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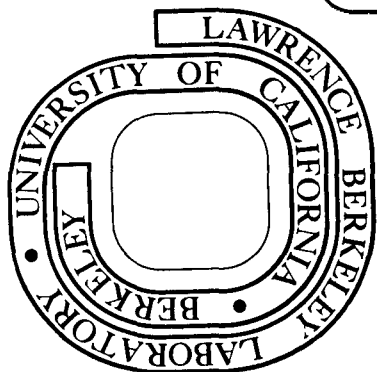
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August 1976

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THE EMISSION SPECTRUM OF CURIUM*

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The curium emission spectrum was observed from 2400 to 11 200 Å using electrodeless lamps as sources. Accurately measured wavelengths of 2034 of the strongest ^{244}Cm lines are reported. The wavelengths, wavenumbers, and relative intensities are given. In addition, Zeeman-effect data, spectrum assignment as neutral or singly ionized lines, isotope shift, and energy-level classifications are given for most of the lines.

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* This work was performed under the auspices of the U. S. Energy Research and Development Administration under contract number W-7405-eng-48

INTRODUCTION

Two early reports^{1,2} on the curium spectrum give about 200 lines between 2516 and 5000 Å and 183 lines between 3050 and 5250 Å. In both investigations, a dc arc was used as an excitation source. The latter paper² reports isotope shifts (^{244}Cm – ^{242}Cm) observed with a large grating spectrograph. The near infrared Cm lines have been observed for the region 8400 to 25 000 Å and reported recently.³ These are the only lists of Cm emission spectrum lines in the literature. We have photographed the curium spectrum emitted by electrodeless lamps with the 9.15-m Paschen-Runge spectrograph at Argonne National Laboratory. Over 13 350 ^{244}Cm lines are accurately measured for the region 2400 to 11 200 Å. We report here 2034 of the strongest of these lines.

The wavelengths listed below should make possible identification of Cm in terrestrial and astrophysical sources suspected of containing this element. The ^{246}Cm – ^{244}Cm isotope shifts should serve to estimate wavelengths of other isotopes, such as ^{247}Cm , which might be in astrophysical objects. We do have evidence from ^{244}Cm – ^{245}Cm – ^{246}Cm – ^{248}Cm isotope-shift studies that staggering does occur. The ^{245}Cm wavelength is closer to the ^{244}Cm than to the ^{246}Cm line. We expect that 1.35 times the ^{246}Cm – ^{244}Cm shift would give an approximate ^{247}Cm wavenumber value when added to the ^{244}Cm wavenumber.

The energy-level analysis of the neutral curium spectrum Cm I has been reported.⁴ The analysis of singly ionized curium Cm II is in progress. In the Cm II analysis, 351 odd and 126 even levels have been determined. These levels allow the classification of 2944 of the 13 350 Cm lines as transitions between these known levels. The classifications made in these analyses are included for the strong lines listed here.

The strong lines of curium are given in the table. The methods for preparation of the sources, photographing and measuring the spectra, and obtaining the spectrum assignment and the Zeeman-effect data are all contained in Reference 4 and references cited there. All spectra were photographed on the Argonne National Laboratory 9.15-m Paschen-Runge spectrograph. The Zeeman-effect spectra were obtained at a field strength of 2.4 T (24 000 G).

Uncertainties

The wavenumbers reported here have a precision or internal consistency from the level analyses of ± 0.02

cm^{-1} , or better, throughout the line list. The corresponding wavelength precision is ± 0.02 Å at 10 000 Å increasing to ± 0.003 Å at 3000 Å. The absolute accuracy of the wavelengths is estimated to be about the same judging from the agreement between the wavelengths measured for iron impurity lines contained on the plates and the interferometric wavelengths determined by Crosswhite.⁵

Acknowledgments

We thank Mark Fred for making available for our use the excellent spectroscopy facilities at Argonne National Laboratory and for his aid in obtaining spectra and for numerous consultations during this investigation. We appreciate the assistance of George Shalimoff in data handling for production of the final listing. Hazards Control personnel, especially Paul Linnes, provided for handling and transporting the highly radioactive samples. Margaret Jepson performed most of the isotope-shift measurements for the 7740- to 3450-Å region.

References

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7. E. F. Worden, R. G. Gutmacher, and J. G. Conway, *Appl. Opt.* **2**, 707 (1963)
8. K. L. Vander Sluis, *J. Opt. Soc. Am.* **46**, 605 (1956)
9. We are indebted to M. Fred of Argonne National Laboratory for the computer program for least-squares reduction of the Zeeman data

EXPLANATION OF TABLE

WAVENUMBER	Wavenumber, in vacuum, in cm^{-1}
WAVELENGTH	Wavelength, in air, in $\text{\AA}$
INT	Intensity. The intensities are eye estimates on an open 0 to 10 000 scale. In this paper only intensities of 100 or more are reported
R	The line is self-reversed in a lamp operated at high metal-atom pressure
W	The line is wide
B	The line is a blend. Most lines marked by a "B" exhibit two Zeeman patterns to indicate a true blend. Some lines are doubly classified by the level analyses but they are not indicated with a B unless there is some evidence other than the classification. For the blends and multiply-classified lines, the wavelength is listed only once and the data observed for the blend or for the other classification are listed next without a wavelength or wavenumber entry. In the case of blends, the intensity estimated from the Zeeman-effect exposures is given
ISOTOPE SHIFT	The isotope shift in wavenumbers. The shift is the ^{246}Cm wavenumber minus the ^{244}Cm wavenumber. Shifts were obtained because the Cm used for the observations contained 95% ^{244}Cm, 3% ^{246}Cm, and small amounts of ^{245}Cm, ^{247}Cm, and ^{248}Cm. The isotope-shift lines were identified by the ratio of the intensities and confirmed for a number of the stronger lines by the presence of identical Zeeman effect for the two lines. For the wavelength region 7730 to 3450 $\text{\AA}$, the isotope shifts are from recent spectra taken with lamps containing the following isotopic compositions of Cm: Lamp No. 1, 96% ^{244}Cm, 3% ^{246}Cm Lamp No. 2, 27% ^{244}Cm, 16% ^{246}Cm, 55% ^{248}Cm Lamp No. 3, 55% ^{244}Cm, 23% ^{245}Cm, 21% ^{246}Cm Measurements of these spectra yielded the ^{244}Cm-^{246}Cm shifts reported for that range. The 11 000- to 7730-$\text{\AA}$ and 3450- to 2430-$\text{\AA}$ ranges remain to be measured The isotope-shift values given to three places have an estimated accuracy of $\pm 0.005 \text{ cm}^{-1}$ but could differ by $\pm 0.02 \text{ cm}^{-1}$ from the true value. Shifts given to two places have ± 0.02 precision. A value given as .0 means 0 ± 0.1
SA	Spectrum assignment obtained by observation of the spectra emitted by electrodeless lamps oper-

EXPLANATION OF TABLE, continued

	ated at low and high metal-atom pressure. The first-spectrum (neutral atom) lines are more intense at high metal-atom pressure while second-spectrum (singly ionized atom) lines are more intense at low metal-atom pressure. ^{6,7} They are indicated by I and II, respectively. Some of the spectrum assignments are from Zeeman effect where identification is possible by examination of the π -pattern components observed. Some lines determined as belonging to one spectrum by the experimental spectrum assignments are classified by the energy-level analysis as transitions in the other spectrum. Thus, the spectrum assignment and energy-level classification will not always agree. The four cases found are indicated by S in the SA column
S	
J-O, J-E	J-values of the odd and even levels combining to yield the line. The first-spectrum J-values are integer and those for the second spectrum are half integer
ZEEMAN DATA g-O, g-E	Observed g's of odd and even levels. Values of g, given to 3 places after the decimal, determined from resolved patterns by least-squares methods. ^{8,9} These values are accurate to about ± 0.003 Lorentz units. Values given to two places were obtained from unresolved patterns by using measurements of A and B with J-values from the line classification in the formulas given in the Figure. These values are accurate to about ± 0.02 Lorentz units. Values given without J-values are the measured A- and/or B-values. If the Zeeman type is 4, the values are the approximate g's of the unknown levels
*	Values preceded by an asterisk are known g-values used to calculate the other g-value from measurements of Δg (the interval between adjacent components)
DG	Values of Δg . These were measured for patterns that were badly blended or were so weak that the pattern could not be measured
TYPE	Type of Zeeman pattern. The types of pattern are illustrated in the Figure
A	$J_1 \neq J_2$ pattern where it was not possible to determine if g_1 was greater than g_2 (Type 1 or 2)
P	Perturbed pattern or Paschen-Back effect
D	The pattern may belong to either of two classifications for the line

EXPLANATION OF TABLE, continued

LEVELS
ODD-EVEN

The energy levels that combine to yield the line. The odd level is listed first and the even level second. The levels are indicated by truncated values. The Cm I levels are given in Ref. 4 but the Cm II levels have not yet been published. Of the 2034 lines listed, 1095 are classified as transitions between known levels of Cm I and 746 classified as transitions between known Cm II levels. About 200 remain unclassified

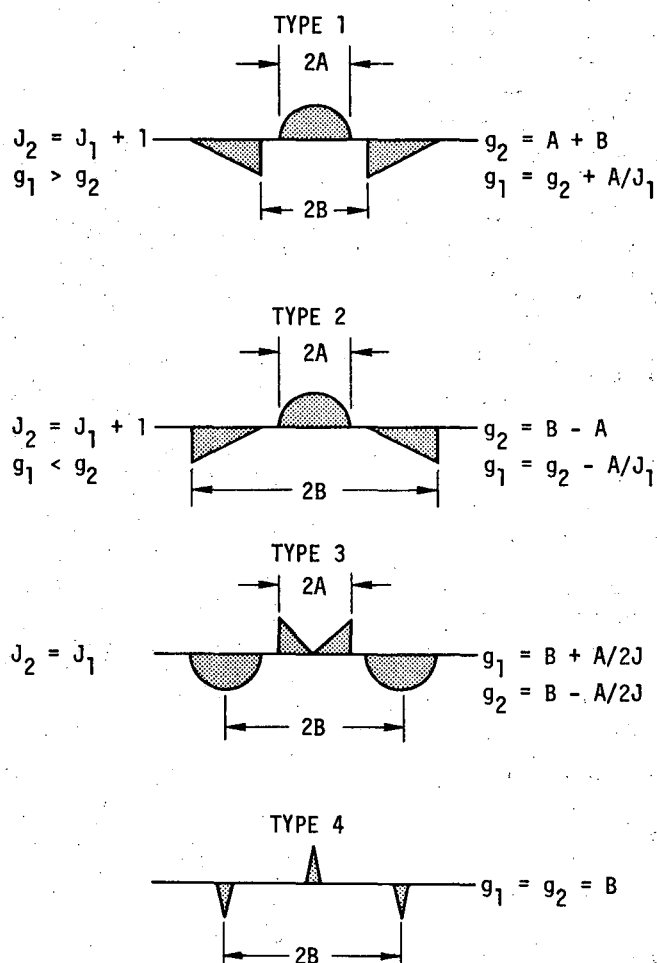


Figure. Types of Zeeman patterns and formulas used to determine g-values from unresolved patterns

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA -O -E TYPE	LEVELS ODD-EVEN
8961.21	11156.153	3000			3	3		302- 9263
8968.88	11146.615	3000			4	4		815- 9784
9173.95	10897.445	10000			3	3		10484-19658
9209.54	10855.336	3000			4	4		10971-20180
9211.21	10853.365	100			9/2	11/2		15559- 6347
9211.98	10852.453	3000			5	5		11641-20853
-----					6	7		12534-21747
9233.26	10827.443	100			4	4		28989-19755
-----					5	6		24501-33734
9251.39	10806.227	1000			6	6		12534-21786
9263.37	10792.248	10000			2	3		0- 9263
9379.26	10658.898	3000			5	5		11641-21020
9445.20	10584.487	1000						
9468.06	10558.931	100			6	6		17656-27124
9476.90	10549.088	100			2	3		15546-25023
9482.39	10542.979	10000			3	4		302- 9784
9509.27	10513.170	100			4	5		15719-25228
-----					9/2	11/2		36128-45637
9513.85	10508.109	10000			2	3		10144-19658
9590.17	10424.486	10000			8	7		15110-24700
9596.97	10417.107	100						
9615.91	10396.579	300						
9639.86	10370.754	100			9/2	9/2		15559- 5919
9657.57	10351.730	10000			7	6		13720-23377
9695.88	10310.833	10000			3	4		10484-20180
9826.81	10173.454	100			6	5		19059-28886
9842.18	10157.568	100			11/2	9/2		15737-25579
9842.77	10156.958	100			4	4		10971-20813
9882.49	10116.138	300			4	5		10971-20853
-----					3	3		38162-28280
9985.75	10011.527	100			9/2	7/2		18205-28191
10006.77	9990.497	100			1	2		10133-20140
-----					1	1		26818-36825
10049.76	9947.760	1000			7/2	9/2		18151- 8144
-----					4	5		10971-21020
10077.26	9920.613	100			4	3		28838-38887
10101.01	9897.285	100			6	6		17047-27124
10105.43	9892.957	100			7	6		23633-33734
-----					7/2	9/2		30805-20704
10113.34	9885.223	300			7	7		22907-33013
-----					4	3		
10352.23	9657.123	10000			3	4		13720-23833
10449.66	9567.081	10000			8	8		23146-33259
10522.31	9501.012	100			6	5		29673-40026
-----								15110-25559
10525.39	9498.234	300			3/2	5/2		12534-23057
10550.18	9475.938	1000			3	4		36178-25655
10578.46	9450.602	1000			11/2	9/2		10484-21010
-----					11/2	11/2		41886-31336
10682.58	9358.464	100	-.302		8	8		37958-48509
10757.54	9293.253	10000			4	4		15110-25688
10827.07	9233.575	300		I	3	4		35816-25237
10842.85	9220.140	300		I	3	2		9458-20140
-----					6	5		12534-23292
11042.73	9053.242	100		I	6	6		12534-23377
11242.94	8892.029	100		I	4	4		38380-27538
11278.72	8863.820	100		I	4	5		10971-22013
-----					11/2	9/2		31947-20704
11298.64	8848.196	100		I	7	6		26010-37288
11332.09	8822.072	300	-.430	I	4	4		29503-40782
11351.14	8807.272	300		I	4	4		
11355.90	8803.574	100	-.546	I	6	6		12534-23833
11405.03	8765.650	300		II	4	3		8958-20290
					6	5	A	25518-36869
					3	4		9458-20813
							A	

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	ODD-EVEN
11406.44	8764.567	300		I	4	5			1 34698-23292
11423.11	8751.776	100		I	5	5			3 17463-28886
11464.26	8720.364	100		I					2
11509.18	8686.331	100		I	4	3			A 31167-19658
-----					3	3			25273-36782
11510.95	8684.994	100		II	5/2	7/2			44495-32984
11552.21	8653.973	1000	-.355	I	3	4	*1.705	1.592	1 9458-21010
11581.60	8632.013	100		I	4	3			16516-28097
11606.71	8613.340	100		II	7/2	7/2			3
11641.63	8587.506	100		I	4	5			34698-23057
11650.79	8580.753	3000		I	5	5	1.76	1.75	3 11641-23292
11658.18	8575.313	100		II	7/2	7/2			34945-46603
11665.28	8570.093	3000		I	5	4	1.757	1.873	1 11641-23306
11701.50	8543.567	300		II	11/2	11/2			3
11702.05	8543.162	100		II					3
11739.83	8515.674	100		II					
11769.29	8494.358	300	-.480	I	4	3			1 8958-20727
11772.73	8491.872	100		II	9/2	9/2			3 30692-18919
11788.77	8480.319	1000	-.503	I	5	5	1.57	1.55	3 9064-20853
11796.08	8475.061	1000	-.154	II	11/2	11/2	1.603	1.423	3 15737-3941
11838.68	8444.565	100		I	6	5			17047-28886
11839.36	8444.079	1000		I	7	8	1.615	1.509	1 13720-25559
11841.46	8442.584	100	-.286	I	4	3			A 28487-16645
11854.77	8433.105	1000		I	6	7			1 36554-24700
11855.49	8432.590	300		I	4	4	1.60	1.58	3 8958-20813
11857.86	8430.907	100	-.490	II	9/2	11/2			1 18205-6347
11864.47	8426.210	100	-.316						3
11893.42	8405.702	100	-.196		5	4			11641-23535
11902.89	8399.016	300			6	6			3 17656-29559
11912.31	8392.371	10000			6	5	1.629	1.754	1 3809-15721
11934.03	8377.097	100		II	3/2	5/2			A 35932-47866
11945.36	8369.150	1000	-.350		5	4	1.56	1.57	1 9064-21010
11956.05	8361.669	300	-.351		5	5			3 9064-21020
11958.85	8359.711	1000			5	6			1 35336-23377
11968.17	8353.198	1000	-.132		7	8	1.621	1.445	1 13720-25688
11989.04	8338.656	300	-.190		4	3	1.731	*1.923	1 28634-16645
11996.76	8333.295	1000	*.161	I			0.394	1.009	1
11999.93	8331.093	100			7	6			AD 20762-32762
-----					4	5			AD 28634-40634
12009.93	8324.156	100			4	4			4 16516-28526
12018.80	8318.014	300		II			DG = 0.368		2
12051.79	8295.239	1000	-.360		4	4			3 8958-21010
12062.48	8287.888	100	-.369		4	5			A 8958-21020
12064.44	8286.547	100			4	4			4 16516-28580
12112.63	8253.575	1000			4	3	1.886	1.979	1 10971-23083
12154.06	8225.443	3000		I	4	4	1.730	*1.787	3 28634-16480
12162.98	8219.409	100		II	9/2	9/2			32867-20704
12165.20	8217.912	100			6	7			1 12534-24700
12191.40	8200.246	300	-.200	II					2
12221.45	8180.084	100		II					3
12297.15	8129.731	300	-.517		3	3	1.744	2.111	3 21560-9263
12307.18	8123.107	100			3	2	2.171	2.552	1 10484-22792
12307.96	8122.587	100			2	2			3 35100-22792
12320.22	8114.509	300			4	4			3 28634-16314
12326.53	8110.356	300	-.111		5	5	1.622	*1.463	3 17463-5136
12335.79	8104.262	1000			4	4	1.88	1.86	3 10971-23306
12343.12	8099.449	100	-.382		4	3			A 28989-16645
12350.28	8094.757	100		II	9/2	9/2			3 33055-20704
12366.99	8083.818	300			5	6			1 17463-29830
12369.88	8081.932	300			4	5	1.62	1.62	4 16516-28886
12438.24	8037.514	100	-.201	I	5	4			A 11641-24079
12448.08	8031.161	100		II	11/2	9/2	1.72	1.72	4 24078-36526
12483.96	8008.076	300	-.541	I	4	4	1.566	1.797	3 22268-9784
12506.07	7993.918	300		I	7	6			AD 13720-1214
-----					4	3			AD 32796-20290

See pages 461-463 for Explanation of Table.

