094	44	130	100	14	394	25	68	148	171	6.20
With Thermostats	1,010	42	120	91	12	363	23	62	135	161	7.31
Reduced Use During Off-Hours											
Heating Only	216	7	8	21	2	85	5	15	33	40	18.35
Cooling Only	202	Q	24	18	2	69	5	11	30	36	14.97
Heating and Cooling	1,671	62	174	178	13	616	27	98	233	270	6.73
Computerized Energy Management and Control System											
Present in Building.....	896	19	93	115	4	356	14	56	99	139	9.52
Controls Heating and Cooling	866	19	90	113	3	344	14	53	96	133	9.73
Controls Lighting	223	4	21	22	1	88	4	16	26	42	18.15
Controls Other	160	3	22	19	1	62	3	10	16	25	15.51
Other Energy Management											
Regular HVAC Maintenance.....	2,328	77	234	241	18	870	44	153	307	383	6.59
Participated in Utility Conservation Program.....	584	27	60	75	4	214	11	40	71	83	7.74

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

NF = No applicable RSE row/column factor.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B5. Energy End-Use Intensities for Electricity, 1989

Building Characteristics RSE Column Factor:	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	45.0	1.6	4.6	4.5	0.4	16.6	0.9	3.0	6.2	7.3	4.56
Building Floorspace (Square Feet)											
1,001 to 5,000	50.8	2.4	6.8	4.5	1.3	15.0	2.3	5.2	8.1	5.1	5.81
5,001 to 10,000	39.1	1.5	5.2	3.3	.5	13.2	.9	2.6	6.5	5.4	11.89
10,001 to 25,000	38.2	2.5	3.9	2.7	.4	12.5	.8	3.0	7.3	5.2	7.99
25,001 to 50,000	38.2	1.9	3.9	3.0	.3	14.7	.7	3.1	5.3	5.3	8.59
50,001 to 100,000	48.6	1.0	4.0	4.4	.2	18.1	.7	3.4	5.0	11.7	15.70
100,001 to 200,000	47.1	1.4	4.2	5.3	.2	18.7	.7	2.3	5.7	8.6	9.75
200,001 to 500,000	52.3	1.0	5.0	7.1	.2	21.6	.7	2.2	5.6	8.8	14.99
Over 500,000	50.0	.5	4.4	7.1	.1	20.8	.7	2.5	6.2	7.6	11.45
Year Constructed											
1899 or Before	15.9	.7	1.1	1.6	Q	5.4	.7	1.6	1.9	2.4	10.91
1900 to 1919	19.5	.5	1.2	1.7	.2	7.4	.3	1.0	2.5	4.6	20.87
1920 to 1945	26.7	Q	3.0	3.7	.2	9.7	.7	1.7	3.0	3.2	11.35
1946 to 1959	37.2	.5	3.5	4.2	.2	15.5	.6	2.0	5.2	5.5	11.53
1960 to 1969	49.4	1.3	5.1	4.6	.4	18.3	.8	2.7	6.0	10.2	12.55
1970 to 1979	55.4	2.4	6.3	5.3	.7	20.9	1.2	3.9	7.1	7.7	5.02
1980 to 1983	70.0	3.6	7.1	5.4	.7	23.2	1.6	3.9	11.1	13.4	11.14
1984 to 1986	53.8	1.9	5.1	6.6	.3	18.5	1.3	4.5	8.9	6.8	11.26
1987 to 1989	53.1	1.2	4.6	3.9	.3	17.5	.9	6.7	9.0	9.0	14.96
BUILDING USE											
Principal Building Activity											
Assembly	27.2	2.8	3.6	3.7	.2	9.2	.1	1.6	.9	5.0	16.14
Education	26.9	1.3	2.2	3.0	.2	14.2	.1	1.3	1.3	3.4	5.96
Food Sales	133.0	.3	20.0	10.1	1.7	23.4	11.4	56.5	1.3	8.3	12.75
Food Service	96.5	1.2	16.4	11.0	2.4	23.0	14.9	13.7	1.5	12.5	11.87
Health Care	74.9	1.4	15.1	10.2	1.2	33.0	2.3	3.0	2.6	6.0	5.63
Lodging	39.7	3.3	4.9	5.8	1.5	13.5	4.0	4.5	.4	1.8	10.87
Mercantile and Service	44.5	1.0	4.1	2.1	.3	16.2	.3	1.0	9.3	10.0	7.28
Office	66.2	2.3	6.9	11.3	.3	23.1	.2	2.9	14.0	5.2	6.11
Parking Garage	18.2	Q	.4	.4	.1	8.4	.1	.9	1.1	6.9	14.65
Public Order and Safety	47.0	Q	2.4	3.7	.1	20.8	.2	3.0	2.2	13.8	25.33
Warehouse	27.4	.9	.7	.4	.1	11.6	.1	2.7	6.5	4.5	14.74
Other	131.3	Q	9.1	.4	.3	49.4	.4	4.5	Q	57.7	34.69
Vacant	12.9	.2	.8	.2	.1	4.4	*	.7	.6	5.8	24.40
Weekly Operating Hours											
39 or Fewer	14.9	1.0	1.5	2.1	.2	4.8	.1	1.3	1.4	2.5	10.67
40 to 48	31.8	1.1	3.4	3.1	.2	11.4	.2	2.0	5.1	5.3	5.80
49 to 60	35.8	1.6	3.3	3.9	.2	12.6	.2	1.8	6.9	5.1	7.84
61 to 84	48.5	1.3	5.1	4.8	.3	17.6	.7	2.9	6.6	9.3	8.05
85 to 167	51.7	1.3	5.0	4.1	.5	20.9	1.5	4.7	6.0	7.7	9.14
168 (Open Continuously)	81.7	2.9	8.7	8.7	1.0	30.3	3.0	5.6	8.5	12.9	11.68
Workers											
4 or Fewer	21.7	1.1	2.5	2.1	.4	6.5	.8	2.2	3.2	2.9	7.50
5 to 9	32.5	2.1	3.7	2.6	.6	10.4	1.0	2.2	5.3	4.7	8.27
10 to 19	36.9	1.6	4.6	3.0	.5	11.5	1.2	3.1	6.6	4.8	11.10
20 to 49	41.5	1.5	4.1	2.8	.4	16.2	.9	3.4	5.8	6.4	7.28
50 to 99	47.0	2.3	4.9	3.4	.3	18.0	.9	3.8	5.2	8.1	9.37
100 to 249	70.6	1.4	6.1	6.4	.4	29.7	.9	4.2	8.6	12.9	8.96
250 or More	77.2	1.3	7.2	11.5	.2	29.3	.8	3.1	10.1	13.6	8.56

