

Irradiation Apparatus Manufacturing: 2002

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2002 Economic Census

Manufacturing

Industry Series



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U.S. Department of Commerce
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-- Not applicable for this report.

Table 1. Historical Statistics for the Industry: 2002 and Earlier Years

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year ¹	Com-panies ²	All estab-lish-ments ³	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ⁴	Payroll (\$1,000)	Number ⁴	Hours (1,000)	Wages (\$1,000)				
334517, Irradiation apparatus manufacturing	2002.. 153	169	13 489	796 756	4 654	9 351	193 425	2 338 779	2 098 451	4 395 270	'92 737
	2001.. N	N	12 952	748 097	4 935	10 213	219 624	2 149 975	2 141 791	4 324 647	103 813
	2000.. N	N	13 177	694 270	4 870	10 825	196 160	2 255 270	2 069 833	4 329 236	128 800
	1999.. N	N	12 717	689 773	5 052	11 854	201 819	2 249 883	1 664 919	3 948 766	121 874
	1998.. N	N	13 929	692 336	5 650	12 531	203 784	2 243 374	1 833 998	4 061 936	72 170
	1997.. 134	153	13 547	642 088	5 657	12 299	187 134	2 075 258	1 884 903	3 970 454	75 942

¹Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during the year.

⁴Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 2. Industry Statistics for Selected States: 2002

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments ²		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
	E ¹	Total	With 20 employees or more	Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)					Wages (\$1,000)
334517, Irradiation apparatus manufacturing												
United States	—	169	72	13 489	796 756	4 654	9 351	193 425	2 338 779	2 098 451	4 395 270	'92 737
California	—	33	17	4 880	299 459	1 353	2 376	68 652	766 170	700 695	1 471 739	'33 629
Illinois	—	22	8	1 571	99 496	705	1 377	29 405	283 951	284 137	533 011	'6 877
Massachusetts	—	16	10	2 381	147 690	773	1 751	26 981	344 470	217 539	561 740	'13 568
New Jersey	8	8	3	190	11 134	60	119	2 013	27 365	13 957	41 397	'1 836
New York	1	9	6	419	16 570	256	543	6 982	49 843	31 769	82 560	'1 773
Pennsylvania	9	6	2	140	8 036	46	97	1 501	18 530	15 133	33 866	'637
Wisconsin	—	5	3	301	17 005	103	209	2 985	46 582	23 149	69 693	'2 870

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 3. Detailed Statistics by Industry: 2002