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
12508.13	7992.602	1000	-.318	I	4	4	1.650	1.789	3	28989-16480
12513.04	7989.464	1000	-.565	I	5	4	1.545	1.796	1	22297- 9784
12520.12	7984.946	300	-.166	I	6	5			A	17656- 5136
12533.58	7976.372	100		I	4	5				33554-21020
12559.37	7959.990	300		I	2	3			2	21822- 9263
12598.93	7934.998	300		I	3	3			3	10484-23083
12601.64	7933.295	300		I	3	4			1	15924-28526
12641.78	7908.105	300	-.569	I	3	3	1.71	1.71	3	9458-22099
12647.11	7904.768	300		I	2	2			3	10144-22792
12656.16	7899.119	100		I	3	4			A	15924-28580
12666.61	7892.603	1000		II	11/2	9/2	1.599	1.781	1	12913-25579
12674.30	7887.814	100		I	4	4				28989-16314
12675.24	7887.227	3000		I	3	2	1.801	2.224	1	29673-16998
12683.53	7882.071	100		I	7	6			1	22907-35591
12698.94	7872.508	1000		I	6	6			3	12534-25233
12705.12	7868.675	300	-.497	I					3	
12717.21	7861.198	100		II	11/2	9/2				6202-18919
12735.13	7850.132	100		I	1	1			3	15300-28035
12741.10	7846.459	100		II					A	
12756.73	7836.840	3000	-.227	I	5	4	1.670	1.422	2	1764-14521
12765.72	7831.323	300	-.269	I	4	5			2	28487-15721
12784.40	7819.882	300		II					2	
12796.02	7812.781	1000		I	3	2	1.309	*2.217	1	29794-16998
12800.26	7810.193	300W		I	5	5			3	22297-35097
12806.56	7806.348	300	-.334	I	4	3			1	29452-16645
12815.49	7800.912	1000		I	6	7			2	20197-33013
12831.26	7791.323	100		I	5	4			A	11641-24472
12837.74	7787.388	100		II					A	
12857.52	7775.413	100		II	11/2	9/2			A	31777-18919
12868.53	7768.755	100	-.435	II	9/2	9/2			3	31788-18919
12913.32	7741.813	3000	-.230	I	4	5	1.74	1.75	2	28634-15721
12914.12	7741.333	300		I	5	6	1.92	*1.54	1	16915-29830
12945.18	7722.754	100	+.187	I					A	
12949.01	7720.473	10000	-.335	I	5	5	1.57	1.55	3	9064-22013
12967.36	7709.549	100	-.558	I	3	4			2	22751- 9784
12971.58	7707.040	1000	-.287	I	4	4			3	29452-16480
12978.66	7702.834	100	+.580	II					A	
12986.18	7698.376	300	+.652	II					A	
13002.97	7688.436	100	+.302	II						
13005.13	7687.159	1000	-.541	I	4	3	1.566	2.112	1	22268- 9263
13014.68	7681.518	1000	-.557	I	5	4	1.584	1.797	1	22799- 9784
13027.79	7673.787	10000	+.06	I	3	3	1.802	1.922	3	29673-16645
13039.89	7666.665	1000	+.110	I					1	
13055.45	7657.527	3000	-.336	I	4	5			1	8958-22013
13068.23	7650.037	100	-.118	I	3	4			A	15924-28992
13070.79	7648.538	1000	-.521	I	3	3			3	22334- 9263
13071.92	7647.881	3000		II	9/2	11/2	1.633	1.424	1	17013- 3941
13073.99	7646.671	1000	+.085	I					1	
13080.26	7643.006	300	-.151	II	6	6	1.68	*1.439	3	12534-25615
13097.59	7632.894	300	+.241	II	9/2	9/2			3	33802-20704
13101.70	7630.496	1000	+.170	II	1/2	1/2			3	25080-11978
13108.75	7626.394	100	-.192	I	4	4			3	10971-24079
13116.65	7621.802	300	.00	I	2	3	2.065	1.676	1	15546-28663
13123.36	7617.900	1000	-.602	I	6	7	1.617	1.466	1	3809-16932
13148.58	7603.293	1000	-.04	I	3	3	1.318	1.925	3	29794-16645
13149.47	7602.775	100	-.201	I	8	7				15110-28259
13154.30	7599.986	100	+.359	II					3	
13177.14	7586.814	100	+.200	I	6	6			3	36554-23377
13179.16	7585.649	300		I	1	2	3.298	2.008	1	15300-28479
13192.81	7577.800	10000	+.12	I	3	4	1.78	1.78	4	29673-16480
13208.28	7568.923	1000	-.598	I	5	4	1.57	1.57	4	9064-22273
13215.13	7565.000	100	-.530	I					3	
13267.39	7535.200	1000	-.383	I	4	5	1.650	1.762	2	28989-15721
13294.37	7519.911	300	-.502	I	2	3	1.769	2.113	2	22557- 9263
13295.20	7519.441	100		I	4	4				33475-20180

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E	TYPE
13304.79	7514.022	100	.00	I	3	4			A 15924-29229
13313.59	7509.053	1000	.0	I	3	4	1.318	*1.787	2 29794-16480
13314.72	7508.419	1000	-.602	I	4	4	1.61	1.56	3 8958-22273
13332.46	7498.429	100	+.542	II					3
13355.26	7485.623	300		I	5	4	1.75	1.70	2P 11641-24996
13358.96	7483.554	300	+.390	I	3	4	1.80	1.84	2 29673-16314
13373.82	7475.238	100		I	4	4			3 33554-20180
13385.80	7468.547	300	.00	I	8	7			2 15110-28495
13404.45	7458.155	300	.00	I	7	6			1D 13720-27124
-----				I	2	3			1D 23377-36782
13465.05	7424.589	100	-.203	I	4	3			AD 20673- 7208
-----				I	2	3			AD 23377-36842
13488.51	7411.677	1000	-.550	I	3	3	1.675	2.112	3 22751- 9263
13498.05	7406.435	100	-.150	I	4	4			3 23282- 9784
13501.76	7404.402	1000	.00	I	4	4			3 10971-24472
13506.35	7401.885	3000	-.304	I	6	5	1.623	1.703	1 3809-17315
13513.42	7398.013	100		I	5	6			23775-37288
13537.09	7385.077	300	+.08	I	6	6			3 20197-33734
13586.66	7358.133	1000	.00	I	5	5			3 11641-25228
13592.23	7355.118	1000	-.06	I	5	6	*1.757	1.506	1 11641-25233
13634.75	7332.179	1000	-.470	I	5	4	1.508	1.793	1 23419- 9784
13643.66	7327.392	3000	+.135	II	11/2	13/2	1.602	1.495	1 15737- 2093
13678.00	7308.995	300	+.163	I	4	5			1 34698-21020
13705.35	7294.411	1000	-.237	I	4	4	1.777	1.423	3 815-14521
13730.83	7280.874	3000	-.346	I	4	5			2 29452-15721
13734.37	7278.997	100	+.613	II					A
13817.10	7235.417	100	-.04	I	4	3			A 33475-19658
13830.65	7228.325	100	-.627	II	5/2	7/2			A 8474-22305
13850.47	7217.984	100	+.281	I	4	3			A 36934-23083
13851.72	7217.328	100	-.696	II	9/2	9/2			3 5067-18919
13861.05	7212.473	100	-.122	I	2	1			A 22557- 8696
13882.65	7201.251	100	+.341	II					A
13882.85	7201.147	300	-.554	I	4	3			1 23146- 9263
13895.71	7194.483	100	.00	I	4	3			A 33554-19658
13899.35	7192.596	3008	.00	I			0.22	1.65	3
-----		1008	-.510		3	4			A 23683- 9784
13911.58	7186.277	1000	+.152	II	9/2	7/2	1.632	2.106	1 10134-24046
13933.46	7174.992	100	.00	I					3
13939.60	7171.829	100	-.09	I	5	5			3 11641-25581
13946.33	7168.369	300	-.554	I	4	4			3 23730- 9784
13952.82	7165.037	100	+.140	I	5	5			3 19089- 5136
13957.39	7162.687	10000	+.06	I	5	5	1.671	1.756	3 1764-15721
13973.54	7154.410	300	-.147	I	5	6	*1.757	1.446	1 11641-25615
13988.06	7146.986	300	+.03	I	3	4	2.177	1.990	1 10484-24472
13992.43	7144.753	100	-.473	I	5	5			3 9064-23057
13993.31	7144.301	1000	-.07	I	5	6			2 19741-33734
14052.38	7114.269	1000	+.02	I	4	3			2 10971-25023
14074.44	7103.122	300	+.05	I	3	4			1 34255-20180
14104.79	7087.837	100	-.149	I	5	6			A 19741-33846
14114.44	7082.989	300	-.516	I	2	3			2 23377- 9263
14114.83	7082.795	100	+.09	I	6	5			17047-31162
14125.35	7077.518	100	-.344	I	4	3			1 8958-23083
14218.85	7030.977	1000	-.238	I	3	4	2.012	1.427	1 302-14521
14227.60	7026.656	1000	-.359	I	5	5			3 9064-23292
14246.09	7017.533	100	.00	II					A
14250.76	7015.238	1000	-.582	I	6	5			2 3809-18060
14257.17	7012.082	1000	.00	I	4	5	1.88	1.65	1 10971-25228
14264.31	7008.572	3000	+.12	II	9/2	11/2	1.585	1.426	1 18205- 3941
14297.61	6992.245	1000	-.502	I	2	3	2.08	2.11	2 23560- 9263
14348.52	6967.440	100	-.339	I	4	4			3 8958-23306
14351.69	6965.897	100	-.144	I	3	3			3 21560- 7208
14399.13	6942.949	100	+.612	II					3
14420.50	6932.658	1000	-.501	I	3	3	1.881	2.115	3 23683- 9263
14467.50	6910.139	1000	-.540	I	4	3	1.628	2.105	1 23730- 9263
14470.23	6908.834	100	-.586	I	5	4			A 9064-23535

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
14485.88	6901.369	100		I	4	4				24270- 9784
14512.08	6888.908	300	+0.05	I	3	4	2.17	1.70	1	10484-24996
14518.24	6885.985	100	+0.06	I	4	4			3	34698-20180
14539.21	6876.054	100	-0.200	I	7	7			3	13720-28259
14550.51	6870.717	3000	-0.230	I	5	4	1.668	1.840	1	1764-16314
14573.20	6860.017	300	+0.34	II	7	7			3	20762-35335
14579.96	6856.838	100	+0.228	I						
14589.75	6852.235	1000	+0.03	I	6	6	1.67	1.67	3	12534-27124
14596.35	6849.138	300	+0.04	I	3	3			3	34255-19658
14600.82	6847.040	100	-0.408	I	3	2			1	31599-16998
14604.78	6845.185	1000	-0.115	I	5	5			3	19741- 5136
14610.12	6842.684	100	-0.08	I	4	5				10971-25581
14655.73	6821.388	100	+0.186	I	3	3			3	34314-19658
14668.14	6815.615	300	+0.165	II					2	
14687.02	6806.856	300	-0.204	I	4	4	1.76	1.79	3	31167-16480
14716.65	6793.149	10000		I	5	4	1.667	1.784	1	1764-16480
14775.54	6766.073	300	.00	I	7	7			3	13720-28495
14802.90	6753.570	100	.00	I	3	2			2	10484-25287
14807.97	6751.256	300	+0.155	I	6	7			1	36554-21747
14813.05	6748.940	300	-0.175	I	3	2			2	22334- 7521
14860.78	6727.263	100	-0.583	I	3	2			2	9458-24318
14862.08	6726.676	10000	-0.264	I	4	3	1.778	2.131	1	815-15677
14900.33	6709.410	1000	+0.08	I	6	5	1.42	1.40	2	20197-35097
14906.01	6706.851	10000	+0.06	I	4	5			1	815-15721
14927.29	6697.289	100	-0.176	I					4	
14950.55	6686.870	10000	-0.279	I	3	2	2.001	2.834	1	302-15252
14951.48	6686.454	100		I						
14953.37	6685.609	300	-0.383	I	3	3				31599-16645
14991.35	6668.672	300	.00	I	5	6			A	22297-37288
15003.54	6663.252	10000	+0.04	I	7	7	1.49	1.54	3	18009-33013
15007.05	6661.694	300	-0.562	I	4	3			1	24270- 9263
15015.04	6658.148	100	-0.542	I	5	4			4	9064-24079
15033.91	6649.794	3000	+0.151	II	7/2	7/2	1.722	2.101	3	9012-24046
15040.15	6647.035	1000	+0.06	I	4	3	2.028	2.367	1	34698-19658
15040.95	6646.682	100	-0.03	I	5	5			3	21828-36869
15055.70	6640.170	10000	-0.319	I	6	6	1.63	1.63	4	3809-18865
15059.69	6638.410	300	-0.170	I	4	3			2	22268- 7208
15061.00	6637.831	300	-0.276	I	6	5			1	20197- 5136
15077.10	6630.743	100	-0.553	I	2	3			1	9671-24748
15101.24	6620.146	100	-0.604	II	7/2	9/2				9012-24113
-----				II	3/2	5/2				44578-29477
15118.38	6612.638	100	-0.323	I	3	4				31599-16480
15126.49	6609.091	100	.00	I						
15141.12	6602.707	100	+0.04	I	5	4				11641-26782
15142.84	6601.958	100	.00	I	2	2			3	10144-25287
15153.90	6597.139	1000	-0.365	I	1	2	2.820	1.976	1	10133-25287
15156.00	6596.224	1000	.00	I	5	4			1	35336-20180
15159.88	6594.536	1000	.00	I	6	6	1.48	1.52	3	22129-37288
15191.21	6580.937	100	-0.350	I	2	2				30443-15252
15230.77	6563.841	300	-0.185	I	3	2			2	22751- 7521
15232.71	6563.009	300	+0.480	II					2	
15252.69	6554.408	10000	-0.269	I	2	2	2.561	2.832	3	0-15252
15271.92	6546.155	1000	-0.580	I	5	6	1.669	1.535	1	1764-17036
15272.64	6545.849	300	-0.462	I	5	4			A	25057- 9784
15351.87	6512.064	300	-0.333	I	2	3	1.96	1.83	1	9671-25023
15356.37	6510.159	10000	.00	I	6	7			1	17656-33013
15356.56	6510.076	300		I	5	5	1.40	1.44	3	19741-35097
15375.59	6502.020	3000	-0.266	I	3	3	2.003	2.131	3	302-15677
15425.49	6480.986	100		II					A	
15444.93	6472.828	300	-0.06	II	9/2	9/2	1.620	1.780	3	10134-25579
15446.28	6472.263	3000	-0.259	I	4	5	1.75	1.75	4	31167-15721
15476.58	6459.593	100	+0.02	I	4	3	1.89	1.89	4	10971-26447
15483.06	6456.888	100	+0.03	I	5	6			A	11641-27124
15486.66	6455.385	300	-0.595	I	6	6	1.626	1.466	3	3809-19296
15499.12	6450.197	1000	-0.228	I	4	4	1.78	1.86	3	815-16314