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
Ownership and Occupancy											
Nongovernment Owned	44.4	1.6	4.8	4.4	0.4	15.9	1.0	3.2	6.5	6.5	4.17
Owner Occupied.....	44.5	1.6	4.9	4.7	.4	16.0	1.1	3.4	5.9	6.4	4.96
Single Establishment	44.5	1.7	5.0	4.3	.5	15.8	1.3	3.9	5.7	6.3	6.69
Multiple Establishment.....	44.4	1.6	4.6	5.8	.2	16.6	.4	1.8	6.8	6.7	4.71
Nonowner Occupied.....	44.4	1.4	4.5	3.6	.4	15.8	.8	2.7	8.3	6.8	7.03
Single Establishment	42.8	1.1	4.0	3.4	.5	15.8	1.0	3.5	8.3	5.2	11.25
Multiple Establishment.....	50.6	2.0	5.5	4.3	.3	17.4	.7	2.0	9.2	9.2	7.76
Vacant	11.2	.2	1.1	.3	.1	4.4	*	.7	.6	3.7	23.46
Government Owned	47.1	1.4	3.9	4.9	.2	19.0	.6	2.4	4.9	9.9	13.06
Federal	69.4	1.7	4.2	8.7	.5	31.5	.4	2.6	8.5	11.3	17.87
State	62.1	1.1	4.9	5.6	.2	21.5	1.2	3.6	7.5	Q	27.97
Local	35.0	1.5	3.3	3.7	.2	14.8	.3	1.8	2.8	6.5	10.86
Multibuilding Facility											
Not on Multibuilding Facility.....	39.1	1.3	4.0	4.0	.4	14.0	1.0	3.1	5.8	5.5	3.49
Part of Multibuilding Facility.....	53.7	2.0	5.4	5.3	.3	20.5	.8	2.9	6.6	10.0	8.23
On Facility with Central Plant	76.5	1.5	6.9	8.0	.3	30.2	1.4	4.6	7.7	15.9	15.60
Percent Vacant at Least Three Months											
0	48.3	1.7	4.9	4.5	.5	17.7	1.1	3.5	6.7	7.5	5.74
1 to 50	47.0	1.3	5.0	5.7	.2	17.5	.5	2.0	6.4	8.3	4.89
51 to 99	18.6	Q	1.0	1.9	.1	8.2	Q	1.3	1.8	3.4	24.80
100	21.1	1.0	2.0	2.1	.4	7.1	.5	2.1	1.9	3.9	9.94
Months in Use Out of Past 12 Months											
0 to 8	24.4	1.0	2.3	2.1	.3	7.7	.7	2.4	2.9	5.0	15.78
9 to 11	20.2	1.4	1.9	3.0	.2	8.4	.3	1.1	1.1	2.8	7.80
12	48.0	1.6	4.9	4.8	.4	17.7	1.0	3.2	6.7	7.7	4.88
LOCATION											
Census Region											
Northeast.....	43.9	1.7	2.6	4.3	.2	17.1	.8	2.6	6.9	7.7	11.20
Midwest	38.8	1.7	3.3	3.7	.4	15.3	.9	3.1	5.0	5.4	6.11
South.....	45.9	1.5	6.4	4.4	.6	16.1	.9	3.1	5.8	7.3	4.32
West.....	53.3	1.4	5.4	6.1	.3	18.9	1.0	3.4	7.6	9.4	11.62
Census Division											
Northeast											
New England.....	36.9	1.2	2.4	4.0	.2	14.6	.9	2.4	5.1	6.0	9.87
Middle Atlantic	46.1	1.9	2.7	4.3	.2	17.8	.8	2.7	7.4	8.2	13.83
Midwest											
East North Central.....	37.9	1.6	2.6	3.5	.4	15.2	.9	3.3	5.1	5.4	8.31
West North Central	40.5	1.8	4.6	4.2	.3	15.5	1.0	2.7	4.8	5.6	8.46
South											
South Atlantic.....	43.2	1.3	6.3	4.5	.6	15.2	.7	2.6	5.7	6.2	6.69
East South Central.....	51.0	2.6	4.8	4.1	.8	16.9	1.4	3.6	7.1	9.8	15.25
West South Central	46.7	1.0	7.3	4.5	.4	16.7	1.0	3.4	5.1	7.3	8.48
West											
Mountain.....	42.8	1.3	4.7	5.8	.3	15.8	.9	2.8	5.8	5.5	14.73
Pacific	59.5	1.4	5.7	6.3	.3	20.7	1.0	3.7	8.7	11.6	15.04
Metropolitan Status											
Metropolitan	47.5	1.4	4.9	4.9	.3	17.5	.9	3.1	6.5	7.8	5.01
Nonmetropolitan.....	34.7	2.1	3.1	2.9	.6	12.7	1.0	2.6	4.7	5.0	10.12