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
334517, Irradiation apparatus manufacturing	
Companies ¹	number.. 153
All establishments ²	number.. 169
Establishments with 1 to 19 employees	number.. 97
Establishments with 20 to 99 employees	number.. 44
Establishments with 100 employees or more	number.. 28
All employees ³	number.. 13 489
Total compensation	\$1,000.. 945 853
Annual payroll	\$1,000.. 796 756
Total fringe benefits	\$1,000.. 149 097
Production workers, average for year	number.. 4 654
Production workers on March 12	number.. 4 777
Production workers on May 12	number.. 4 748
Production workers on August 12	number.. 4 569
Production workers on November 12	number.. 4 505
Production worker hours	1,000.. 9 351
Production worker wages	\$1,000.. 193 425
Total cost of materials	\$1,000.. 2 098 451
Materials, parts, containers, packaging, etc., used	\$1,000.. 1 851 641
Resales	\$1,000.. 214 097
Purchased fuels	\$1,000.. 1 869
Purchased electricity	\$1,000.. 12 701
Contract work	\$1,000.. 18 143
Quantity of electricity purchased for heat and power	1,000 kWh.. 170 186
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -
Total value of shipments	\$1,000.. 4 395 270
Primary products value of shipments	\$1,000.. 3 906 214
Secondary products value of shipments	\$1,000.. 76 673
Total miscellaneous receipts	\$1,000.. 412 383
Value of resales	\$1,000.. 245 820
Contract receipts	\$1,000.. 2 195
Other miscellaneous receipts	\$1,000.. 164 368
Primary products specialization ratio	percent.. 98
Value of primary products shipments made in all industries	\$1,000.. 4 181 036
Value of primary products shipments made in this industry	\$1,000.. 3 906 214
Value of primary products shipments made in other industries	\$1,000.. 274 822
Coverage ratio	percent.. 93
Value added	\$1,000.. 2 338 779
Total inventories, beginning of year	\$1,000.. 706 475
Finished goods inventories	\$1,000.. 201 651
Work-in-process inventories	\$1,000.. 145 357
Materials and supplies inventories	\$1,000.. 359 467
Total inventories, end of year	\$1,000.. 750 311
Finished goods inventories	\$1,000.. 232 237
Work-in-process inventories	\$1,000.. 156 731
Materials and supplies inventories	\$1,000.. 361 343
Gross value of depreciable assets (acquisition costs) at beginning of year	\$1,000.. '1 035 072
Total capital expenditures (new and used)	\$1,000.. '92 737
Buildings and other structures (new and used)	\$1,000.. '16 461
Machinery and equipment (new and used)	\$1,000.. '76 276
Automobiles, trucks, etc., for highway use	\$1,000.. '1 991
Computers and peripheral data processing equipment	\$1,000.. '15 288
All other expenditures for machinery and equipment	\$1,000.. '58 997
Total retirements	\$1,000.. '64 655
Gross value of depreciable assets at end of year	\$1,000.. '1 063 154
Depreciation charges during year	\$1,000.. '94 920
Total rental payments	\$1,000.. 46 943
Buildings and other structures	\$1,000.. 29 646
Machinery and equipment	\$1,000.. 17 297
Total other expenses ⁴	\$1,000.. 127 659
Response coverage ratio ⁵	percent.. 69
Repair and maintenance services of buildings and/or machinery ⁴	\$1,000.. 6 262
Communications services ⁴	\$1,000.. 8 542
Legal services ⁴	\$1,000.. 9 291
Accounting, auditing, and bookkeeping services ⁴	\$1,000.. 2 246
Advertising and promotional services ⁴	\$1,000.. 13 267
Expensed computer hardware and supplies and purchased computer services ⁴	\$1,000.. 3 469
Refuse removal (including hazardous waste) services ⁴	\$1,000.. 417
Management consulting and administrative services ⁴	\$1,000.. 8 016
Taxes and license fees ⁴	\$1,000.. 4 109
All other expenses ⁴	\$1,000.. 72 040

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Based on 2002 Annual Survey of Manufactures (ASM) sample data.

⁵A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 4. Industry Statistics by Employment Size: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E ¹	All establishments ²	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
334517, Irradiation apparatus manufacturing											
All establishments	—	169	13 489	796 756	4 654	9 351	193 425	2 338 779	2 098 451	4 395 270	'92 737
Establishments with—											
1 to 4 employees	9	51	115	5 620	61	113	1 956	13 088	13 024	26 369	'500
5 to 9 employees	7	26	181	10 025	70	145	1 957	28 395	22 671	51 079	'1 867
10 to 19 employees	4	20	271	15 231	103	209	4 325	33 193	25 844	59 268	'1 173
20 to 49 employees	1	23	781	40 918	350	719	12 799	107 659	79 193	182 286	'5 192
50 to 99 employees	2	21	1 531	93 779	531	1 092	19 055	337 088	149 409	482 731	'11 957
100 to 249 employees	—	15	2 407	132 014	1 040	2 091	35 085	372 898	304 404	656 663	'17 341
250 to 499 employees	—	7	h	D	D	D	D	D	D	D	D
500 to 999 employees	—	3	g	D	D	D	D	D	D	D	D
1,000 to 2,499 employees	—	3	3 784	230 791	1 000	1 814	50 391	542 025	573 626	1 130 008	'24 309
2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—
Administrative records ⁴	9	77	404	20 624	183	369	4 619	53 570	52 720	106 290	'2 438

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 5. Industry Statistics by Primary Product Class Specialization: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments ¹	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ²	Payroll (\$1,000)	Number ²	Hours (1,000)	Wages (\$1,000)				
334517	Irradiation apparatus manufacturing . . .	169	13 489	796 756	4 654	9 351	193 425	2 338 779	2 098 451	4 395 270	'92 737
3345170	Irradiation (ionizing radiation) equipment	168	13 470	795 792	4 650	9 345	193 254	2 338 779	2 098 451	4 395 270	'92 737

¹Includes establishments with payroll at any time during the year.

²Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. Products Statistics: 2002 and 1997

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
334517	Irradiation apparatus manufacturing	2002.. N 1997.. N	X X	X X	4 181 036 3 393 643
3345170	Irradiation (ionizing radiation) equipment	2002.. N 1997.. N	X X	X X	4 181 036 3 393 643
33451701	Irradiation (ionizing radiation) equipment (including X-ray, beta ray, gamma ray, and nuclear)	2002.. N 1997.. N	X X	X X	3 994 627 3 286 262
3345170100	Irradiation (ionizing radiation) equipment (including X-ray, beta ray, gamma ray, and nuclear) ¹	2002.. 90 1997.. 74	X X	X X	3 994 627 3 286 262
3345170Y	Irradiation (ionizing radiation) equipment, nsk, total	2002.. N 1997.. N	X X	X X	186 409 107 381
3345170YWW	Irradiation (ionizing radiation) equipment, nsk, for nonadministrative-record establishments	2002.. N 1997.. N	X X	X X	105 497 43 037
3345170YWY	Irradiation (ionizing radiation) equipment, nsk, for administrative-record establishments	2002.. N 1997.. N	X X	X X	80 912 64 344

¹For additional detail, see Current Industrial Report MA334S, Electromedical and Irradiation Equipment.

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997**

[Not applicable for this report.]

Table 7. Materials Consumed by Kind: 2002 and 1997

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
334517	Irradiation apparatus manufacturing		
00900001	Total materials	X	1 851 641
	.....2002..	X	1 552 967
	.....1997..		
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	X	12 187
	.....2002..	X	12 180
	.....1997..		
332000AC	Metal stampings	X	D
	.....2002..	X	19 745
	.....1997..		
33200041	All other fabricated metal products (excluding forgings)	X	77 439
	.....2002..	X	N
	.....1997..		
33210000	Forgings	X	D
	.....2002..	X	N
	.....1997..		
33100035	Castings, rough and semifinished	X	D
	.....2002..	X	7 054
	.....1997..		
33120031	Stainless steel shapes and forms (excluding castings, forgings, and fabricated metal products)	X	8 864
	.....2002..	X	9 555
	.....1997..		
33120043	Other steel shapes and forms (excluding castings, forgings, and fabricated metal products)	X	11 729
	.....2002..	X	7 749
	.....1997..		
331000AJ	Nonferrous metal shapes and forms (excluding castings, forgings, and fabricated metal products)	X	D
	.....2002..	X	9 144
	.....1997..		
33441105	Transmittal, industrial, and special-purpose electron tubes (excluding X-ray)	X	59 723
	.....2002..	X	D
	.....1997..		
33441300	Semiconductors (including transistors, diodes, rectifiers, and integrated circuits), for electronic circuitry	X	50 603
	.....2002..	X	26 499
	.....1997..		
33441400	Capacitors for electronic circuitry	X	6 598
	.....2002..	X	6 847
	.....1997..		
33441500	Resistors for electronic circuitry	X	9 466
	.....2002..	X	9 077
	.....1997..		
33441700	Connectors for electronic circuitry	X	4 918
	.....2002..	X	5 261
	.....1997..		
001900C2	Other electronic components and accessories	X	93 848
	.....2002..	X	71 746
	.....1997..		
331000A1	Insulated wire and cable (excluding magnet wire)	X	27 678
	.....2002..	X	25 860
	.....1997..		
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	10 925
	.....2002..	X	7 681
	.....1997..		
32221001	Paperboard containers, boxes, and corrugated paperboard	X	5 631
	.....2002..	X	8 390
	.....1997..		
00970099	All other materials and components, parts, containers, and supplies	X	423 056
	.....2002..	X	D
	.....1997..		
00971000	Materials, ingredients, containers, and supplies, nsk	X	929 959
	.....2002..	X	627 491
	.....1997..		

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.