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
15531.09	6436.918	300	+ .590	II					2	
15534.04	6435.698	300	- .216	I	6	5	1.69	1.69	4	36554-21020
15537.36	6434.320	300	- .196	I	4	5			1	20673- 5136
15538.90	6433.684	100	- .324	I	3	4			4	9458-24996
15543.07	6431.959	100	- .178	I	3	3			3	22751- 7208
15551.45	6428.491	3000	- .294	I	5	5	1.69	1.69	3	1764-17315
15565.51	6422.684	1000	- .337	I	3	3	1.700	1.815	3	9458-25023
15571.60	6420.171	100	+ .157	II	5/2	7/2	1.958	2.096	2	8474-24046
15598.11	6409.262	100	+ .04	I			1.41	1.41	4	
15616.07	6401.890	100	- .357	I	2	2	1.95	1.96	3	9671-25287
15630.05	6396.164	300	+ .04	II	11/2	9/2	1.62	1.62	4	18222-33852
15635.68	6393.862	100	+ .107	I					3	
15665.28	6381.780	3000		I	4	4	1.78	1.78	3	815-16480
15677.74	6376.707	10000	- .271	I	2	3	2.560	2.130	1	0-15677
15701.32	6367.132	100	+ .366	I	6	5			2	36554-20853
15725.14	6357.485	300	+ .04	I	7	6			2	18009-33734
15773.10	6338.156	100	+ .164	II					3	
15776.28	6336.880	300	- .193	I	5	5	1.56	1.46	3	20912- 5136
15796.27	6328.859	1000	- .195	I	4	4	1.604	1.446	3	20673- 4877
15810.90	6323.003	100	+ .267	I					2	
15829.71	6315.490	300	- .366	I	3	2			1	9458-25287
15830.29	6315.258	300	+ .08	I	4	3			1	815-16645
15833.28	6314.065	1000	- .124	I	6	6	1.681	1.448	3	17047- 1214
15918.04	6280.445	300	- .731	II	7/2	9/2	1.928	1.482	1	
15932.08	6274.911	100	- .322	I	5	4			1	9064-24996
15936.57	6273.143	300	- .361	I	2	1	1.96	2.94	1	9671-25608
15937.41	6272.812	100	- .174	I	4	3	1.42	1.46	1	23146- 7208
15957.14	6265.054	100	.00	I	5	5	1.53	1.53	4	20912-36869
15960.85	6263.598	100	.00	I	6	7			1	12534-28495
15962.88	6262.802	100	+ .02	I	3	3			3	10484-26447
15965.53	6261.760	1000	- .04	I	6	7			1	17047-33013
15968.59	6260.563	100	- .214	I	2	1	1.840	1.473	2	24665- 8696
15971.39	6259.465	300	- .14	II	9/2	7/2			1	17013-32984
16012.62	6243.348	10000	- .226	I	3	4	1.998	1.843	1	302-16314
16035.19	6234.561	3000	- .192	I	5	4	1.547	1.457	2	20912- 4877
16038.51	6233.269	1000	- .326	I	4	4			3	8958-24996
16065.12	6222.943	100	- .340	I	4	3	1.607	1.822	1	8958-25023
16077.98	6217.967	300	.00	I	6	6			3	17656-33734
16163.48	6185.074	300	- .358	I	5	5			3	9064-25228
16169.03	6182.951	3008	- .148	I	2	3	1.771	1.464	1	23377- 7208
16178.78	6179.225	1000		I	3	4	1.998	1.789	1	302-16480
16196.05	6172.635	100	.0	I	4	5	1.61	1.52	1	20673-36869
16248.85	6152.580	100	- .111	I	5	6			1	17463- 1214
16343.80	6116.834	300	+ .08	I	3	3	2.00	1.92	3	302-16645
16368.87	6107.465	300	- .187	I	3	2	1.51	1.47	2	23889- 7208
16442.46	6080.132	1000	- .184	I	6	6	1.621	1.452	3	17656- 1214
16500.08	6058.900	10000	- .289	I	4	5	1.78	1.71	1	815-17315
16552.21	6039.818	100	- .08	I	4	5	1.740	1.466	1	21688- 5136
16645.95	6005.802	100	+ .08	I	2	3	2.565	1.924	1	0-16645
16670.95	5996.798	100	+ .351	II				1.501	2	
16773.49	5960.139	100	- .403	I	5	5	1.57	1.61	3	9064-25838
16784.65	5956.176	100	- .607	I	6	7	1.629	1.428	1	3809-20593
16795.28	5952.406	10000R	- .244	I	7	6	1.48	1.45	2	18009- 1214
16941.66	5900.973	100	.00	II	5/2	3/2	2.111	2.935	1	15092-32034
16951.38	5897.590	1000	- .161	I	5	4	1.599	1.449	2	21828- 4877
16953.80	5896.750	100	- .07	II	7/2	5/2	1.806	2.072	1	15457-32411
16992.56	5883.297	3000	- .204	I	6	5	1.47	1.46	2	22129- 5136
17044.30	5865.437	100	- .525	I	6	5			2	3809-20853
17061.60	5859.489	300	- .186	I	4	3	1.51	1.47	2	24270- 7208
17100.77	5846.069	10000	- .310	I	5	6	1.67	1.62	1	1764-18865
17126.09	5837.425	100	+ .03	I	9/2	9/2				41239-24113
17144.15	5831.277	300	- .202	I	2	2	1.837	1.458	3	24665- 7521
17148.67	5829.740	100	- .165	I	4	3	1.43	1.46	1	24357- 7208
17161.07	5825.527	300	- .192	I	5	5	1.55	1.47	3	22297- 5136
17204.71	5810.751	100	- .135	I	4	5	1.617	1.464	1	22341- 5136

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-D	J-E	ZEEMAN DATA		LEVELS
							-D	-E	ODD-EVEN
17244.48	5797.348	300	-.579	I	4	5	1.774	1.594	1 815-18060
17390.91	5748.537	100	-.164	I	4	4	1.565	1.446	3P 22268- 4877
17419.98	5738.941	1000	-.193	I	5	4	1.556	1.462	2 22297- 4877
17456.56	5726.918	100	-.14	I	3	4			1P 22334- 4877
17463.61	5724.603	100	-.138	I	4	4	1.618	1.445	3 22341- 4877
17473.19	5721.466	100	-.199	I					2
17531.76	5702.351	300	-.586	I	5	6	1.671	1.470	1 1764-19296
17538.66	5700.108	100	-.592	I	6	6	1.627	1.468	3 3809-21348
17581.17	5686.327	100	-.04	II	3/2	5/2	3.011	2.071	1 14830-32411
17662.72	5660.072	100	-.175	I	5	5	1.582	1.465	3 22799- 5136
17689.95	5651.359	100	+.157	I	6	6	1.71	1.63	3 36554-18865
17691.73	5650.788	100	-.03	I	3	3	1.54	1.46	3 24900- 7208
17868.98	5594.738	300	.00	I	3	3	1.366	1.465	3 25077- 7208
17874.29	5593.073	300	-.166	I	3	4	1.677	*1.450	1 22751- 4877
17875.14	5592.808	3000	+.136	I	5	6	1.310	1.454	2 19089- 1214
17892.01	5587.536	100	.00	II	5/2	7/2	2.107	1.746	1 15092-32984
17921.63	5578.302	100	-.175	I	5	4	1.588	1.454	2 22799- 4877
17937.64	5573.323	1000	-.315	I	6	7	1.62	1.60	1 3809-21747
17977.03	5561.111	3000R	-.306	I	6	6	1.63	1.71	3 3809-21786
18021.00	5547.542	100	+.08	I	5	5	1.79	1.70	3 35336-17315
18056.74	5536.560	1000	+.06	II	9/2	7/2	*1.623	1.747	1 10134-28191
18268.62	5472.346	1000	-.167	I	4	4	1.42	1.45	3 23146- 4877
18395.06	5434.733	100	-.05	II	7/2	9/2	1.798	1.628	1 15457-33852
18416.44	5428.421	100	-.268	I	5	4	1.674	1.986	1 1764-20180
18527.11	5395.997	1000	-.112	I	5	6	1.44	*1.453	2 19741- 1214
18541.70	5391.748	300	-.09	I	5	4			2 23419- 4877
18594.38	5376.475	100	-.163	I	4	5	1.633	1.464	1 23730- 5136
18639.01	5363.600	1000	-.241	I	5	5	1.42	*1.463	3 23775- 5136
18761.94	5328.457	100	-.098	I	7	7	1.479	1.371	3
18850.49	5303.427	100	-.246	I	4	4			3 28634- 9784
18865.74	5299.138	100	-.169	I	2	1	1.46	1.46	4 27562- 8696
18967.60	5270.682	300	+.02	II	7/2	5/2	1.721	2.024	1 9012-27980
18978.48	5267.659	1000	+.09	II	9/2	7/2	1.817	2.093	1 5067-24046
18983.32	5266.317	3000R	-.266	I	6	6	1.40	1.46	3 20197- 1214
19002.48	5261.007	100	+.05	I	3	2	2.064	2.839	1 34255-15252
19012.39	5258.264	100	-.181	I	3	4			1 23889- 4877
19021.24	5255.818	100	+.08	I	4	3			1 34698-15677
19021.95	5255.621	100	.00	I	5	4			1 35336-16314
19089.40	5237.052	300	-.508	I	5	5	1.670	1.544	3 1764-20853
19179.05	5212.571	300	+.07	II	7/2	7/2	1.720	1.746	3 9012-28191
19204.55	5205.651	100	-.426	I	4	4	*1.648	1.80	3 28989- 9784
19220.99	5201.198	100	-.160	I	4	5	1.44	1.46	2 24357- 5136
19245.99	5194.442	100	-.354	I	5	4			2 1764-21010
19256.67	5191.560	1000	-.356	I	5	5	1.67	1.72	3 1764-21020
19293.60	5181.621	100		I	3	2	1.47	1.47	4 26814- 7521
19356.66	5164.742	300	-.258	I	3	3	1.999	2.371	3 302-19658
19365.06	5162.502	1000	-.21	I	4	4	1.777	1.981	3 815-20180
19369.68	5161.271	100	-.06	I	3	4			1
19371.65	5160.745	300	-.244	I	4	3			1 28634- 9263
19377.30	5159.240	3000	.00	II	11/2	9/2			1 6202-25579
19474.89	5133.386	300	-.418	I	4	3	1.777	1.669	2 815-20290
19479.90	5132.068	100	-.171	I	4	4	1.44	1.44	4 24357- 4877
19505.31	5125.381	300	.00	II	5/2	5/2	*1.952	2.020	3 8474-27980
19509.77	5124.210	100	.00	I	5	5	1.41	1.46	3 24646- 5136
19513.62	5123.198	100	.00	II	9/2	9/2			3 17013-36526
19546.18	5114.664	100	.00	I	4	3			1 26754- 7208
19547.88	5114.219	100	-.110	I	7	6			2 20762- 1214
19568.48	5108.834	300	-.343	I	6	6	1.63	1.69	3 3809-23377
19612.80	5097.290	100	.00	I	6	5			1 24749- 5136
19634.85	5091.567	3000	+.09	II	7/2	7/2	2.03	2.10	3 4411-24046
19658.81	5085.359	1000	-.257	I	2	3	2.560	2.372	2 0-19658
19660.24	5084.989	300	+.146	II	11/2	9/2	1.598	*1.768	1 15737-35397
19668.00	5082.984	100	-.386	I	4	4	*1.671	1.798	3 29452- 9784
19698.61	5075.086	100	-.179	I	5	6			1 20912- 1214
19711.44	5071.781	100	.00	I	9/2	9/2			3 41902-22190

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E TYPE	
19780.20	5054.151	100	+0.04	II	3/2	5/2	2.663	2.024 1	8199-27980
19838.49	5039.300	1000	-0.320	I	3	2	2.01	2.01 4	302-20140
19878.56	5029.143	1000	-0.263	I	3	4	1.99	1.99 4	302-20180
19889.23	5026.445	300	.00	I	3	4	1.79	1.79 4	29673- 9784
19912.10	5020.672	100	-0.479	I	4	3	1.778	1.649 2	815-20727
19971.62	5005.708	100		II				3	
19988.40	5001.505	1000	-0.416	I	3	3	2.003	1.671 3	302-20290
19992.58	5000.462	1000	-0.323	I	2	1	2.560	3.147 1	0-19992
19997.11	4999.327	100	+0.08	II	9/2	7/2	1.652	1.850 1	15559-35556
20022.12	4993.083	1000	-0.294	I	5	6		2	1764-21786
20022.96	4992.875	100	.00	I	3	4		1	24900- 4877
20035.75	4989.687	3000	-0.09	II	5/2	7/2	2.491	2.096 1	4010-24046
20038.02	4989.121	300	-0.503	I	4	5		1	815-20853
20098.73	4974.051	300		II	7/2	7/2	1.80	1.86 3	15457-35556
20140.64	4963.701	300	-0.321	I	2	2	2.563	1.991 3	0-20140
20187.89	4952.082	100	+0.175	II	5/2	5/2	2.110	2.253 3	15092-35280
20189.15	4951.773	100	-0.382	I	4	3	1.671	2.107 1	29452- 9263
20194.60	4950.437	1000	-0.351	I	4	4	1.778	1.593 3	815-21010
20205.29	4947.818	3000	-0.351	I	4	5	1.77	1.72 1	815-21020
20249.65	4936.979	3000	-0.327	I	5	5	1.671	1.547 3	1764-22013
20410.40	4898.095	100	+0.03	I	3	3	1.800	2.112 3	29673- 9263
20425.59	4894.451	1000	-0.477	I	3	3	2.003	1.648 3	302-20727
20430.41	4893.299	300	-0.107	I	5	6	1.741	1.523 1	
20450.52	4888.485	100	+0.200	II	3/2	5/2	3.012	2.255 1	14830-35280
20463.47	4885.391	100	+0.190	II	5/2	7/2	2.104	1.855 1	15092-35556
20494.69	4877.951	100	-0.346	I	5	6	1.56	1.56 4	9064-29559
20506.78	4875.075	100	-0.270	I	6	5	1.370	1.759 1	36228-15721
20511.82	4873.877	30008	+0.02	II	9/2	9/2	1.83	1.78 3	5067-25579
-----		3008	-0.554	I	3	4	2.000	1.584 1	302-20813
20700.31	4829.497	300	-0.124	I	4	5	1.38	1.46 2	25836- 5136
20708.10	4827.679	100	-0.348	I	3	4	2.001	1.596 1	302-21010
20727.75	4823.103	100	-0.473	I	2	3	2.563	1.646 1	0-20727
20741.61	4819.879	100	-0.128	I	5	5	1.49	1.46 3	25878- 5136
20765.19	4814.406	100	-0.373	I	5	6	1.57	1.54 1	9064-29830
20890.84	4785.449	300	-0.313	I	6	7	1.625	1.625 4	3809-24700
21000.52	4760.455	100	-0.121	I	5	4	1.50	1.46 2	25878- 4877
21083.40	4741.742	1000	-0.176	I	5	6	1.54	1.45 1	22297- 1214
21168.19	4722.748	1000	.00	II	7/2	9/2	2.026	1.780 1	4411-25579
21198.25	4716.052	100	-0.323	I	4	5	1.777	1.545 1	815-22013
21292.34	4695.210	300	.00	I	6	5	1.40	*1.463 1	26428- 5136
21293.05	4695.054	1000	-0.465	I	5	5	1.672	1.543 3	1764-23057
21328.86	4687.171	100	-0.095	I	4	5	1.636	1.464 1	26465- 5136
21353.04	4681.864	100	-0.283	II	13/2	11/2	1.42	1.50 1	27700- 6347
21383.43	4675.209	300	-0.303	I	4	4	1.76	1.80 3	31167- 9784
21419.02	4667.441	300	-0.364	I	6	5	1.62	1.64 1	3809-25228
21424.59	4666.228	3008	-0.429	I	6	6	*1.624	1.50 3	3809-25233
21425.87	4665.948	300	+0.248	I	5	6	0.97	1.44 2	22640- 1214
21515.99	4646.405	100	.00	I	2	3	1.243	1.464 2	28724- 7208
21528.26	4643.758	3000	-0.353	I	5	5	1.67	1.74 3	1764-23292
21542.73	4640.638	1000	-0.333	I	5	4	1.671	1.866 1	1764-23306
21565.20	4635.803	300	-0.562	I	2	2	2.562	1.607 3	0-21565
21585.64	4631.413	100	-0.100	I	2	1	2.874	2.222 2	10144-31730
21594.03	4629.614	100	-0.135	I	3	2	2.178	1.775 2	10484-32078
21613.59	4625.424	3000	-0.328	I	5	6	1.67	1.69 2	1764-23377
21614.71	4625.182	100	-0.409	I	4	5		1	8958-30573
21684.49	4610.300	300	+0.02	I			0.186	1.643 2	
21693.42	4608.403	10000R	-0.265	I	7	6	1.47	1.47 4	22907- 1214
21734.85	4599.617	100	-0.527	I	4	4	1.60	1.51 3	8958-30693
21737.10	4599.141	100	-0.166	I	1	1	1.964	1.466 3	30433- 8696
21781.01	4589.869	300	-0.209	II	11/2	9/2	1.42	1.40 2	29925- 8144
21799.35	4586.008	100	+0.04	I	4	4	1.894	1.546 3	10971-32770
21802.65	4585.313	100	-0.130	I	3	3	2.174	1.696 3	10484-32887
21827.71	4580.048	100		I	4	3	1.88	1.59 2	10971-32798
21830.72	4579.418	100		I	2	1	2.875	1.539 2	10144-31975
21876.59	4569.816	100	.00	I	5	4	1.763	1.497 2	11641-33518