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	42.4	1.9	2.0	3.3	0.4	16.9	1.1	4.6	6.1	6.2	10.51
5,500-7,000 HDD	38.2	1.4	2.5	4.0	.3	15.2	.9	2.7	5.3	5.8	9.21
4,000-5,499 HDD	46.9	2.2	3.9	4.8	.4	18.6	.7	2.8	6.8	6.7	8.21
Under 4,000 HDD	52.7	1.3	5.6	5.3	.4	17.9	1.0	3.0	7.4	10.7	12.65
2,000 CDD or More and --											
Under 4,000 HDD	45.7	1.0	8.5	4.5	.5	14.7	1.0	3.2	5.3	7.0	8.02
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	38.1	1.4	1.9	3.1	.3	15.6	1.0	3.8	5.1	5.8	10.86
5,500-7,000 HDD	39.5	1.6	3.1	4.2	.3	15.6	.8	2.6	5.5	5.8	7.07
4,000-5,499 HDD	53.3	2.7	3.8	5.3	.5	21.0	.8	3.3	8.0	7.8	8.61
Under 4,000 HDD	50.6	1.1	5.7	5.1	.4	16.8	.9	2.9	7.1	10.7	13.48
2,000 CDD or More and --											
Under 4,000 HDD	47.1	1.0	8.8	4.7	.5	15.1	1.1	3.4	5.4	7.0	7.50
STRUCTURE											
Floors											
1	40.8	1.4	4.9	3.1	.5	14.3	1.0	3.3	6.3	6.1	4.77
2	50.1	1.8	4.4	3.6	.3	18.8	.8	3.7	7.2	9.4	7.48
3	37.6	2.0	3.5	4.1	.4	12.6	.5	1.8	4.4	Q	22.47
4 to 6	41.6	1.1	4.1	5.1	.3	17.5	1.0	2.4	4.3	5.8	9.33
7 or More	61.9	1.5	6.2	11.4	.3	23.7	1.0	3.0	7.9	6.9	5.70
Wall Materials											
Masonry	42.3	1.3	4.6	4.1	.4	15.4	1.0	3.1	5.6	6.8	5.31
Siding or Shingles	33.2	1.9	3.4	2.7	.7	12.3	.9	2.2	5.0	4.2	11.44
Metal Panels	45.7	1.8	3.8	3.5	.3	18.0	.4	2.8	7.8	7.4	15.92
Concrete Panels	55.7	2.1	5.1	5.4	.3	20.3	.9	3.4	6.5	11.8	10.31
Window Glass	76.2	3.2	6.5	13.7	.3	28.0	Q	3.9	12.7	6.9	12.51
Other	63.5	1.6	4.3	9.7	.2	26.0	.5	2.5	9.8	8.9	12.78
Roof Materials											
Built-Up	49.0	1.6	5.1	5.0	.4	18.4	1.0	3.0	6.3	8.2	6.80
Shingles (Not Wood)	32.2	1.3	3.7	3.3	.5	11.2	1.0	3.0	4.2	4.1	5.48
Metal Surfacing	40.3	1.3	2.7	2.2	.3	15.1	.5	2.5	7.6	7.9	14.77
Synthetic or Rubber	60.2	2.4	5.8	6.5	.3	21.8	.9	4.4	8.3	9.9	9.42
Slate or Tile	27.3	1.1	3.3	3.0	.3	8.9	1.1	2.2	Q	3.5	23.08
Concrete	38.0	Q	3.4	6.4	Q	14.7	.5	1.8	5.1	4.9	12.65
Wooden Materials	41.8	1.6	6.3	5.2	.4	13.4	1.6	3.5	3.7	6.1	13.50
Other	56.7	Q	8.2	7.3	Q	22.7	1.5	2.5	5.9	5.5	23.33
Building Shell Conservation											
Features (Solely or in Combination)											
Roof or Ceiling Insulation	49.4	1.8	5.3	5.0	.4	18.4	1.0	3.3	6.9	7.3	4.02
Wall Insulation	52.6	1.9	5.5	5.0	.5	19.9	1.0	3.6	7.4	7.8	4.74
Storm or Multiple Glazing	51.1	1.8	5.1	5.3	.5	19.0	1.2	3.8	7.5	6.8	4.88
Tinted, Reflective, or Shading Glass	59.1	1.8	6.0	6.5	.4	22.4	.9	3.4	8.6	9.0	5.20
Exterior or Interior Shadings or Awnings	53.1	1.6	5.4	5.7	.5	19.0	1.0	3.1	7.5	9.2	5.95
Weather Stripping or Caulking	50.9	1.8	5.2	5.2	.5	18.7	1.0	3.3	7.0	8.4	5.05
None of the Above	19.5	.7	1.7	1.8	.2	7.4	.5	1.7	2.8	2.9	13.74