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
21877.39	4569.649	100	.00	I	4	4	1.41	1.46	3	26754- 4877
21904.60	4563.971	1000	-.292	I	4	3	1.759	2.114	1	31167- 9263
21922.32	4560.283	1000	-.107	I	6	6	1.567	1.450	3	23136- 1214
21933.96	4557.863	100	-.128	I	2	2	2.872	1.770	3	10144-32078
21937.12	4557.207	300	-.150	I	3	4	1.46	1.45	1	26814- 4877
21949.90	4554.552	100	-.181	II	5/2	5/2	1.330	1.653	3	30388- 8436
21985.04	4547.273	300	-.240	II	11/2	13/2	1.721	1.497	1	24078- 2093
22029.01	4538.196	1000	-.414	I	6	5	1.62	1.61	2	3809-25838
22065.65	4530.660	300	.00	I			0.162	1.217	1	
22085.26	4526.637	3000	+.252	I	5	6	0.968	1.450	2	23299- 1214
22096.20	4524.396	100	-.186	I	3	2	2.184	2.051	2	10484-32581
22097.47	4524.137	100	-.308	I	5	5	1.58	1.67	3	9064-31162
22099.84	4523.651	300	-.555	I	2	3	2.562	1.727	1	0-22099
22128.28	4517.837	1000	+.107	I	6	5	1.286	1.462	1	27264- 5136
22139.07	4515.636	300	-.375	I	4	5	1.772	1.327	1	815-22954
22225.57	4498.059	100	-.235	I	1	1	1.758	1.465	3	30922- 8696
22241.67	4494.804	3000	-.465	I	4	5	1.774	1.539	1	815-23057
22253.51	4492.412	100	+.154	I	5	4				27131- 4877
22268.18	4489.453	1000	-.326	I	4	3	1.776	1.986	1	815-23083
22310.72	4480.892	300	-.122	I	6	6	1.675	1.522	3	12534-34845
22314.02	4480.230	100	-.104	I	3	3	2.177	1.604	3	10484-32798
22315.67	4479.899	300	-.541	I	5	4	1.674	1.578	2	1764-24079
22385.88	4465.848	300	-.223	I	4	5	1.46	1.45	1	27522- 5136
22403.19	4462.397	100	-.385	I	5	4	1.58	1.56	2	9064-31468
22419.45	4459.161	10000R	-.268	I	7	6	1.46	1.45	2	23633- 1214
22419.96	4459.060	300	-.111	I	4	3	1.896	1.476	2	10971-33391
22436.15	4455.842	100	-.189	I	2	2	2.876	2.040	3	10144-32581
22439.19	4455.238	100	+.232	II	11/2	13/2	1.368	1.503	2	24533- 2093
22471.69	4448.796	300	+.237	I			0.079	1.531	2	
22476.86	4447.771	10000R	-.347	I	4	5			1	815-23292
22484.71	4446.219	300	+.09	II	11/2	9/2	1.599	1.768	1	12913-35397
22489.92	4445.188	3000	-.305	I	3	2	2.000	2.548	1	302-22792
22491.36	4444.905	3000	-.326	I	4	4			3	815-23306
22547.11	4433.913	300	-.02	I	4	4	1.896	1.490	3	10971-33518
22548.09	4433.720	100	+.09	II	9/2	9/2	1.49	*1.400	3	30692- 8144
22550.70	4433.207	1000	-.224	II	9/2	7/2	1.42	1.48	1	29617- 7067
22621.38	4419.355	300	+.05	I	4	3	1.235	1.461	1	29830- 7208
22626.62	4418.332	100	-.135	I	4	5	1.36	*1.463	2	27763- 5136
22644.37	4414.869	3000	-.09	I	5	5	1.40	*1.463	3	27780- 5136
22644.78	4414.788	100	.00	I	4	4			3	27522- 4877
22647.55	4414.250	300	-.262	I	2	2	1.987	1.464	3	30168- 7521
22648.83	4414.000	300	-.172	I	5	5	1.760	1.469	3	11641-34290
22652.28	4413.328	300	-.190	I			0.147	1.495	3	
22675.57	4408.794	300	-.195	I	5	5	1.750	1.404	3	11641-34317
22751.96	4393.991	1000	-.236	I	6	5	1.37	1.44	1	27888- 5136
22789.86	4386.685	100	-.583	I	6	5	1.625	1.297	2	3809-26599
22792.06	4386.260	3000	-.304	I	2	2	2.561	2.561	4	0-22792
22800.38	4384.660	100	.00	I	6	7	1.676	1.525	1	12534-35335
22874.10	4370.529	100	-.104	II	7/2	7/2	1.48	1.45	3	31947- 9073
22881.41	4369.132	1000	+.178	I	3	4	1.50	*1.450	1	27758- 4877
22903.26	4364.963	1000	-.08	I	5	4	1.41	*1.450	1	27780- 4877
22906.28	4364.389	300	-.120	I	3	3	*2.175	1.471	3	10484-33391
22912.66	4363.173	300	-.165	I	1	2	1.966	1.461	1	30433- 7521
22914.72	4362.780	100	.00	I	8	9	1.459	1.332	1	
22944.60	4357.099	300	.00	II	7/2	7/2	1.337	1.481	3	30011- 7067
22954.41	4355.237	100	-.155	I	3	2	2.178	1.764	2	10484-33439
22974.14	4351.496	100	.00	II					1	
23004.84	4345.689	10000R	-.327	I	3	4			1	302-23306
23015.38	4343.699	100	+.07	I	2	2	1.286	1.457	3	30536- 7521
23033.41	4340.299	100	.00	I	3	4	2.177	1.487	1	10484-33518
23038.16	4339.405	1000	-.09	I	4	5			2	28174- 5136
23045.11	4338.096	300	+.132	I	3	4	1.204	1.454	2	27922- 4877
23083.83	4330.820	10000R	-.323	I	2	3	2.563	1.990	1	0-23083
23085.62	4330.484	300	.00	I	3	2	1.206	*1.457	4	30606- 7521
23123.64	4323.362	3000	-.207	II	11/2	11/2			3	27065- 3941

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
23125.89	4322.942	1000	-.560	I	2	2	2.558	2.056	3	0-23125
23158.81	4316.797	1000	-.159	I	3	4	1.315	1.453	2	28036- 4877
23174.24	4313.922	300	-.345	I	5	6			1	9064-32239
23178.95	4313.045	300	+.04	II					1	
23204.03	4308.385	300	-.124	I	5	6	1.750	1.520	1	11641-34845
23230.03	4303.563	100	+.03	II	7/2	7/2	1.284	1.479	3	30297- 7067
23232.70	4303.067	3000	-.317	I	5	4			1	1764-24996
23232.97	4303.018	1000	-.578	I	3	4	*2.001	1.479	1P	302-23535
23237.28	4302.218	300	-.583	I	5	5	*1.672	1.370	3	1764-25001
23237.53	4302.174	300	+.200	I	6	6	1.162	1.453	3	24451- 1214
23264.28	4297.227	300	-.540	I	4	4	1.777	1.575	3	815-24079
23287.16	4293.003	10000R	-.160	I	5	6	1.45	1.45	4	24501- 1214
23294.35	4291.679	100	-.162	I	2	2	2.879	1.761	3	10144-33439
23297.06	4291.180	300	-.100	I	4	4	1.45	1.45	4	28174- 4877
23303.81	4289.937	300	-.202	I	6	6	1.675	1.421	3	12534-35838
23312.47	4288.343	300	-.413	I	3	4	1.705	1.545	1	9458-32770
23319.36	4287.076	300	-.183	I	4	5	1.892	1.465	1	10971-34290
23346.07	4282.171	100	-.201	I	4	5	1.903	1.419	1	10971-34317
23350.92	4281.282	300	+.05	I	4	5	1.324	*1.463	2	28487- 5136
23398.82	4272.518	100	-.372	II	7/2	5/2	1.720	2.069	1	9012-32411
23408.31	4270.785	300	-.155	I	6	6	1.672	1.342	3	12534-35943
23432.09	4266.451	10000R	+.02	I	5	6	1.41	1.45	2	24646- 1214
23461.39	4261.123	300	-.332	I	7	7	1.636	1.548	3	13720-37181
23464.11	4260.628	1000	-.355	I	5	5	1.672	1.663	3	1764-25228
23476.71	4258.342	300	-.06	I	2	1	2.874	2.422	2	10144-33621
23511.58	4252.026	100	-.130	II	7/2	5/2	1.478	1.650	1	31947- 8436
23532.59	4248.230	300	-.587	I	2	3	2.561	1.423	1	0-23532
23535.13	4247.772	300	.00	I	6	6	1.42	1.45	3	24749- 1214
23549.17	4245.239	100	+.02	I	4	4	1.894	1.573	3	10971-34520
23558.05	4243.638	300	-.121	I	4	3			1	30766- 7208
23559.05	4243.458	300	-.570	I	4	3	1.782	1.492	2	815-24374
23568.55	4241.749	100	+.02	II	7/2	5/2	2.03	2.03	4	4411-27980
23577.40	4240.155	1000	-.230	II	11/2	11/2	1.42	1.49	3	29925- 6347
23609.83	4234.332	3000	+.06	I	4	4	1.326	1.448	3	28487- 4877
23613.89	4233.604	300		II	11/2	9/2	1.58	1.70	1	12913-36526
23643.90	4228.230	100	+.201	II	9/2	9/2	1.246	1.400	3	31788- 8144
23648.24	4227.455	100		I	3	2	1.18	1.45	1P	31169- 7521
23682.93	4221.262	100	-.135	I	2	2	1.134	1.462	3	31204- 7521
23697.17	4218.726	300	-.341	I	5	6	1.57	1.57	4	9064-32762
23698.55	4218.479	1000	-.234	II	9/2	9/2	1.424	1.528	3	29617- 5919
23737.13	4211.622	10000R	-.130	I	7	6	1.50	1.44	2	24951- 1214
23743.53	4210.488	1000R	-.147	I	5	5	1.46	1.46	4	28880- 5136
23757.32	4208.044	300	.00	I					1	
23759.51	4207.656	10000	-.258	II	13/2	11/2	1.43	1.43	4	27700- 3941
23777.77	4204.424	300	-.540	I	3	4	2.001	1.575	1	302-24079
23789.44	4202.361	300	+.139	II	11/2	9/2	1.267	1.391	1	31933- 8144
23817.03	4197.495	1000	-.452	I	5	5	1.67	1.69	3	1764-25581
23818.10	4197.306	100	+.217	II	9/2	11/2	1.055	1.499	2	30166- 6347
23833.00	4194.681	100	-.605	II	7/2	9/2	1.73	1.39	1	9012-32845
23834.54	4194.410	300	-.364	II	3/2	3/2	2.666	2.934	3	8199-32034
23842.98	4192.926	1000	-.05	I	5	6	1.45	1.45	4	25057- 1214
23850.98	4191.519	300	-.497	I	5	6	1.677	1.439	1	1764-25615
23866.46	4188.800	1000	+.154	I	3	4	1.229	1.450	2	28744- 4877
23917.18	4179.917	100	+.208	I	3	4			1	38438-14521
23927.87	4178.049	300	-.441	I	4	5			2	29064- 5136
23929.42	4177.779	3000	-.07	I	6	5	1.38	1.47	1	29065- 5136
23933.15	4177.128	1000	-.544	I	4	3	1.78	1.77	2	815-24748
23960.56	4172.349	3000R		I	4	4	1.34	*1.450	3	28838- 4877
-----		300R		I	3	3			3	31169- 7208
23961.49	4172.186	300	-.392	I	8	8			3	15110-39071
23961.94	4172.109	100		II	11/2	9/2			A	32106- 8144
23962.21	4172.061	300	-.05	II	5/2	7/2	1.952	1.458	1	8474-32436
23969.44	4170.803	100	-.01	II	5/2	5/2	2.491	2.023	3	4010-27980
23973.90	4170.028	1000	-.539	I	2	1	2.566	3.024	1	0-23973
24002.44	4165.068	300	-.151	I	5	4	1.46	1.46	4	28880- 4877