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	45.0	1.6	4.6	4.5	0.4	16.6	0.9	3.0	6.2	7.3	4.56
Natural Gas.....	44.4	.7	4.6	4.7	.2	16.8	1.0	3.0	5.8	7.6	6.03
Fuel Oil.....	52.6	.8	5.2	6.7	.4	20.9	.9	3.2	7.2	7.2	13.24
District Heat	67.5	Q	5.1	8.5	Q	25.0	1.3	3.2	7.0	15.0	15.74
Other	50.2	1.2	3.7	4.2	.4	19.0	1.1	4.1	5.3	11.1	11.91
Energy End Uses (Solely or in Combination)											
Heated Buildings.....	46.3	1.7	4.6	4.6	.4	17.2	.9	3.1	6.4	7.4	4.59
Air-Conditioned Buildings.....	49.4	1.8	5.4	4.9	.4	18.0	1.0	3.3	6.6	7.8	4.44
Buildings with Water Heating.....	48.6	1.7	4.9	4.9	.5	17.9	1.0	3.3	6.5	7.9	4.69
Buildings with Cooking.....	56.3	1.4	6.0	6.4	.5	21.2	1.7	4.1	5.5	9.6	6.94
Buildings with Manufacturing.....	52.1	Q	3.0	2.7	.2	20.1	.2	3.4	6.7	14.5	11.71
Space-Heating Energy Source											
Electricity	55.6	5.1	6.0	4.5	.8	19.0	1.1	3.7	7.7	7.7	4.12
Main.....	59.5	5.6	6.8	5.1	1.0	19.6	1.3	4.4	8.9	6.8	4.80
With Secondary	59.0	4.5	6.7	5.1	1.1	18.5	1.6	Q	7.3	7.9	12.17
Natural Gas Only.....	50.0	2.7	5.5	2.6	.4	15.6	Q	Q	4.9	7.1	22.27
Other Energy Sources or Combinations.....	69.0	7.4	7.0	6.8	2.2	22.4	1.0	2.8	10.1	9.4	12.16
With No Secondary	59.6	5.8	6.8	5.1	1.0	19.8	1.2	4.0	9.2	6.7	5.21
Secondary	45.5	3.9	3.8	2.9	.3	17.5	.5	2.1	4.5	9.9	12.13
Other Excluding Electricity	41.8	NC	4.0	4.7	.2	16.3	.9	2.8	5.8	7.2	6.70
Building Not Heated	26.0	NC	3.9	2.6	.4	8.0	.5	2.1	2.7	5.6	21.16
Main Space-Heating Energy Source											
Electricity	59.5	5.6	6.8	5.1	1.0	19.6	1.3	4.4	8.9	6.8	4.80
Natural Gas.....	41.4	.3	4.4	4.3	.2	15.7	.8	2.6	5.4	7.6	7.13
Fuel Oil.....	32.6	.2	1.9	2.9	.3	12.9	.7	2.0	6.3	5.3	15.62
District Heat	58.6	Q	4.2	8.2	.2	23.3	1.2	3.1	6.2	10.0	12.47
Other	31.4	Q	1.7	2.4	.3	11.5	Q	Q	4.6	3.9	35.83
Air-Conditioning Energy Source											
Electricity	49.5	1.8	5.9	4.8	.5	17.7	1.0	3.4	6.7	7.9	4.66
Other Excluding Electricity	47.2	Q	NC	6.7	.1	22.0	1.3	2.9	5.4	7.7	9.25
Air-Conditioning Not Performed.....	22.3	.5	NC	2.3	.2	9.2	.4	1.5	3.8	4.4	17.27
Water-Heating Energy Source											
Electricity	52.8	3.0	5.7	4.7	1.1	17.7	.7	3.5	8.2	8.3	4.85
Other Excluding Electricity	45.7	.8	4.4	5.1	NC	18.0	1.2	3.3	5.4	7.6	7.58
Water Heating Not Performed.....	21.4	.7	2.3	1.9	NC	8.1	.2	1.0	4.0	3.3	8.70
HEATING AND COOLING											
Percent Heated											
Not Heated	25.6	Q	3.8	2.6	.4	7.9	.5	2.1	2.7	5.6	21.16
1 to 50	22.5	.4	1.6	1.2	.2	8.1	.3	2.6	4.5	3.6	13.82
51 to 99	57.3	1.5	5.8	6.2	.5	20.5	1.0	3.2	8.9	9.6	6.67
100	49.5	2.0	5.1	5.1	.4	18.6	1.0	3.2	6.3	7.8	5.50
Percent Cooled											
Not Cooled	22.3	.5	NC	2.3	.2	9.2	.4	1.5	3.8	4.4	17.27
1 to 50	25.9	.9	1.7	1.6	.2	9.6	.4	1.9	4.2	5.2	7.78
51 to 99	59.6	1.7	6.9	6.7	.5	22.5	1.2	4.2	7.7	8.3	5.51
100	63.0	2.5	7.7	6.6	.6	22.4	1.3	4.0	8.0	9.8	6.82

See footnotes at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
RSE Column Factor:											
Heating Equipment (Solely or in Combination)											
Furnaces.....	39.0	1.4	3.5	2.9	0.4	14.1	0.9	3.4	6.4	6.1	6.69
Boilers.....	44.0	.9	4.3	5.5	.2	17.8	.7	2.8	5.2	6.6	7.21
Individual Space Heaters.....	41.8	2.2	3.5	3.6	.4	15.9	.7	2.4	5.9	7.1	5.96
Packaged Heating Units.....	56.3	2.0	6.4	4.4	.5	20.3	1.1	3.2	7.5	10.9	8.36
Heat Pumps.....	51.0	3.1	5.9	5.1	.5	17.7	1.0	3.7	6.9	7.2	7.31
Air Ducts.....	53.8	1.6	5.5	5.5	.4	20.2	1.0	3.4	7.4	8.9	5.08
Heating or Reheating Coils.....	66.3	1.8	6.2	8.1	.3	25.6	1.0	3.3	7.9	12.2	7.39
Fan-Coil Units.....	57.6	Q	5.0	6.7	.3	23.0	.9	2.9	6.5	10.9	12.44
Steam or Hot Water Radiators or Baseboards.....	38.2	.8	2.9	4.9	.2	16.2	.7	2.2	4.5	5.9	8.42
Other.....	79.5	Q	9.2	12.2	.6	27.8	1.6	6.0	9.3	9.3	19.54
Cooling Equipment (Solely or in Combination)											
Central Chillers.....	65.7	2.0	7.2	9.4	.3	24.5	.9	3.0	7.7	10.7	8.69
Individual Air Conditioners.....	39.2	1.5	3.9	3.6	.5	14.0	.8	2.7	4.5	7.8	10.70
Packaged Cooling Units.....	51.9	1.5	5.8	4.9	.4	18.9	1.1	3.5	7.0	8.8	4.63
Heat Pumps.....	59.7	3.3	6.1	5.1	.6	19.4	.9	3.9	8.1	12.2	16.07
Air Ducts.....	54.9	1.9	6.0	5.7	.4	20.4	1.0	3.4	7.2	8.9	4.98
Fan-Coil Units.....	69.8	2.1	7.0	10.0	.3	26.7	1.0	3.2	8.3	11.2	10.01
Other.....	43.2	.6	5.5	3.3	.3	19.7	.4	1.8	5.7	5.8	15.18
Year Main Central Chiller Installed											
1959 or Before.....	61.8	Q	7.1	10.8	.3	21.7	.8	2.5	7.0	5.6	17.17
1960 to 1969.....	67.8	.9	7.0	7.7	.1	24.3	.6	2.6	7.0	Q	29.29
1970 to 1979.....	65.4	1.4	6.9	9.2	.5	25.2	.9	3.0	8.2	10.3	12.80
1980 to 1986.....	69.6	2.6	7.9	11.8	.3	26.5	1.1	3.5	8.7	7.4	11.59
1987 to 1989.....	57.1	1.0	6.8	7.8	Q	22.1	1.1	3.6	6.6	7.5	16.61
Year Packaged Cooling System Installed											
1959 or Before.....	45.4	.4	4.9	5.3	.1	20.7	.3	1.8	5.3	6.6	14.05
1960 to 1969.....	57.0	1.1	5.2	4.4	.3	20.3	.7	2.6	7.5	Q	22.69
1970 to 1979.....	52.3	2.2	6.4	5.0	.5	19.5	1.2	3.4	6.9	7.0	6.37
1980 to 1986.....	52.9	1.7	5.7	4.9	.4	18.8	1.2	4.2	7.8	8.2	8.89
1987 to 1989.....	47.7	.7	5.8	4.9	.4	16.3	1.1	3.7	5.9	8.8	8.70
Computer Area with Separate Air-Conditioning System											
Present in Building.....	71.6	1.4	6.8	8.7	.3	27.1	.8	3.8	10.9	11.9	6.79
Not Present.....	35.2	1.6	3.7	3.0	.4	12.7	1.0	2.8	4.4	5.6	4.58
LIGHTING AND REFRIGERATION											
Percent Lit When Open											
Not Lit.....	10.5	Q	.6	.5	.1	2.5	.1	.8	1.6	4.3	26.00
1 to 50.....	17.7	1.3	1.8	2.0	.3	4.4	.4	1.4	2.9	3.2	9.47
51 to 99.....	48.0	1.3	4.7	5.0	.4	17.3	.7	2.5	6.7	9.3	7.88
100.....	53.3	1.8	5.5	5.2	.4	20.6	1.2	3.9	7.0	7.7	4.72
Percent Lit When Closed											
Not Lit.....	35.8	1.9	3.8	3.2	.4	11.7	.8	2.4	5.1	6.5	8.84
1 to 50.....	49.2	1.3	4.7	5.0	.4	19.3	.8	3.2	6.9	7.7	4.53
51 to 99.....	88.1	Q	10.1	11.5	.7	35.0	2.5	5.7	9.7	12.0	18.57
100.....	57.0	.3	10.2	6.6	Q	20.0	Q	Q	1.8	5.2	29.63
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps.....	45.1	1.6	4.6	4.7	.4	17.7	1.0	3.0	5.3	6.8	5.60
Fluorescent Lamps.....	46.4	1.6	4.7	4.7	.4	17.1	.9	3.1	6.4	7.5	4.57
High-Intensity Discharge Lamps.....	54.0	1.7	4.7	5.2	.2	21.8	.7	3.5	6.7	9.5	7.76
Other Lamps.....	55.1	Q	7.2	7.0	.6	22.7	Q	Q	5.2	5.9	15.06
High-Efficiency Ballasts.....	58.6	2.2	5.8	6.3	.4	20.3	1.2	4.1	8.8	9.5	6.27

See footnotes at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics RSE Column Factor:	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil- ation	Water Heating	Lighting	Cooking	Refrig- eration	Office Equip- ment	Other	
	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	60.7	1.3	6.3	6.5	0.5	22.4	1.8	5.2	6.4	10.3	5.61
Freezers.....	65.9	1.3	6.8	6.9	.6	24.3	2.0	5.7	6.9	11.3	4.61
Residential											
Refrigerators	46.5	1.4	4.6	4.9	.3	18.0	.7	2.6	6.6	7.4	5.31
Freezers.....	52.4	1.4	5.7	5.1	.5	20.0	1.4	3.4	5.3	9.8	11.74
Ice-Making Machines.....	65.8	1.9	7.4	7.6	.6	24.0	1.9	4.8	7.0	10.8	5.73
Refrigerated Vending Machines	54.7	1.6	5.5	5.7	.4	21.0	1.1	3.6	7.3	8.4	3.80
Water Coolers.....	50.2	1.6	5.0	5.2	.3	19.0	.7	2.9	6.7	8.6	5.26
Other	132.0	Q	14.9	9.8	1.4	39.0	2.3	7.4	15.5	Q	33.37
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	39.7	1.5	4.4	3.6	.5	14.5	.9	2.5	5.4	6.3	4.79
With Thermostats	39.8	1.6	4.4	3.6	.5	14.6	.9	2.4	5.5	6.4	5.75
Any Control of Cooling	41.6	1.7	5.0	3.8	.5	15.0	.9	2.6	5.6	6.5	4.68
With Thermostats	42.0	1.7	5.0	3.8	.5	15.1	.9	2.6	5.6	6.7	5.30
Reduced Use During Off-Hours											
Heating Only	30.3	1.0	1.1	2.9	.3	12.0	.7	2.1	4.6	5.5	17.47
Cooling Only	49.1	Q	5.7	4.3	.6	16.8	1.1	2.7	7.4	8.8	16.60
Heating and Cooling	43.2	1.6	4.5	4.6	.3	15.9	.7	2.5	6.0	7.0	5.61
Computerized Energy Management and Control System											
Present in Building.....	62.6	1.4	6.5	8.1	.3	24.9	1.0	3.9	6.9	9.7	4.49
Controls Heating and Cooling	62.9	1.4	6.6	8.2	.2	25.0	1.0	3.9	7.0	9.7	4.47
Controls Lighting	58.3	1.0	5.5	5.7	.1	23.0	1.1	4.1	6.7	10.9	9.28
Controls Other	69.2	1.1	9.3	8.2	.3	27.0	1.3	4.4	7.0	10.6	6.57
Other Energy Management											
Regular HVAC Maintenance.....	54.2	1.8	5.5	5.6	.4	20.3	1.0	3.6	7.2	8.9	4.76
Participated in Utility Conservation Program.....	53.9	2.5	5.5	7.0	.4	19.7	1.0	3.7	6.5	7.7	5.69