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E	TYPE
24006.05	4164.443	100	-.238	II	11/2	9/2			1 29925- 5919
24017.24	4162.503	1000	-.07	I	5	5			3 29153- 5136
24034.60	4159.496	3000	-.355	I	6	5			2 3809-27843
24046.39	4157.456	3000	-.400	II	7/2	7/2	1.934	2.098	3 0-24046
24047.16	4157.323	300	+.244	I	6	5			1 29183- 5136
24051.52	4156.570	300	-.255	II	11/2	9/2			1 32195- 8144
24056.88	4155.644	300	-.259	I	5	5			3 9064-33121
24068.23	4153.684	100	.00	II	5/2	3/2			2 35319-11250
24072.55	4152.938	100	-.582	I	3	3			3 302-24374
24074.10	4152.670	3000	-.402	I	5	5			3 1764-25838
24092.44	4149.509	1000	.00	II	7/2	9/2	1.338	1.527	2 30011- 5919
24099.56	4148.283	100	-.04	II	9/2	7/2			1 31166- 7067
24109.95	4146.496	300	.00	II	11/2	9/2			1 18222-42332
24111.48	4146.232	300	.00	I	4	4			3 28989- 4877
24113.72	4145.847	300	-.414	II	7/2	9/2	1.934	1.505	1 0-24113
24130.53	4142.959	100	-.195	I	4	3			4 15719-39849
24137.96	4141.684	1000	.00	II	11/2	11/2			3 28079- 3941
24163.32	4137.337	300	-.265	I	4	5	1.595	1.457	1 8958-33121
24170.82	4136.053	3000	-.311	I	3	4			4 302-24472
24180.91	4134.328	100		II	5/2	7/2	2.492	1.742	1 4010-28191
24181.32	4134.258	3000		I	4	4	*1.778	1.698	3 815-24996
24185.89	4133.476	100	-.572	I	4	5	*1.778	1.378	1 815-25001
24186.78	4133.324	100	-.228	I	4	4	1.232	*1.450	3 29064- 4877
24191.72	4132.481	300	-.09	I	3	2	1.39	1.46	1 31712- 7521
24192.68	4132.316	300	+.129	II	9/2	7/2	1.352	1.463	1 31259- 7067
24197.10	4131.562	100	-.200	I	5	6	1.754	1.421	1 11641-35838
24207.92	4129.714	10000R	-.328	I	4	3	*1.778	1.82	1 815-25023
24211.42	4129.118	300	-.362	II	3/2	5/2	2.666	2.074	1 8199-32411
24276.15	4118.108	3000R	-.07	I	5	4	1.37	*1.450	1 29153- 4877
24304.60	4113.286	10000R	-.190	I	6	6	1.51	1.45	3 25518- 1214
24316.02	4111.356	300	.00	I	4	5	1.672	1.463	1 29452- 5136
24318.83	4110.880	1000	-.582	I	2	2	2.558	1.306	3 0-24318
24333.34	4108.429	300	-.096	I	2	3	1.210	1.469	2 31542- 7208
24344.47	4106.549	1000	+.07	II	9/2	11/2	1.49	1.50	2 30692- 6347
24374.70	4101.457	1000	-.571	I	2	3	2.567	1.490	1 0-24374
24388.17	4099.192	100	.00	I	2	3	1.177	1.465	2 31596- 7208
24397.61	4097.606	100	-.585	II	9/2	11/2	1.624	1.317	1 10134-34532
24412.71	4095.071	3000	-.350	I	4	5	*1.778	1.665	1 815-25228
24450.14	4088.802	1000	-.549	I	6	7	1.621	1.354	1 3809-28259
24500.77	4080.352	300	-.240	I	4	5			1 815-25316
24509.99	4078.818	1000	-.384	II	5/2	7/2	1.950	1.742	1 8474-32984
24543.72	4073.212	100	+.07	II			0.260		3
24548.22	4072.465	100	+.283	I					1
24574.92	4068.040	300	.00	I	4	4	1.685	*1.450	3 29452- 4877
24614.39	4061.517	1000	+.175	II	11/2	11/2	1.167	1.425	3 28555- 3941
24646.37	4056.247	1000							3
24646.68	4056.196	300	-.325	I	6	7	1.681	1.546	1 12534-37181
24663.94	4053.358	1000	-.112	I	5	6	1.48	1.44	1 25878- 1214
24683.16	4050.201	1000	+.290	I	6	6	0.942	*1.452	3 25897- 1214
24686.49	4049.654	10000	-.364	I	6	7			1 3809-28495
24693.68	4048.475	300	+.05	I	4	5	1.235	*1.463	2 29830- 5136
24694.82	4048.289	10000R	-.314	I	3	4			1 302-24996
24721.43	4043.931	3000	-.328	I	3	3	2.005	1.826	3 302-25023
24723.41	4043.606	100	+.04	II	9/2	9/2			3 32867- 5919
24727.31	4042.969	3000	-.533	I	3	2	2.006	2.240	1 302-25029
24728.75	4042.734	300	-.175	II	9/2	7/2	1.39	1.45	1 33802- 9073
24748.79	4039.460	1000	-.539	I	2	3	2.564	1.759	1 0-24748
24765.65	4036.710	3000R	-.448	I	4	5	1.773	1.642	1 815-25581
24769.22	4036.128	300	+.06	I	4	3			4 31978- 7208
24796.03	4031.764	10000R	-.158	I	7	6	1.48	1.46	2 26010- 1214
24818.77	4028.071	1000	-.03	II	9/2	11/2	1.44	1.50	2 31166- 6347
24840.08	4024.615	1000	-.370	II	7/2	9/2	1.72	1.63	1 9012-33852
24857.60	4021.778	300	.00	II	7/2	5/2	1.38	1.30	2 35291-10433
24878.36	4018.422	300	+.128	II	7/2	9/2	1.48	*1.527	2P 30797- 5919
24880.55	4018.068	100	-.112	II	7/2	7/2	1.48	1.48	4 31947- 7067

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
24885.34	4017.295	100	.00	II	5/2	5/2	1.22	*1.300	3	35319-10433
24886.50	4017.108	300	.00	II	7/2	9/2	1.58	1.52	1	30805- 5919
24892.29	4016.173	1000JR	+.125	I	5	6	1.286	1.456	2	26106- 1214
24905.27	4014.079	100	-.08	I					1	
24949.99	4006.885	100	+.159	II	5/2	7/2	1.37	1.45	2	34023- 9073
24952.60	4006.465	3000R	+.08	I	4	4	1.238	1.447	3	29830- 4877
24965.96	4004.321	100	-.243	I	5	4	*1.672	0.876	2	1764-26730
24967.91	4004.009	300	-.600	I	6	6	*1.624	1.392	3	3809-28777
24971.22	4003.478	3000	-.227	II	11/2	13/2	1.51	1.50	1	27065- 2093
24985.62	4001.171	300	-.355	I	3	2	2.01	2.01	4	302-25287
24991.45	4000.237	100	-.152	I	3	3	1.706	2.124	3	40669-15677
25002.66	3998.445	300	+.135	I	2	2	1.218	1.453	3	32523- 7521
25018.04	3995.984	100	.00				1.65	1.65	4	
25018.56	3995.904	3000R	-.320	I	5	4	1.68	1.63	2	1764-26782
25022.71	3995.239	300	-.396	I	4	5				815-25838
25023.58	3995.100	10000R	-.325	I	2	3	2.563	1.822	1	0-25023
25026.87	3994.575	100	+.146	I	6	5	1.68	1.66	2	12534-37561
25029.45	3994.164	100	-.530	I	2	2	*2.564	2.236	3P	0-25029
25062.29	3988.930	100	-.346	I	3	4	1.704	1.570	1	9458-34520
25090.41	3984.460	1000	+.096	I	2	3	1.178	1.463	2	32299- 7208
25090.92	3984.379	100	+.194	II	9/2	9/2			3	33235- 8144
25102.41	3982.554	1000	-.118	I	4	5	1.306	1.470	2	30238- 5136
25121.17	3979.580	300	-.06	II	11/2	9/2	1.39	1.40	1	33265- 8144
25130.24	3978.144	100	-.05	I	3	2	1.40	1.46	1	32651- 7521
25151.85	3974.727	3000	.00	II	13/2	11/2	1.655	1.761	1	8425-33577
25161.78	3973.158	300	+.211	I	4	3	1.167	1.469	1	32370- 7208
25165.76	3972.529	100	-.169	I	2	2	0.759	1.456	3	32686- 7521
25214.65	3964.827	1000JR	.00	I	6	6	1.42	1.45	3	26428- 1214
25218.49	3964.223	100		I	4	4	1.306	*1.424	3	39739-14521
25228.15	3962.705	300	+.196	II	11/2	11/2	1.052	1.428	3	29169- 3941
25230.81	3962.288	300	-.05	II	5/2	7/2	1.61	1.44	1	34304- 9073
25233.61	3961.847	300	.00	I	1	2	1.955	1.463	1	32754- 7521
25243.54	3960.289	1000	-.491	II	9/2	11/2	*1.638	1.373	1	10134-35378
25243.94	3960.227	3000	-.08	I	5	4	1.239	1.448	1	30121- 4877
25247.11	3959.728	100	.00	I	5	4	1.76	1.73	2	11641-36888
25247.40	3959.683	300	-.05	II	9/2	9/2	1.44	1.53	3	31166- 5919
25252.15	3958.938	100	-.398	I	3	4	1.78	1.79	2	35036- 9784
25262.99	3957.240	300	+.09	II	9/2	9/2	1.622	1.767	3	10134-35397
25287.77	3953.362	10000R	-.351	I	2	2	2.564	1.988	3	0-25287
25295.21	3952.199	100	-.05	I	5	5	1.355	1.467	3	30431- 5136
25315.85	3948.976	300	+.103	I	1	1	1.740	1.461	3	34012- 8696
25317.73	3948.683	10000R	-.08	I	6	6	1.452	1.452	4	26531- 1214
25322.12	3947.999	1000	-.495	II	9/2	11/2	1.618	1.359	1	10134-35456
25340.72	3945.101	300	.00	I	5	6	1.48	*1.452	1	26554- 1214
25346.86	3944.146	10000R	.00	I	6	5	1.347	1.460	1	30483- 5136
25351.22	3943.467	300	-.368	I	7	8	1.632	1.531	1	13720-39071
25356.22	3942.689	100	-.583	I					1	
25360.49	3942.025	10000R	-.315	I	5	6	1.67	1.66	1	1764-27124
25361.82	3941.819	100	-.05	I	3	2	1.44	1.44	4	32882- 7521
25395.02	3936.666	10000R	-.10	I	7	6	1.39	*1.452	1	26609- 1214
25396.89	3936.376	300	-.334	I	3	4			1	9458-34854
25421.46	3932.571	100	-.192	II	9/2	7/2	1.627	1.865	1	10134-35556
25436.46	3930.252	100	-.729	II	7/2	9/2	1.937	1.240	1	0-25436
25440.29	3929.661	300	+.160	II	9/2	11/2	1.246	1.494	2	31788- 6347
25442.53	3929.314	1000	+.05	I	3	3	1.39	1.47	3	32651- 7208
25515.10	3918.138	300	+.08	I	5	5	1.219	1.463	3	30651- 5136
25523.98	3916.776	1000	-.496	I	5	4	1.69	1.61	2	1764-27288
25534.21	3915.206	300	-.203	I	4	3	1.87	1.90	1	10971-36505
25538.60	3914.533	100	+.408	II	7/2	5/2	1.20	1.31	1	35972-10433
25545.51	3913.473	300	-.370	I	2	2	2.568	1.519	3	0-25545
25552.20	3912.449	100	-.322	I	5	4	1.80	1.80	4	35336- 9784
25554.14	3912.152	100	-.06	I	5	4			1	30431- 4877
25567.74	3910.071	100	-.313	I	4	5	*1.605	1.498	1	8958-34526
25575.01	3908.959	100	+.134	II	7/2	5/2			A	36008-10433
25575.96	3908.814	1000	+.196	I	5	6	1.227	1.448	2	26790- 1214

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
25579.73	3908.238	10000R	-.485	II	7/2	9/2	*1.935	1.788	1	0-25579
25585.86	3907.302	300	+.105	II	11/2	11/2	1.278	1.499	3	31933- 6347
25587.71	3907.019	300	+.189	I	4	3	1.36	1.45	1	32796- 7208
25604.86	3904.402	300	-.206	II	11/2	9/2	1.45	*1.400	2	33749- 8144
25605.33	3904.331	100	+.132	II	7/2	7/2			3	34678- 9073
25605.90	3904.244	100	.00	I	2	2			3	33127- 7521
25607.08	3904.064	10000R	-.278	II	13/2	13/2	1.41	1.50	3	27700- 2093
25608.28	3903.882	3000R	-.353	I	2	1	*2.564	2.933	1	0-25608
25615.64	3902.759	100	-.257	I	3	4	1.451	*1.796	2	35400- 9784
25630.36	3900.517	3000R	-.122	I	4	5	1.36	*1.463	2	30766- 5136
25632.10	3900.253	10000R	-.314	I	4	3	*1.778	1.90	1	815-26447
25635.19	3899.784	1000	-.588	I	5	5	*1.672	1.463	3	1764-27399
25643.91	3898.456	100	-.287	I	3	2	2.177	2.736	1	10484-36128
25656.56	3896.535	100	+.05	I	4	3	1.255	1.464	1	32865- 7208
25658.02	3896.312	300	-.162	II	9/2	9/2	1.37	1.40	3	33802- 8144
25667.98	3894.801	100	-.140	I	5	4	1.759	1.462	2	11641-37309
25670.36	3894.439	100	-.315	I	6	5	1.673	1.464	2	12534-38205
25674.12	3893.870	300	-.05	I	3	3	1.45	1.47	3	32882- 7208
25698.26	3890.212	3000	+.02	I	5	5	1.341	1.457	3	30834- 5136
25715.12	3887.661	300	-.281	I	7	6	1.63	1.63	4	13720-39435
25729.09	3885.550	2008	-.03	I	3	4	1.22	1.45	2	30606- 4877
-----		1008					0.30	1.70	2	
25729.18	3885.536	1008	+.149	II	5/2	3/2	1.34	1.84	1	34857- 9127
25737.24	3884.320	300	.00	I	0	1	0.0	1.464	4	34433- 8696
25748.97	3882.550	3008	-.415	I	4	4	1.81	1.79	3	35533- 9784
25749.72	3882.437	100	-.261	I					3	
25750.23	3882.360	3000	-.357	I	6	6	1.63	1.56	3	3809-29559
25759.66	3880.938	100	+.272	II	13/2	13/2	1.356	*1.500	3	27853- 2093
25760.08	3880.876	300	.00	I	2	1	1.51	1.46	2	34465- 8696
25766.58	3879.896	3008	-.246	I	6	5	1.66	1.56	2	12534-38301
25767.30	3879.788	300	-.202	I	5	4	1.759	1.583	2	11641-37408
25773.78	3878.813	100	-.584	I	5	4	1.68	1.56	2	1764-27538
25796.50	3875.397	100	+.123	I	3	4	1.191	1.449	2	30674- 4877
25821.32	3871.672	300	-.02	I	3	3	1.322	1.458	3	33030- 7208
25832.53	3869.992	100	-.04	I	2	3	0.978	*1.465	2	33041- 7208
25836.69	3869.368	300	-.242	I	2	3	2.327	2.115	1	35100- 9263
25841.89	3868.589	100	.00	II	3/2	5/2	1.510	1.663	2	34278- 8436
25847.93	3867.686	300	-.275	II	11/2	11/2	1.337	1.498	3	32195- 6247
25848.55	3867.593	100	.00	I	2	2	2.569	1.470	3	0-25848
25868.30	3864.640	100	-.07	II	5/2	5/2	1.620	1.657	3	34304- 8436
25871.85	3864.110	100	+.190	II	7/2	7/2	1.194	*1.444	3	34945- 9073
25873.73	3863.829	100	-.106	I	4	3	1.250	*1.465	1	33082- 7208
25884.93	3862.157	3000R	+.05	I	7	6	1.43	1.46	1	27099- 1214
25889.27	3861.509	300	-.114	I	4	4	1.38	1.45	3P	30766- 4877
25899.95	3859.917	300	-.358	II	9/2	11/2	1.723	1.497	1	32247- 6347
25914.57	3857.739	300	-.231	I	4	4	1.778	0.889	3	815-26730
25918.21	3857.198	300	.00	I	2	3	1.126	1.468	2	33127- 7208
25939.00	3854.106	10000	.00	I	5	5	1.39	1.46	3	31075- 5136
25939.37	3854.051	100	+.193	I	3	3			3	33148- 7208
25957.16	3851.410	1000	+.04	I	5	4	1.35	1.45	1	30834- 4877
25962.46	3850.475	100	+.07	I	2	2	1.47	1.46	3	33484- 7521
25967.17	3849.924	10000R	-.316	I	4	4	1.775	1.629	3	815-26782
25968.30	3849.757	100	-.156	I	4	5			4P	31104- 5136
25982.52	3847.650	300	-.276	I	3	4	1.840	*1.450	1	30860- 4877
25983.85	3847.453	300	-.298	I	2	2	*2.873	2.744	3	10144-36128
25985.53	3847.205	3000	.00	II	11/2	13/2	1.323	1.500	2	28079- 2093
25992.26	3846.208	300	-.208	I	0	1	0.0	1.465	4	34688- 8696
26003.46	3844.551	1000	-.562	I	3	2	1.996	0.762	2	302-26305
26020.73	3842.000	10000R	-.383	I	6	6	1.63	1.54	3	3809-29830
26021.89	3841.829	300	.00	I	1	0	0.985	0.0	4	34909- 8887
26023.71	3841.559	100	.00	II	7/2	7/2	1.46	*1.485	3	33090- 7067
26028.43	3840.864	1000	-.122	II	7/2	9/2	1.49	1.54	2	31947- 5919
26031.80	3840.366	300	-.273	I	4	4	1.84	1.80	3	35816- 9784
26050.61	3837.593	10000R	+.126	I	6	6	1.293	1.454	3	27264- 1214
26079.68	3833.315	10000R	-.341	I	5	5	1.68	1.58	3	1764-27843