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

NF = No applicable RSE row/column factor.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B6. End-Use Consumption Percentages for Electricity, 1989

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
All Buildings	100	3	10	10	1	37	2	7	14	16
Building Floorspace (Square Feet)										
1,001 to 5,000	100	5	13	9	3	30	5	10	16	10
5,001 to 10,000	100	4	13	9	1	34	2	7	17	14
10,001 to 25,000	100	6	10	7	1	33	2	8	19	14
25,001 to 50,000	100	5	10	8	1	38	2	8	14	14
50,001 to 100,000	100	2	8	9	*	37	1	7	10	24
100,001 to 200,000	100	3	9	11	1	40	1	5	12	18
200,001 to 500,000	100	2	10	14	*	41	1	4	11	17
Over 500,000	100	1	9	14	*	42	1	5	12	15
Year Constructed										
1899 or Before	100	4	7	10	3	34	4	10	12	15
1900 to 1919	100	3	6	9	1	38	1	5	13	24
1920 to 1945	100	Q	11	14	1	36	3	6	11	12
1946 to 1959	100	1	9	11	1	42	1	5	14	15
1960 to 1969	100	3	10	9	1	37	2	5	12	21
1970 to 1979	100	4	11	10	1	38	2	7	13	14
1980 to 1983	100	5	10	8	1	33	2	6	16	19
1984 to 1986	100	4	9	12	1	34	2	8	17	13
1987 to 1989	100	2	9	7	1	33	2	13	17	17
BUILDING USE										
Principal Building Activity										
Assembly	100	10	13	14	1	34	*	6	3	19
Education	100	5	8	11	1	53	*	5	5	13
Food Sales	100	*	15	8	1	18	9	42	1	6
Food Service	100	1	17	11	2	24	15	14	2	13
Health Care	100	2	20	14	2	44	3	4	4	8
Lodging	100	8	12	15	4	34	10	11	1	5
Mercantile and Service	100	2	9	5	1	37	1	2	21	23
Office	100	3	10	17	*	35	*	4	21	8
Parking Garage	100	Q	2	2	1	46	*	5	6	38
Public Order and Safety	100	Q	5	8	*	44	*	6	5	29
Warehouse	100	3	2	1	*	42	1	10	24	16
Other	100	Q	7	*	*	38	*	3	6	44
Vacant	100	2	6	1	*	34	*	6	5	45
Weekly Operating Hours										
39 or Fewer	100	7	10	14	2	32	1	9	9	17
40 to 48	100	4	11	10	1	36	1	6	16	17
49 to 60	100	5	9	11	1	35	1	5	19	14
61 to 84	100	3	10	10	1	36	1	6	14	19
85 to 167	100	3	10	8	1	40	3	9	12	15
168 (Open Continuously)	100	4	11	11	1	37	4	7	10	16
Workers										
4 or Fewer	100	5	11	10	2	30	4	10	15	13
5 to 9	100	6	11	8	2	32	3	7	16	14
10 to 19	100	4	13	8	1	31	3	8	18	13
20 to 49	100	4	10	7	1	39	2	8	14	15
50 to 99	100	5	10	7	1	38	2	8	11	17
100 to 249	100	2	9	9	1	42	1	6	12	18
250 or More	100	2	9	15	*	38	1	4	13	18

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
Ownership and Occupancy										
Nongovernment Owned	100	4	11	10	1	36	2	7	15	15
Owner Occupied.....	100	4	11	11	1	36	2	8	13	14
Single Establishment	100	4	11	10	1	35	3	9	13	14
Multiple Establishment.....	100	4	10	13	*	37	1	4	15	15
Nonowner Occupied.....	100	3	10	8	1	36	2	6	19	15
Single Establishment	100	3	9	8	1	37	2	8	19	12
Multiple Establishment.....	100	4	11	8	1	34	1	4	18	18
Vacant	100	2	10	2	1	39	*	6	6	33
Government Owned	100	3	8	10	1	40	1	5	10	21
Federal	100	Q	6	13	Q	45	1	4	12	16
State	100	2	8	9	*	35	2	6	12	26
Local	100	4	9	11	1	42	1	5	8	19
Multibuilding Facility										
Not on Multibuilding Facility.....	100	3	10	10	1	36	3	8	15	14
Part of Multibuilding Facility	100	4	10	10	1	38	1	5	12	19
On Facility with Central Plant	100	2	9	11	*	39	2	6	10	21
Percent Vacant at Least Three Months										
0	100	4	10	9	1	37	2	7	14	16
1 to 50	100	3	11	12	1	37	1	4	14	18
51 to 99	100	3	5	10	*	44	Q	7	10	18
100	100	5	10	10	2	34	3	10	9	19
Months in Use Out of Past 12 Months										
0 to 8	100	4	10	9	1	31	3	10	12	20
9 to 11	100	7	9	15	1	42	1	6	5	14
12	100	3	10	10	1	37	2	7	14	16
LOCATION										
Census Region										
Northeast.....	100	4	6	10	1	39	2	6	16	17
Midwest	100	4	8	10	1	39	2	8	13	14
South.....	100	3	14	10	1	35	2	7	13	16
West.....	100	3	10	11	1	35	2	6	14	18
Census Division										
Northeast										
New England	100	3	6	11	1	40	2	7	14	16
Middle Atlantic	100	4	6	9	1	39	2	6	16	18
Midwest										
East North Central.....	100	4	7	9	1	40	2	9	13	14
West North Central	100	5	11	10	1	38	2	7	12	14
South										
South Atlantic.....	100	3	15	10	1	35	2	6	13	14
East South Central.....	100	5	9	8	2	33	3	7	14	19
West South Central	100	2	16	10	1	36	2	7	11	16
West										
Mountain.....	100	3	11	13	1	37	2	7	14	13
Pacific	100	2	10	11	1	35	2	6	15	20
Metropolitan Status										
Metropolitan	100	3	10	10	1	37	2	7	14	17
Nonmetropolitan.....	100	6	9	8	2	37	3	8	14	14

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
Climate Zone: 45-Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD	100	5	5	8	1	40	3	11	14	15
5,500-7,000 HDD	100	4	7	11	1	40	2	7	14	15
4,000-5,499 HDD	100	5	8	10	1	40	2	6	14	14
Under 4,000 HDD	100	2	11	10	1	34	2	6	14	20
2,000 CDD or More and --										
Under 4,000 HDD	100	2	19	10	1	32	2	7	12	15
1989 Degree-Days										
Under 2,000 CDD and --										
Over 7,000 HDD	100	4	5	8	1	41	3	10	13	15
5,500-7,000 HDD	100	4	8	11	1	39	2	6	14	15
4,000-5,499 HDD	100	5	7	10	1	39	2	6	15	15
Under 4,000 HDD	100	2	11	10	1	33	2	6	14	21
2,000 CDD or More and --										
Under 4,000 HDD	100	2	19	10	1	32	2	7	12	15
STRUCTURE										
Floors										
1	100	3	12	8	1	35	3	8	15	15
2	100	4	9	7	1	38	2	7	14	19
3	100	5	9	11	1	33	1	5	12	22
4 to 6	100	3	10	12	1	42	2	6	10	14
7 or More	100	2	10	18	1	38	2	5	13	11
Wall Materials										
Masonry	100	3	11	10	1	36	2	7	13	16
Siding or Shingles	100	6	10	8	2	37	3	7	15	13
Metal Panels	100	4	8	8	1	39	1	6	17	16
Concrete Panels	100	4	9	10	1	36	2	6	12	21
Window Glass	100	4	9	18	*	37	Q	5	17	9
Other	100	3	7	15	*	41	1	4	15	14
Roof Materials										
Built-Up	100	3	10	10	1	38	2	6	13	17
Shingles (Not Wood)	100	4	12	10	2	35	3	9	13	13
Metal Surfacing	100	3	7	6	1	38	1	6	19	20
Synthetic or Rubber	100	4	10	11	1	36	1	7	14	16
Slate or Tile	100	4	12	11	1	33	4	8	14	13
Concrete	100	Q	9	17	Q	39	1	5	13	13
Wooden Materials	100	4	15	12	1	32	4	8	9	15
Other	100	Q	14	13	Q	40	3	4	10	10
Building Shell Conservation										
Features (Solely or in Combination)										
Roof or Ceiling Insulation	100	4	11	10	1	37	2	7	14	15
Wall Insulation	100	4	10	10	1	38	2	7	14	15
Storm or Multiple Glazing	100	4	10	10	1	37	2	8	15	13
Tinted, Reflective, or Shading										
Glass	100	3	10	11	1	38	2	6	15	15
Exterior or Interior Shadings										
or Awnings	100	3	10	11	1	36	2	6	14	17
Weather Stripping or Caulking	100	4	10	10	1	37	2	6	14	16
None of the Above	100	3	9	9	1	38	2	9	14	15

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
ENERGY SOURCES AND END USES										
Energy Sources										
(Solely or in Combination)										
Electricity	100	3	10	10	1	37	2	7	14	16
Natural Gas.....	100	2	10	11	1	38	2	7	13	17
Fuel Oil.....	100	2	10	13	1	40	2	6	14	14
District Heat	100	Q	8	13	*	37	2	5	10	22
Other.....	100	2	7	8	1	38	2	8	10	22
Energy End Uses										
(Solely or in Combination)										
Heated Buildings.....	100	4	10	10	1	37	2	7	14	16
Air-Conditioned Buildings.....	100	4	11	10	1	37	2	7	13	16
Buildings with Water Heating	100	3	10	10	1	37	2	7	13	16
Buildings with Cooking.....	100	2	11	11	1	38	3	7	10	17
Buildings with Manufacturing.....	100	3	6	5	*	38	*	7	13	28
Space-Heating Energy Source										
Electricity	100	9	11	8	1	34	2	7	14	14
Main.....	100	9	11	9	2	33	2	7	15	12
With Secondary	100	8	11	9	2	31	3	11	12	13
Natural Gas Only.....	100	5	11	5	1	31	Q	18	10	14
Other Energy Sources or Combinations.....	100	11	10	10	3	32	2	4	15	14
With No Secondary	100	10	11	8	2	33	2	7	15	11
Secondary	100	9	8	6	1	39	1	5	10	22
Other Excluding Electricity	100	NC	9	11	*	39	2	7	14	17
Building Not Heated	100	NC	15	10	2	31	2	8	10	22
Main Space-Heating Energy Source										
Electricity	100	9	11	9	2	33	2	7	15	12
Natural Gas.....	100	1	11	10	*	38	2	6	13	18
Fuel Oil.....	100	1	6	9	1	40	2	6	19	16
District Heat	100	Q	7	14	*	40	2	5	11	17
Other.....	100	Q	5	8	1	36	Q	19	15	13
Air-Conditioning Energy Source										
Electricity	100	4	12	10	1	36	2	7	14	16
Other Excluding Electricity	100	2	NC	14	*	47	3	6	11	16
Air-Conditioning Not Performed.....	100	2	NC	10	1	41	2	7	17	20
Water-Heating Energy Source										
Electricity	100	6	11	9	2	34	1	7	15	16
Other Excluding Electricity	100	2	10	11	NC	39	3	7	12	17
Water Heating Not Performed.....	100	3	11	9	NC	38	1	5	19	15
HEATING AND COOLING										
Percent Heated										
Not Heated	100	Q	15	10	2	31	2	8	11	22
1 to 50	100	2	7	5	1	36	2	12	20	16
51 to 99	100	3	10	11	1	36	2	6	16	17
100	100	4	10	10	1	38	2	6	13	16
Percent Cooled										
Not Cooled	100	2	NC	10	1	41	2	7	17	20
1 to 50	100	3	7	6	1	37	2	7	16	20
51 to 99	100	3	12	11	1	38	2	7	13	14
100	100	4	12	11	1	36	2	6	13	16