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
26092.44	3831.366	300	+0.05	I	1	2	1.61	1.46	2	33614- 7521
26104.10	3829.730	300	-0.199	I	3	3	1.76	*2.112	3	35367- 9263
26135.43	3825.138	10000R	-0.156	I	6	6	1.48	1.46	3	27349- 1214
26139.56	3824.534	300	-0.408	I	6	5	*1.626	1.52	2	3809-29948
26145.60	3823.650	3000R	-0.315	I	3	3	2.01	1.90	3	302-26447
26162.55	3821.174	100	-0.234	I	4	5	1.064	1.465	2	31299- 5136
26179.39	3818.715	1000	+0.515	II	9/2	11/2	1.299	1.491	2	32527- 6347
26191.26	3816.984	300	.00	II	5/2	3/2	1.224	1.835	1	35319- 9127
26195.93	3816.304	10000R	-0.222	I	7	6	1.301	*1.452	1	27410- 1214
26212.46	3813.897	300	.00	I	1	1	0.978	1.463	3	34909- 8696
26214.38	3813.618	300	-0.509	I	4	3	*1.778	1.517	2	815-27030
26216.22	3813.349	100	-0.564	I						
26217.83	3813.115	300	-0.02	II	7/2	7/2	1.385	1.443	3	35291- 9073
26226.64	3811.835	100	-0.05	II					3	
26227.23	3811.749	3000R	-0.152	I	4	4	1.49	1.45	3	31104- 4877
26232.21	3811.025	300	-0.302	I	7	6	1.070	*1.452	1	27446- 1214
26234.26	3810.727	1000	-0.161	I	4	5	1.50	1.45	1	31370- 5136
26270.14	3805.523	100	-0.411	I	4	3	1.85	*2.112	1P	35533- 9263
26271.47	3805.330	3000R	+0.133	I	5	6	1.40	1.46	2	27485- 1214
26275.75	3804.710	300	+0.06	I	2	3	1.45	1.46	2	33484- 7208
26289.52	3802.718	1000		I	3	3	1.333	*1.465	3	33498- 7208
26290.38	3802.594	1000		I	4	4	1.746	*1.450	3	31167- 4877
26305.62	3800.390	100	-0.561	I	2	2	2.566	0.774	3	0-26305
26311.08	3799.602	3000	-0.233	II	13/2	11/2	1.49	1.43	2	30252- 3941
26360.46	3792.484	100	-0.210	I	2	3	2.88	1.94	1	10144-36505
26371.96	3790.829	100	.00	I	0	1	0.000	1.460	4	35068- 8696
26380.70	3789.574	100	+0.155	II	3/2	5/2	0.701	1.661	2	34816- 8436
26385.32	3788.910	100	+0.09	II	7/2	9/2	1.73	1.78	2	9012-35397
26387.31	3788.625	300	+0.03	I	6	5	1.37	1.46	1	31523- 5136
26392.21	3787.921	100	-0.254	II	9/2	9/2	1.63	1.73	3	10134-36526
26394.92	3787.532	300	-0.393	I	5	6	*1.573	1.56	1	9064-35459
26427.97	3782.796	100	-0.209	II	9/2	11/2	1.288	1.498	2	32775- 6347
26447.22	3780.042	100		II	5/2	3/2				35575- 9127
26447.77	3779.964	3000R	-0.312	I	2	3	2.564	1.901	1	0-26447
26461.98	3777.933	3000	+0.145	II	11/2	13/2	1.170	1.500	2	28555- 2093
26472.59	3776.419	1000	-0.486	I	4	4	*1.778	1.591	3	815-27288
26477.27	3775.751	10000R	-0.333	I	3	2	2.001	2.214	1	302-26779
26480.67	3775.269	1000	-0.315	I	3	4	1.999	1.626	1	302-26782
26491.44	3773.732	100	-0.099	I	1	2	1.712	1.449	1	34012- 7521
26493.16	3773.487	3000	-0.155	I	4	4	1.50	1.45	3	31370- 4877
26509.31	3771.188	100	+0.159	II	7/2	5/2	1.193	1.657	1	34945- 8436
26514.47	3770.454	3000R	-0.165	I	7	6	1.48	1.46	2	27728- 1214
26519.82	3769.694	1000	.00	II	9/2	11/2	1.350	1.504	2	32867- 6347
26526.23	3768.783	1000	.00	I	5	5	1.329	1.464	3	31662- 5136
26537.69	3767.155	100	+0.06	II	7/2	7/2	1.284	*1.444	3	35611- 9273
26543.75	3766.295	300	-0.192	II	7/2	7/2	1.723	1.860	3	9012-35556
26551.87	3765.143	300	-0.350	II	11/2	11/2	1.600	1.689	3	12913-39464
26552.95	3764.990	300	-0.275	I	4	3	1.86	*2.112	1	35816- 9263
26566.67	3763.045	10000R	-0.05	I	5	6	1.40	*1.452	2	27780- 1214
26575.80	3761.753	300		I	4	5	1.45	1.45	4	31712- 5136
26575.98	3761.727	300	-0.267	II	13/2	11/2	1.39	1.50	1	32923- 6347
26602.96	3757.912	300	-0.146	I	3	3	1.997	1.455	3	302-26905
26604.99	3757.625	1008	-0.07	I	2	3	1.139	1.464	2	
26649.08	3751.408	100	-0.095	I	2	3	2.000	1.467	1	33857- 7208
26655.43	3750.515	300	-0.374	II	11/2	13/2	1.58	1.55	1	12913-39568
26674.29	3747.863	10000R	-0.224	I	6	6	1.386	1.454	3	27888- 1214
26682.24	3746.746	300	-0.120	I			1.52	1.52	4	
26689.42	3745.738	1000	.00	I	3	2	1.32	1.44	1	34210- 7521
26707.12	3743.255	300	+0.131	II	9/2	11/2	1.376	1.506	2	33055- 6347
26716.61	3741.926	100	-0.254	I			1.63	1.63	4	
26721.72	3741.210	300		I	3	4	1.578	*1.450	1	31599- 4877
26722.38	3741.118	3008		I	4	4	1.775	1.549	3	815-27538
26727.87	3740.349	1000	-0.506	I	3	3	1.999	1.510	3	302-27030
26735.21	3739.322	1000	-0.181	II	9/2	7/2	1.38	1.48	1	33802- 7067
26742.81	3738.260	300		II	3/2	5/2	1.60	*1.656	2	35178- 8436

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	ODD-EVEN
26750.94	3737.124	300	-.129	II	9/2	11/2	1.47	1.42	1 30692- 3941
26751.70	3737.018	300	-.505	I	5	4	*1.672	1.557	2 1764-28515
26761.98	3735.582	300	-.394	I	5	4	*1.672	1.62	2 1764-28526
26779.41	3733.151	3000R	-.329	I	2	2	2.563	2.218	3 0-26779
26785.15	3732.351	10000R	+.02	I	5	4	1.33	*1.450	1 31662- 4877
26785.79	3732.262	100	+.176	II					
26801.10	3730.129	1000	-.609	I	6	6	1.628	1.275	3 3809-30610
26805.89	3729.462	300	-.207	II	5/2	5/2	1.960	2.260	3 8474-35280
26809.19	3729.004	10000R	-.337	I	4	3	1.80	1.80	4 815-27624
26813.59	3728.392	300	-.179	I	5	5	1.40	*1.463	3 31950- 5136
26821.97	3727.227	1000	.00	I	4	3	0.962	1.470	1 34030- 7208
26835.23	3725.385	3000R	-.08	I	3	4	1.41	1.47	2 31712- 4877
26841.55	3724.508	3000R	+.07	I	4	5	1.37	1.47	2 31978- 5136
26851.34	3723.150	300	-.04	I	1	0	2.138	0.0	4 35738- 8887
26855.30	3722.601	300	-.04	II	7/2	5/2	1.379	1.651	1 35291- 8436
26859.12	3722.072	300	+.237	II	11/2	11/2	1.193	1.429	3 30800- 3941
26875.36	3719.822	300	-.568	I	5	5	1.675	1.296	3 1764-28639
26883.02	3718.762	100	.00	II	5/2	5/2	1.235	1.665	3 35319- 8436
26887.33	3718.166	300	+.170	II	9/2	11/2	1.312	1.501	2 33235- 6347
26896.84	3716.852	100	+.183	II	7/2	9/2	1.161	1.521	2 32816- 5919
26898.31	3716.648	300	-.09	I	2	1	1.200	1.450	1 35594- 8696
26898.79	3716.583	100	+.394	II	7/2	7/2	1.194	*1.444	3 35972- 9073
26901.23	3716.244	300	-.158	I	6	5	1.256	1.468	1 32037- 5136
26917.58	3713.988	300	-.087	II	11/2	11/2	1.38	1.49	3 33265- 6347
26924.10	3713.088	100	-.200	I	3	4	2.175	1.576	1 10484-37408
26932.73	3711.898	100	-.230	I	3	4	1.71	1.58	1 9458-36390
26935.21	3711.556	100	+.273	II	7/2	7/2	1.22	*1.444	3 36008- 9073
26935.64	3711.498	300	.00	I	2	2	1.524	1.454	3 34465- 7521
26939.15	3711.014	1000	+.05	I	4	3	1.078	1.462	1 34147- 7208
26948.48	3709.729	100	.00	II	9/2	9/2	1.341	1.528	3 32867- 5919
26950.68	3709.426	10000R	.00	I					2
26955.80	3708.722	300	-.220	II	1/2	3/2	3.065	1.817	1 36083- 9127
26956.43	3708.635	300	+.153	II	5/2	7/2	1.38	1.48	2 34023- 7067
26961.04	3708.001	1000	-.286	I	3	2	2.006	1.286	2 302-27263
26964.06	3707.586	3000R	-.407	I	3	2	2.003	1.576	2 302-27266
26965.32	3707.412	300	-.549	I	4	4	1.76	1.31	3 815-27780
26986.09	3704.559	300	-.486	I	3	4	2.004	1.595	1 302-27288
27001.71	3702.415	300	.00	I	3	3	1.336	1.466	3 34210- 7208
27018.53	3700.110	300	-.501	I	4	3	1.782	1.490	2 815-27834
27028.30	3698.773	100	-.334	I	4	5	*1.778	1.576	1 815-27843
27071.45	3692.878	300	-.04	I	3	2			1 34592- 7521
27072.50	3692.734	300	-.172	I	5	4			1 31950- 4877
27075.74	3692.292	3000	+.168	II	11/2	13/2	1.050	1.498	2 29169- 2093
27080.79	3691.604	300	-.202	II	3/2	5/2	2.671	2.263	1 8199-35280
27081.47	3691.511	300	-.184	II	5/2	7/2			A 8474-35556
27100.45	3688.925	3000	+.07	I	4	4	1.358	1.453	3 31978- 4877
27119.00	3686.402	100		I	2	1	1.337	1.451	1 35815- 8696
27121.92	3686.005	100		I	5	5	1.67	1.62	3 1764-28886
27149.84	3682.215	300	-.13	II	5/2	7/2	1.257	1.444	2 36223- 9073
27154.02	3681.648	3008	-.397	I			0.545	0.982	1
27154.07	3681.641	1008		I	2	1			2 9671-36825
27171.56	3679.271	100	.00	II	7/2	9/2	1.46	1.53	2 33090- 5919
27192.89	3676.385	100	+.243	II	11/2	11/2	1.078	1.420	3 31134- 3941
27214.83	3673.421	3000	-.116	I	3	4	1.275	1.458	2 32092- 4877
27218.06	3672.984	300	.00	I	2	3	2.358	2.097	1 36481- 9263
27225.26	3672.014	100	.00	II	9/2	11/2	1.43	1.43	4 31166- 3941
27228.57	3671.567	3000R	-.517	I	5	4	1.680	1.509	2 1764-28992
27234.19	3670.810	100	-.304	I	4	5	1.916	1.486	1 10971-38205
27237.29	3670.392	300	-.05	II	5/2	7/2	1.615	*1.485	1 34304- 7067
27246.44	3669.159	100	.00	II	11/2	9/2	1.192	1.395	1 35390- 8144
27247.93	3668.958	300	+.07	I	2	3	1.525	1.464	1 34465- 7208
27266.21	3666.499	100	-.406	I	2	2	2.566	1.576	3 0-27266
27282.28	3664.340	10000R	-.360	I	4	3	1.77	1.77	4 815-28097
27289.83	3663.325	100	+.10	II			0.136	1.668	2
27310.53	3660.549	3008	-.269	I	5	4	1.55	1.45	2 32188- 4877

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
27315.88	3659.831	100	+205	II	9/2	7/2	1.143	*1.485	1	34383- 7067
27317.12	3659.666	3000R	+13	I	6	5	1.281	1.456	1	32453- 5136
27322.68	3658.920	300	-329	I	3	3	2.003	1.762	3	302-27624
27330.38	3657.890	100	-237	I	4	5	*1.893	1.579	1	10971-38301
27332.18	3657.648	100	-226	I	2	2	1.94	1.30	3	9671-37003
27346.22	3655.771	300	-097	II	11/2	9/2	1.382	1.516	1	33265- 5919
27349.71	3655.305	100	-03	I	3	3			3	36613- 9263
27352.99	3654.866	3000R	-319	I	6	5	1.63	1.67	1	3809-31162
27369.08	3652.717	100	-650	II	9/2	7/2	1.821	1.463	2	5067-32436
27369.71	3652.633	300	-269	I	5	4			2	32247- 4877
27374.77	3651.958	1000	.00	II	11/2	11/2	1.72	1.78	3	6202-33577
27401.27	3648.427	1000	-225	II	11/2	11/2	1.43	1.50	3	33749- 6347
27464.69	3640.001	300		I	4	3	1.773	1.003	2	815-28280
27465.12	3639.944	10000R	-430	I	5	4	1.66	1.60	2	1764-29229
27492.99	3636.255	300	+220	I	4	4	1.159	1.445	3	32370- 4877
27500.60	3635.249	100	+168	I	1	1	1.598	1.458	3	36197- 8696
27527.69	3631.671	1000	-602	I	5	5	1.673	1.331	3	1764-2929
27569.46	3626.168	1000	-05	I	4	4	1.40	1.45	3	32447- 4877
27575.35	3625.393	100	+130	I	5	4	1.282	*1.450	1	32452- 4877
27590.94	3623.344	300	+134	I	3	2	1.40	*1.457	1	35112- 7521
27617.79	3619.822	1000R	-384	I	6	5	1.62	1.62	4	3809-31427
27624.83	3618.899	300	-330	I	2	3	*2.564	1.766	1	0-27624
27625.71	3618.785	300	-723	II	7/2	5/2	1.934	1.601	2	0-27625
27648.66	3615.780	100	-244	I	4	3	1.778	0.980	2	815-28464
27650.14	3615.587	300	-434	II	11/2	9/2	1.72	1.64	2	6202-33852
27660.02	3614.296	1000	+193	I	4	5	1.365	1.466	2	32796- 5136
27676.34	3612.164	100	-090	II	11/2	9/2	1.237	1.397	1	35820- 8144
27690.06	3610.375	300	+113	I	2	2	1.52	1.45	3	35211- 7521
27692.90	3610.004	100	+03	I	3	2	1.41	1.46	1	35213- 7521
27700.31	3609.038	100	-498	I	4	4	1.781	1.557	3	815-28515
27710.59	3607.700	300R	-388	I	4	4	*1.778	1.621	3	815-28526
27711.73	3607.551	1000	+188	I	4	3	1.172	1.463	2	34920- 7208
27719.88	3606.490	1000R	-577	I	5	5	1.669	1.400	3	1764-29484
27754.71	3601.964	100	.00	II	9/2	7/2	1.250	1.486	1	34821- 7067
27765.11	3600.615	10000R	-395	I	4	4	1.780	1.626	3	815-28580
27771.41	3599.798	100	-610	I	6	5	1.633	1.235	2	3809-31580
27773.77	3599.492	100	+06	I	3	4	1.40	1.45	2	32651- 4877
27777.60	3598.996	100	-671	II	9/2	9/2	1.819	1.378	3	5067-32845
27789.94	3597.398	100	+170	II	5/2	7/2	1.352	1.494	2	34857- 7067
27793.72	3596.908	100	-268	I	5	6	1.75	1.62	1	11641-39435
27795.31	3596.703	1000R	-343	I	5	6	*1.672	1.565	1	1764-29559
27823.95	3593.001	300B	-277	I	5	4	1.57	1.70	1	9064-36888
-----		300B		I	4	5	*1.778	1.290	1	815-28639
27834.18	3591.681	300	-498	I	2	3	*2.564	1.48	1	0-27834
27835.73	3591.480	300	+228	II	11/2	11/2	1.225	1.426	3	31777- 3941
27847.69	3589.937	3000R	-398	I	4	3	*1.778	1.666	2	815-28663
27851.75	3589.415	3000R	-04	I	6	6	1.41	*1.452	3	29065- 1214
27857.25	3588.706	1000R	-416	I	2	2	2.565	1.525	3	0-27857
27857.74	3588.642	100	.00	I	5	4	1.050	*1.450	1	32735- 4877
27879.08	3585.896	100	+117	I	3	2			4	35400- 7521
27883.06	3585.383	1000B	-185	II	9/2	9/2			3	33802- 5919
-----		100B		I	4	3			1	35091- 7208
27903.26	3582.789	100	+136	I	3	3	1.414	1.464	3	35112- 7208
27916.88	3581.040	1000	-444	II	9/2	7/2	*1.826	1.747	2	5067-32984
27928.24	3579.584	300	+237	I	5	5	1.146	1.465	3	33064- 5136
27939.56	3578.133	3000	-06	I	5	6	1.38	*1.452	2	29153- 1214
27946.05	3577.302	100	-09	I	4	5	1.243	1.469	2	33082- 5136
27952.42	3576.487	3000R	+179	I	6	5	1.246	1.463	2	33088- 5136
27963.48	3575.072	100	-326	I	7	8	*1.630	1.384	1	13720-41683
27969.48	3574.305	300	+253	I	6	6	1.247	1.452	3	29183- 1214
27978.27	3573.182	100	-578	I	3	3	*2.001	1.008	3	302-28280
27980.10	3572.949	10000	-512	II	7/2	5/2	*1.934	2.039	1	0-27980
27987.80	3571.966	300	+06	I	4	4	1.252	1.446	3	32865- 4877
27999.78	3570.437	1000	-426	II	7/2	5/2	2.07	1.93	2	4411-32411
28005.35	3569.727	100	-04	I	3	4	1.45	1.45	4	32882- 4877

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
28017.89	3568.129	1000	-.517	I	4	3	1.781	1.395	2	815-28833
28023.80	3567.376	3000	-.429	II	5/2	3/2	2.492	2.930	1	4010-32034
28024.03	3567.347	100	-.270	II	7/2	5/2			A	38457-10433
28025.44	3567.167	300	-.658	II	7/2	7/2	2.023	1.452	3	4411-32436
28035.60	3565.875	300JR	-.481	I	2	1	2.568	2.109	2	0-28035
28039.60	3565.366	300		I	5	4	1.787	1.461	1	32917- 4877
28065.80	3562.038	3000R	-.373	I	5	6	1.67	1.53	1	1764-29830
28070.53	3561.437	10000R	-.352	I	4	5	1.779	1.630	1	815-28886
28073.87	3561.014	100	-.08	I	2	2	1.19	1.44	3	35594- 7521
28097.91	3557.967	3000R	-.356	I	2	3	2.564	1.786	1	0-28097
28101.81	3557.474	300	+.11	I	3	3	1.46	1.46	4	35310- 7208
28112.19	3556.160	100	-.08	I	7	8	1.641	1.312	1	13720-41832
28128.91	3554.046	100	-.273	I	6	7	1.68	1.35	1	12534-40663
28130.28	3553.873	100	+.167	I	3	2	1.240	*1.457	1	35651- 7521
28152.76	3551.036	300	-.271	I	6	7	1.677	1.354	1	12534-40687
28158.63	3550.294	100B	-.261	II	13/2	13/2	1.48	1.50	3	30252- 2093
28158.63	3550.294	100B	-.261	II	5/2	5/2	1.82	1.46	3	
28162.16	3549.850	100	-.244	I	3	3	*2.001	0.984	3	302-28464
28172.30	3548.572	300	-.559	I	5	4			2P	1764-29936
28177.17	3547.958	3000R	-.511	I	4	4	1.778	1.496	3	815-28992
28177.46	3547.922	10000R	-.401	I	3	2	2.00	2.00	4	302-28479
28184.65	3547.018	10000R	-.395	I	5	5	1.675	1.526	3	1764-29948
28187.13	3546.705	300	+.241	I	5	4			1	33064- 4877
28191.53	3546.151	3000	-.476	II	7/2	7/2	1.934	1.747	3	0-28191
28192.58	3546.019	1000	+.234	I					1	
28213.82	3543.349	3000R	-.497	I	3	4	2.001	1.553	1	302-28515
28224.10	3542.059	10000R	-.394	I	3	4	2.003	1.625	1	302-28526
28225.90	3541.833	3000R	+.206	I	6	5	1.135	*1.463	1	33362- 5136
28232.67	3540.984	100	-.741	II	7/2	7/2	1.933	1.543	3	0-28232
28254.38	3538.263	300	-.251	II	11/2	11/2	1.35	1.44	3	32195- 3941
28270.61	3536.231	100	+.198	I	3	4	1.013	1.446	2	33148- 4877
28278.60	3535.232	3000R	-.393	I	3	4	2.000	1.618	1	302-28580
28286.05	3534.302	300	.00	II	5/2	7/2	1.40	1.43	2	37359- 9073
28319.86	3530.082	100	+.107	II	9/2	9/2	1.229	1.410	3	36464- 8144
28327.05	3529.186	300	-.263	I	3	3	2.000	1.003	3	302-28629
28329.99	3528.820	300	-.644	II	11/2	11/2	1.711	1.315	3	6202-34532
28336.04	3528.066	100	-.05	II	9/2	11/2	1.48	*1.500	2	34683- 6347
28340.93	3527.457	100	-.436	I	2	2	1.948	2.044	3	9671-38012
28361.18	3524.938	10000R	-.392	I	3	3	2.001	1.677	3	302-28663
28381.98	3522.355	10000R	-.432	I	2	1	2.562	3.043	1	0-28381
28400.66	3520.038	1000	-.422	II	5/2	5/2	2.494	2.072	3	4010-32411
28403.50	3519.687	300	+.154	I	4	3	1.27	*1.465	1	35612- 7208
28413.73	3518.419	3000R	-.421	I	4	4	1.779	1.610	3	815-29229
28439.49	3515.232	100	+.200	I	6	5			1	33576- 5136
28476.35	3510.682	300	+.182	II	11/2	11/2			3	32417- 3941
28479.62	3510.279	10000R	-.422	I	2	2	2.565	2.018	1	0-28479
28496.96	3508.143	300	-.187	I	5	5	1.56	1.66	3P	9064-37561
28509.29	3506.626	1000	+.04	II	9/2	11/2	*1.826	1.77	1	5067-33577
28521.69	3505.101	100	.00	II	5/2	5/2	1.271	1.654	3	36957- 8436
28530.91	3503.968	1000	-.476	I	4	3	*1.778	1.617	2	815-29346
28531.38	3503.911	3000	-.527	I	3	3	2.000	1.391	3	302-28833
28541.00	3502.730	100	.00	II	11/2	11/2	1.38	*1.500	3	34888- 6347
28573.23	3498.779	3000	-.445	II	7/2	7/2	2.028	1.746	3	4411-32984
28598.30	3495.711	100	.00	I	4	4	1.245	1.445	3	33475- 4877
28606.76	3494.677	100	-.628	II	5/2	3/2	2.495	1.695	2	4010-32617
28620.72	3492.972	300	+.06	I	3	4	1.335	1.455	2	33498- 4877
28629.19	3491.939	100	-.272	I	2	3	2.560	1.005	1	0-28629
28638.65	3490.785	300	+.156	II	9/2	11/2	1.315	1.501	2	34986- 6347
28641.20	3490.475	100	-.523	I	4	3			4	815-29456
28663.33	3487.780	3000	-.396	I	2	3	2.566	1.678	1	0-28663
28675.63	3486.284	300	-.438	I	5	4	1.69	1.57	2	1764-30439
28690.66	3484.457	100	-.497	I	3	4	2.003	1.500	1	302-28992
28706.69	3482.512	1000	+.233	II	11/2	13/2	1.205	1.509	2	30800- 2093
28707.48	3482.416	3000	+.06	I	7	6	1.31	*1.452	1	29921- 1214
28784.66	3473.078	3000	-.431	II	9/2	9/2	1.818	1.632	3	5067-33852

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
28805.00	3470.626	100	-.223	I	5	6	1.761	1.537	1	11641-40446
28808.87	3470.159	300	-.398	I	5	5	1.68	1.46	3	1764-30573
28833.53	3467.191	300	-.517	I	2	3	2.568	1.396	1	0-28833
28846.18	3465.670	1000	-.600	I	5	6	1.667	1.274	1	1764-30610
28881.04	3461.488	300	+.164	I	4	4	1.514	1.448	3	33758- 4877
28884.53	3461.070	100		I	2	3	1.293	1.704	2	
28907.34	3458.338	10000R	+.11	I	5	6	1.246	1.459	2	30121- 1214
28921.99	3456.587	1000	+.233	I	5	5	1.176	1.463	3	34058- 5136
28926.28	3456.074	100	+.07	II	9/2	11/2	1.38	1.42	2	32867- 3941
28929.01	3455.747	1000	-.505	I	5	4	1.680	1.510	2	1764-30693
28944.28	3453.925	100	-.252	I			0.850	1.59	3	
28952.68	3452.922	10000R	-.361	I	6	6	*1.626	1.65	3	3809-32762
28959.18	3452.147	100	-.377	I	3	3	1.706	1.473	3	9458-38417
28974.11	3450.368	100	-.449	II	5/2	7/2	2.496	1.749	1	4010-32984
28982.62	3449.355	100		I	2	2	2.566	0.581	3	0-28982
28993.20	3448.097	100		I	5	5	1.74	1.45	3	11641-40634
28995.68	3447.802	100	-.464	I	2	2	*1.953	1.455	3P	9671-38667
29013.34	3445.703	100		I	5	4	1.179	1.433	1	33890- 4877
29023.85	3444.455	100		I	4	5	1.893	1.477	1	10971-39995
29040.43	3442.488	100		II	11/2	13/2	1.089	1.499	2	31134- 2093
29042.83	3442.204	300		II	11/2	11/2	1.19	1.49	3	35390- 6347
29070.69	3438.905	100		I	2	3	1.657	1.461	1	36279- 7208
29103.50	3435.028	200B		II	9/2	7/2	1.826	1.545	2	5067-34171
-----		100B		II	7/2	5/2	1.34	1.30	2	39537-10433
29121.44	3432.912	300		I	4	3	1.77	1.38	2P	815-29937
29133.26	3431.519	1000		I	4	5	1.772	1.519	1	815-29948
29141.30	3430.572	100	-.382	I	3	3	1.703	1.385	3	9458-38599
29144.10	3430.243	100	-.433	I	5	4	1.565	1.366	2	9064-38208
29152.45	3429.261	100B		I	5	5			3	1764-30916
-----		100B		I	4	3	1.61	1.52	2	8958-38110
29175.91	3426.503	3000	-.543	II	11/2	11/2	1.718	1.366	3	6202-35378
29180.90	3425.917	1000R		I	5	4	1.183	*1.450	1	34058- 4877
29195.36	3424.220	300		II	11/2	9/2	1.71	1.77	1	6202-35397
29217.53	3421.621	1000R		I	5	6	1.36	1.45	2	30431- 1214
29250.52	3417.762	300		I	4	4	*1.605	1.36	3	8958-38208
29253.56	3417.407	100		II	3/2	5/2				37789- 8436
-----				II	9/2	7/2				38327- 9073
29254.48	3417.299	3000	-.550	II	11/2	11/2	1.714	1.368	3	6202-35456
29269.16	3415.585	3000R		I	6	6	1.35	1.45	3	30483- 1214
29346.57	3406.576	1000	-.502	I	2	3	2.563	1.627	1	0-29346
29398.07	3400.608	300	-.25	I	5	5	1.67	1.68	3	1764-31162
29414.80	3398.674	300	-.501	I	4	4	1.602	1.395	3	8958-38373
29419.16	3398.170	300		I	3	2	2.002	1.849	2	302-29721
29436.94	3396.118	100		I	3	4			2	34314- 4877
29437.40	3396.064	300		I	5	6	1.208	*1.452	2	30651- 1214
29441.03	3395.646	1000	-.445	II	7/2	9/2	2.025	1.628	1	4411-33852
29445.64	3395.114	100		I	2	3	1.952	1.694	1	9671-39117
29447.41	3394.910	300		I	4	5	1.197	*1.463	2	34583- 5136
29447.64	3394.884	300		I	4	3	*1.777	1.53	2	815-30263
29456.85	3393.822	1000R	-.523	I	2	3	2.564	1.760	1	0-29456
29458.78	3393.600	100		I	4	3	1.61	1.48	2	8958-38417
29474.78	3391.758	100		I	4	4	1.605	1.320	3	8958-38433
29477.20	3391.479	300		II	7/2	5/2	1.936	1.389	2	0-29477
29490.96	3389.897	300		I	3	4	2.176	1.641	1	10484-39975
29498.15	3389.070	100	-.422	I	5	5	1.572	1.336	3	9064-38563
29498.31	3389.052	100		I					3	
29557.87	3382.223	300	-.470	I	4	3	*1.778	1.606	2	815-30373
29604.60	3376.884	300	-.440	I	4	5	*1.605	1.330	1	8958-38563
29606.27	3376.693	1000		I	5	4	1.31	1.44	1	34483- 4877
29611.53	3376.094	300	-.500	I	5	5	1.575	1.345	3	9064-38676
29620.56	3375.064	3000R		I	5	6	1.36	1.46	2	30834- 1214
29623.80	3374.696	10000R	-.374	I	6	7	*1.626	1.54	1	3809-33433
29624.23	3374.646	300		I	4	4	*1.778	1.551	3	815-30439
29634.43	3373.485	1000	-.559	I	3	4			1P	302-29936
29634.94	3373.426	300		I	3	3			3P	302-29937

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBR	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-U	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E TYPE	
29662.88	3370.249	1000	-.388	I	5	5		3	1764-31427
29671.23	3369.300	100		II	9/2	9/2	1.121	1.402 3	37815- 8144
29683.28	3367.932	300		II	11/2	13/2	1.230	1.501 2	31777- 2093
29703.78	3365.607	1000R	-.380	I	5	4	*1.672	1.545 2	1764-31468
29706.31	3365.321	300	+.274	I	4	4	1.200	1.444 3	34583- 4877
29721.32	3363.622	1000R		I	2	2	2.565	1.840 3	0-29721
29724.27	3363.288	1000R	-.362	I	3	2	*2.031	2.177 1	302-30026
29744.80	3360.966	100	-.460	I	3	2	1.71	1.68 2	9458-39202
29757.47	3359.535	1000R	-.386	I	4	5	1.777	1.454 1	815-30573
29780.47	3356.940	100		II	9/2	11/2	1.250	*1.500 2	36128- 6347
29784.03	3356.539	300		I	4	5	1.175	1.466 2	34920- 5136
29807.73	3353.870	300	-.190	II	11/2	11/2	1.43	1.42 3	33749- 3941
29814.52	3353.107	100		II	11/2	9/2	1.163	*1.400 1	37958- 8144
29814.67	3353.089	100		I			DG =	0.206 1	
29816.50	3352.884	100		I	5	5	*1.672	1.242 3	1764-31580
29817.97	3352.718	100		I			DG =	0.730 2	
29821.64	3352.306	300		I	6	5	1.628	1.417 2	3809-33630
29861.30	3347.854	300		I	5	6	1.40	1.47 2	31075- 1214
29884.83	3345.218	100		I	2	3	2.860	1.978 1	10144-40029
29901.40	3343.364	100		II	11/2	9/2	1.238	1.526 1	35820- 5919
29908.94	3342.521	300	-.568	I	5	6	1.56	1.48 1	9064-38973
29937.10	3339.377	300	-.508	I	2	3	2.563	1.391 1P	0-29937
29955.36	3337.341	100		I	4	5	1.156	1.459 2	35091- 5136
29957.29	3337.126	100		I	5	4	1.669	1.411 2	1764-31721
29961.16	3336.695	300	-.526	I	3	3	1.997	1.582 3	302-30263
29966.69	3336.079	300	-.472	I	5	4	1.667	1.194 2	1764-31730
29982.38	3334.333	1000		II	11/2	11/2	1.211	1.494 3	36330- 6347
30005.44	3331.771	3000R		I	6	6	1.301	1.446 3	31219- 1214
30015.18	3330.689	300		I	5	5	1.259	1.462 3	35151- 5136
30019.54	3330.205	100		I					
30026.44	3329.440	100		I	2	2	2.562	2.181 3	0-30026
30065.21	3325.147	300		II	13/2	11/2	1.229	1.496 1	36413- 6347
30071.36	3324.466	1000R	-.414	I	3	3	2.000	1.600 3	302-30373
30101.04	3321.189	300	-.496	I	4	5	1.775	1.299 1	815-30916
30106.72	3320.562	1000	-.365	I	4	3	1.77	1.82 1	815-30922
30116.26	3319.510	100		II	9/2	11/2	1.218	1.492 2	36464- 6347
30122.75	3318.795	100		I	5	5	1.566	1.346 3	9064-39187
30137.75	3317.143	1000R	-.426	I	3	4	1.999	1.545 1	302-30439
30158.89	3314.818	100	-.454	I	4	3	1.60	1.53 1	8958-39117
30185.51	3311.895	3000R	-.248	I	6	5	1.63	1.59 2	3809-33994
30190.15	3311.386	1000	-.429	I	5	4	*1.672	1.516 2	1764-31954
30216.14	3308.567	300R	-.422	I	2	2	2.556	1.834 3	0-30216
30220.42	3308.068	300R	-.476	I	4	3	1.776	1.512 2	815-31036
30238.92	3306.044	300		I			0.53	0.92 1	
30248.48	3304.999	300		II	9/2	11/2	1.220	*1.500 2	36596- 6347
30249.86	3304.849	10000R	-.396	I	7	6	1.315	1.453 1	31464- 1214
30263.30	3303.381	100		I	2	3	2.565	1.594 1	0-30263
30274.08	3302.205	300		I	5	4	1.273	1.453 1	35151- 4877
30295.69	3299.850	300		I	5	5	1.577	1.444 3	9064-39360
30310.42	3298.246	300	-.569	II	9/2	11/2	1.837	1.376 1	5067-35378
30324.56	3296.708	10000	-.300	II	11/2	9/2	1.71	1.71 4	6202-36526
30329.88	3296.130	1000		II	9/2	9/2	1.83	1.78 3	5067-35397
30330.42	3296.071	100		I	4	4	1.61	1.50 3	8958-39288
30346.68	3294.304	1000	-.282	I	4	5	*1.778	1.670 1	815-31162
30373.51	3291.395	1000R	-.459	I	2	3	2.567	1.603 1	0-30373
30389.01	3289.716	100	-.560	II	9/2	11/2	*1.826	1.374 1	5067-35456
30391.13	3289.486	3000R	-.511	I	3	4	1.994	1.495 1	302-30693
30425.56	3285.764	3000R	-.219	I	5	4	*1.672	1.787 1	1764-32189
30433.02	3284.958	100		I	3	4	1.43	1.43 4	35310- 4877
30448.54	3283.284	1000R		I	5	6	1.336	1.458 2	31662- 1214
30463.68	3281.652	300		II	7/2	7/2	1.34	1.44 3	39537- 9073
30464.32	3281.583	300		II	11/2	11/2	1.288	1.495 3	36812- 6347
30474.84	3280.450	10000R	-.335	I	5	6	*1.672	1.548 1	1764-32239
30475.80	3280.347	100		I	4	5	1.25	*1.463 2	35612- 5136
30481.13	3279.773	100		I	6	5	1.63	1.47 2	3809-34290