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
Heating Equipment (Solely or in Combination)										
Furnaces.....	100	4	9	7	1	36	2	9	16	16
Boilers.....	100	2	10	12	1	41	2	6	12	15
Individual Space Heaters	100	5	8	9	1	38	2	6	14	17
Packaged Heating Units.....	100	3	11	8	1	36	2	6	13	19
Heat Pumps	100	6	12	10	1	35	2	7	13	14
Air Ducts	100	3	10	10	1	38	2	6	14	16
Heating or Reheating Coils.....	100	3	9	12	*	39	1	5	12	18
Fan-Coil Units	100	2	9	12	*	40	1	5	11	19
Steam or Hot Water Radiators or Baseboards.....	100	2	7	13	*	42	2	6	12	15
Other	100	Q	12	15	1	35	2	8	12	12
Cooling Equipment (Solely or in Combination)										
Central Chillers	100	3	11	14	1	37	1	5	12	16
Individual Air Conditioners	100	4	10	9	1	36	2	7	12	20
Packaged Cooling Units.....	100	3	11	9	1	36	2	7	14	17
Heat Pumps	100	6	10	9	1	32	2	7	14	20
Air Ducts	100	3	11	10	1	37	2	6	13	16
Fan-Coil Units	100	3	10	14	*	38	1	5	12	16
Other	100	1	13	8	1	46	1	4	13	13
Year Main Central Chiller Installed										
1959 or Before	100	Q	12	18	1	35	1	4	11	9
1960 to 1969	100	1	10	11	*	36	1	4	10	26
1970 to 1979	100	2	11	14	1	39	1	5	12	16
1980 to 1986	100	4	11	17	*	38	2	5	12	11
1987 to 1989	100	2	12	14	Q	39	2	6	12	13
Year Packaged Cooling System Installed										
1959 or Before	100	Q	11	12	Q	45	1	4	12	15
1960 to 1969	100	2	9	8	1	36	1	5	13	26
1970 to 1979	100	4	12	10	1	37	2	7	13	13
1980 to 1986	100	3	11	9	1	36	2	8	15	16
1987 to 1989	100	1	12	10	1	34	2	8	12	18
Computer Area with Separate Air-Conditioning System										
Present in Building.....	100	2	10	12	*	38	1	5	15	17
Not Present	100	5	11	8	1	36	3	8	13	16
LIGHTING AND REFRIGERATION										
Percent Lit When Open										
Not Lit	100	Q	5	5	1	24	1	8	15	41
1 to 50	100	7	10	11	2	25	2	8	16	18
51 to 99	100	3	10	10	1	36	2	5	14	19
100	100	3	10	10	1	39	2	7	13	14
Percent Lit When Closed										
Not Lit	100	5	11	9	1	33	2	7	14	18
1 to 50	100	3	9	10	1	39	2	7	14	16
51 to 99	100	1	11	13	1	40	3	6	11	14
100	100	Q	18	12	Q	35	5	Q	3	9
Lighting Equipment (Solely or in Combination)										
Incandescent Lamps	100	4	10	10	1	39	2	7	12	15
Fluorescent Lamps	100	3	10	10	1	37	2	7	14	16
High-Intensity Discharge Lamps	100	3	9	10	*	40	1	6	12	18
Other Lamps	100	2	13	13	1	41	2	8	9	11
High-Efficiency Ballasts	100	4	10	11	1	35	2	7	15	16

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other
Refrigeration Equipment (Solely or in Combination)										
Commercial										
Refrigeration Units.....	100	2	10	11	1	37	3	9	11	17
Freezers.....	100	2	10	11	1	37	3	9	10	17
Residential										
Refrigerators.....	100	3	10	10	1	39	1	6	14	16
Freezers.....	100	3	11	10	1	38	3	6	10	19
Ice-Making Machines.....	100	3	11	11	1	36	3	7	11	16
Refrigerated Vending Machines.....	100	3	10	10	1	38	2	7	13	15
Water Coolers.....	100	3	10	10	1	38	1	6	13	17
Other.....	100	Q	11	7	1	30	2	6	12	Q
ENERGY MANAGEMENT										
Occupant Control										
Any Control of Heating.....	100	4	11	9	1	37	2	6	14	16
With Thermostats.....	100	4	11	9	1	37	2	6	14	16
Any Control of Cooling.....	100	4	12	9	1	36	2	6	14	16
With Thermostats.....	100	4	12	9	1	36	2	6	13	16
Reduced Use During Off-Hours										
Heating Only.....	100	3	4	10	1	40	2	7	15	18
Cooling Only.....	100	4	12	9	1	34	2	5	15	18
Heating and Cooling.....	100	4	10	11	1	37	2	6	14	16
Computerized Energy Management and Control System										
Present in Building.....	100	2	10	13	*	40	2	6	11	15
Controls Heating and Cooling.....	100	2	10	13	*	40	2	6	11	15
Controls Lighting.....	100	2	9	10	*	40	2	7	11	19
Controls Other.....	100	2	13	12	*	39	2	6	10	15
Other Energy Management										
Regular HVAC Maintenance.....	100	3	10	10	1	37	2	7	13	16
Participated in Utility Conservation Program.....	100	5	10	13	1	37	2	7	12	14

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.