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		TYPE	LEVELS ODD-EVEN
							-O	-E		
30488.34	3278.998	3000	-.240	II	9/2	7/2	1.82	1.86	1	5067-35556
30490.51	3278.764	300		II	11/2	9/2	1.279	*1.400	1	38634- 8144
30493.11	3278.485	100		II	11/2	9/2	*1.716	1.128	2	6202-36695
30507.87	3276.898	300	-.570	I	6	5	1.626	1.404	2	3809-34317
30544.88	3272.927	100		II	9/2	9/2	1.217	1.522	3	36464- 5919
30561.00	3271.201	300		II	15/2	13/2	1.220	1.496	1	32654- 2093
30584.24	3268.716	100		I	3	2	1.998	1.807	2	302-30886
30611.48	3265.806	10000R	-.356	I	4	5	*1.778	1.638	1	815-31427
30620.22	3264.874	3000	-.326	I	3	3	1.993	1.829	3	302-30922
30676.82	3258.850	1000	-.491	I	5	4	1.666	1.297	2	1764-32441
30716.82	3254.606	1000	-.312	I	6	5	1.636	1.498	2	3809-34526
30734.73	3252.710	1000		I	4	4			3	35612- 4877
30735.06	3252.675	100008		I	7	6	1.323	1.452	1	31949- 1214
-----		3008			5	4			1	35612- 4877
30737.82	3252.383	100		I	4	3				37946- 7208
30742.49	3251.889	3000		II	9/2	11/2	1.46	1.41	1	34683- 3941
30744.84	3251.640	100		II	5/2	5/2			4	41178-10433
30759.83	3250.056	3000		I	4	5			2	35896- 5136
30762.19	3249.806	300		II	7/2	7/2	1.208	1.485	3	37829- 7067
30765.10	3249.499	3000	-.599	I	4	5	1.774	1.245	1	815-31580
30766.67	3249.333	100		I	5	5			3	11641-42408
30767.03	3249.295	1000		I	5	5			3	35903- 5136
30768.06	3249.186	300		II	5/2	5/2	1.239	1.653	3	39204- 8436
30769.49	3249.035	300		II	5/2	7/2	1.196	*1.444	A	39843- 9073
30778.06	3248.131	300	-.401	I	3	2	1.998	1.737	2	302-31080
30780.06	3247.920	300	-.265	II	9/2	7/2	1.648	1.288	2	15559-46339
30790.88	3246.779	300		II	11/2	9/2	1.082	*1.527	1	36710- 5919
30794.30	3246.418	3000	+.187	I	5	5	1.28	*1.463	3	35930- 5136
30795.91	3246.247	10000	+.145	I	6	6	1.222	1.446	3	32010- 1214
30804.86	3245.305	100		II	9/2	9/2	DG =	0.265	3	38949- 8144
30805.71	3245.215	100		I	3	3			3	9458-40263
30807.58	3245.018	100	-.581	I					A	
30812.34	3244.516	300		I	5	5			3	11641-42454
30814.49	3244.291	300		I					4	
30823.56	3243.336	3000		I	6	6	1.248	1.446	3	32037- 1214
30825.40	3243.142	100		II	5/2	5/2	DG =	0.205	3	41259-10433
30829.66	3242.694	300		II	7/2	9/2			2	38973- 8144
30830.01	3242.657	10000	-.286	II	13/2	13/2	1.40	1.51	3	32923- 2093
30830.88	3242.566	300	-.496	II	1/2	1/2	-0.02	3.746	3	40632- 9801
30831.90	3242.459	300	-.478	II	11/2	11/2				37179- 6347
30833.82	3242.257	300		II					3	
30840.13	3241.594	3000	-.205	I	4	3	1.775	1.310	2	815-31655
30841.14	3241.487	100		II	7/2	7/2				39914- 9073
30842.19	3241.376	300		II	9/2	7/2	DG =	0.265	2	15559-46401
30843.75	3241.213	100		I	5	5	1.40	1.44	3	35980- 5136
30854.84	3240.048	100	-.338	I						
30857.11	3239.809	3000		II	9/2	7/2	1.278	1.470	1	37924- 7067
30869.13	3238.548	10000	-.259	II	7/2	5/2	2.019	2.241	1	4411-35280
30871.75	3238.272	3008	-.250	II	9/2	9/2			3	10134-41006
30877.21	3237.700	100	+.217	II	13/2	11/2	1.164	1.494	1	37225- 6347
30880.37	3237.369	100		II	9/2	11/2			A	34821- 3941
30883.15	3237.078	1000		II	5/2	5/2	*2.492	1.658	3	4010-34893
30883.67	3237.023	100		I	3	3	*2.001	1.318	3	302-31185
30886.40	3236.737	10000R	-.430	I	2	2	2.568	1.812	3	0-30886
30890.71	3236.285	100		I	4	4	1.20	*1.450	3	35768- 4877
30892.95	3236.050	100		II	11/2	9/2	1.26	*1.527	1	36812- 5919
30900.05	3235.307	100		II	3/2	5/2	0.792	1.657	2	39336- 8436
30905.91	3234.694	1000	-.449	I	4	4	1.774	1.411	3P	815-31721
30910.21	3234.244	300		I	2	3	1.03	*1.465	A	38119- 7208
30910.72	3234.190	300		I	9/2	11/2	1.53	1.51	1	37258- 6347
30910.96	3234.165	300		I	5	4	1.59	1.64	1	9064-39975
30912.74	3233.979	300		I	3	2	*1.705	1.50	2	9458-40370
30915.30	3233.711	100		I	4	4				815-31730
30918.44	3233.383	100		I	2	3	2.89	1.93	1	10144-41063
30924.98	3232.698	100		I					2	

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	TYPE ODD-EVEN
30925.68	3232.626	100		II	7/2	7/2	1.206	*1.485	3 37992- 7067
30930.14	3232.160	100		I	5	5	1.58	1.48	3 9064-39995
30934.25	3231.730	300		II	9/2	9/2	0.6	0.175	3 39078- 8144
30934.99	3231.652	300	-0.168	I	2	3	1.108	1.464	2
30938.35	3231.301	100		II	11/2	9/2	*1.400	1.007	1 39082- 8144
30947.47	3230.349	10000		II	11/2	11/2	1.37	1.42	3 34888- 3941
30948.15	3230.278	10000R	-0.360	I	4	3			1 815-31763
30954.06	3229.662	300		I	3	3	1.29	1.46	3P 38162- 7208
30961.14	3228.923	100		I	5	4	*1.573	1.185	2 9064-40026
30967.57	3228.252	1000		II	11/2	11/2	1.250	1.490	3 37315- 6347
30972.07	3227.784	100		II	9/2	9/2			3 5067-36039
30973.92	3227.591	1000	-0.194	I	5	6	1.55	1.45	1 32188- 1214
30977.94	3227.172	3000	+0.248	I	6	5	1.155	1.462	1 36114- 5136
30982.70	3226.676	1000		I	3	4	*1.705	1.70	4 9458-40440
30985.24	3226.412	10000		II	13/2	11/2	1.38	1.41	1 34926- 3941
30986.25	3226.306	300		II	7/2	9/2	2.020	1.761	1 4411-35397
30995.60	3225.333	1000		II	9/2	9/2	1.63	1.69	3 10134-41130
30997.76	3225.108	10000R	-0.326	I	5	6	1.68	1.58	1 1764-32762
21006.24	3224.226	10000R	-0.390	I	5	4	1.677	1.556	2 1764-32770
31018.73	3222.928	1000	+0.266	I	4	4	1.48	1.46	3 35896- 4877
31020.88	3222.704	100		II	9/2	9/2			3 39165- 8144
31022.12	3222.575	1000		I	4	5	1.184	1.457	2 36158- 5136
31023.61	3222.421	10000R	-0.568	I	5	4	*1.672	1.280	2 1764-32787
31027.20	3222.048	3000	+0.244	I	3	4	1.50	1.44	1 35904- 4877
31033.11	3221.434	1000	-0.251	I	5	6	1.55	1.45	1 32247- 1214
31036.08	3221.126	1000	-0.494	I	2	3	2.563	1.515	1 0-31036
31036.35	3221.098	100		I	6	6			A 3809-34845
31036.57	3221.075	300		I	4	5			A 8958-39995
31039.62	3220.759	10000	-0.409	II	13/2	11/2	1.64	1.66	1 8425-39464
31044.42	3220.261	300		II	9/2	7/2	*1.652	1.348	2 15559-46603
31047.90	3219.900	300		I	4	5	1.17	1.44	2 36184- 5136
31049.03	3219.782	3000	-0.313	I	6	5	*1.626	1.34	2 3809-34858
31049.53	3219.731	300		II	3/2	5/2	1.833	2.086	2
31051.42	3219.535	100		II	11/2	9/2	1.546	*1.400	1 39195- 8144
31065.78	3218.046	300		I					3P
31071.32	3217.473	3008		II	1/2	3/2	1.941	1.173	1
31080.10	3216.563	1008		I			0.634	0.832	1
31080.19	3216.555	30008	-0.359	I	2	2	2.555	1.734	3 0-31080
31087.13	3215.836	100		I	4	3			1 38295- 7208
31095.63	3214.957	100		I	5	4			4 9064-40160
31111.09	3213.360	1000	-0.477	I	3	2	1.997	1.255	2 302-31413
31127.62	3211.654	1000		II	9/2	9/2	1.312	1.517	3 37046- 5919
31132.26	3211.174	100		I	1	1	*2.840	1.480	3 10133-41266
31143.16	3210.050	10000	-0.428	II	13/2	13/2	1.65	1.56	3 8425-39568
31144.20	3209.943	10000R	-0.342	I	3	3	2.00	1.86	3 302-31446
31144.70	3209.892	10000	-0.242	II	7/2	7/2	*2.028	1.856	3 4411-35556
31145.62	3209.797	100	-0.498	I	3	4			9458-40603
31148.65	3209.484	3000	+0.296	I	7	6	1.098	1.447	1 32362- 1214
31165.90	3207.708	10000R	-0.354	I	3	4	1.996	1.534	1 302-31468
31171.61	3207.121	10000		II	11/2	13/2	1.398	1.500	2 33265- 2093
31185.81	3205.660	1000	-0.412	I	2	3	2.564	1.321	1 0-31185
31187.75	3205.461	100		II					1
31191.26	3205.100	1000		I	3	3	1.993	0.908	3 302-31493
31193.68	3204.852	300W	-0.533	I					3
31194.68	3204.749	100	+0.184	II					
31199.51	3204.252	1000	+0.163	II	7/2	9/2	1.257	1.527	2 37118- 5919
31212.36	3202.933	100		II	5/2	7/2	1.151	1.436	2 40285- 9073
31213.96	3202.770	100		II					
31214.58	3202.705	300		I	3	4			2 9458-40672
31228.19	3201.310	300		I	4	4	1.61	1.53	3 8958-40186
31238.76	3200.227	3000		I	5	6	1.27	1.44	2 32452- 1214
31239.42	3200.159	3000		I	6	6	1.293	1.455	3 32453- 1214
31242.16	3199.878	100		I	5	5	1.45	1.45	4 36378- 5136
31260.03	3198.049	1000		II	9/2	7/2	1.230	1.473	1 38327- 7067
31264.29	3197.614	300		I	2	1	2.567	1.972	2 0-31264

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
31270.02	3197.027	3000	-.241	II	5/2	5/2	2.482	2.247	3	4010-35280
31271.99	3196.826	300		I	3	2	2.007	1.161	2	302-31574
31278.80	3196.130	100		I					3	
31281.05	3195.900	300		I	4	4	1.192	1.447	3	36158- 4877
31284.92	3195.504	3000		II	9/2	11/2	1.32	1.42	2	35226- 3941
31299.95	3193.970	100		II	3/2	3/2			3	42550-11250
31300.72	3193.891	3000		II	11/2	11/2	1.339	1.502	3	37648- 6347
31303.52	3193.606	300		II	7/2	5/2	1.21	1.65	1	39739- 8436
31303.75	3193.582	300		II	3/2	5/2	1.481	*1.300	1	41737-10433
31305.31	3193.423	100	-.331	I	4	3	*1.605	1.314	2	8958-40263
31307.94	3193.155	100		II	13/2	13/2	DG =	0.440	3	
31313.92	3192.545	300	-.329	II	9/2	9/2	1.23	1.39	3	39458- 8144
31319.52	3191.974	100		II	1/2	1/2	2.098	-0.416	3	43297-11978
31322.07	3191.714	3000		II	11/2	9/2	1.095	1.398	1	39466- 8144
31330.19	3190.887	100	-.483	I	6	5	1.623	1.230	2	3809-35139
31331.60	3190.743	100		II	3/2	3/2	1.83	1.83	4	40459- 9127
31334.43	3190.455	1000	-.322	II	11/2	9/2	1.610	1.454	2	15737-47071
31335.53	3190.344	300		I	6	6	*1.626	1.146	3	3809-35144
31339.34	3189.956	300		II	9/2	9/2	1.276	1.522	3	37258- 5919
31347.20	3189.156	100	-.283	II	9/2	7/2	*1.826	1.05	2	5067-36415
31353.63	3188.501	300	-.193	I	3	3	*2.001	1.304	3	302-31655
31356.31	3188.229	100	-.479	II						
31357.49	3188.109	10000R	-.233	I	5	5	1.667	1.463	3	1764-33121
31366.97	3187.145	100		II	7/2	7/2	2.023	1.128	3	4411-35778
31374.18	3186.412	10000R	-.209	I	4	4	1.78	1.78	3	815-32189
31375.89	3186.239	300		I	5	4				9064-40440
31381.81	3185.638	300	-.569	I	5	6	1.57	1.53		9064-40446
31391.69	3184.635	300		I	2	3			4	9671-41063
31396.20	3184.177	100		II	11/2	9/2			1	37315- 5919
31413.21	3182.453	300	-.471	I	2	2			3	0-31413
31416.39	3182.131	100		I	5	5			3	36552- 5136
31422.34	3181.529	300	-.548	I	4	5			1	815-32237
31427.32	3181.025	3000		II	13/2	11/2			1	35368- 3941
31428.82	3180.873	100		I	3	4			2	302-31730
31446.36	3179.098	10000R	-.340	I	2	3			1	0-31446
31448.03	3178.930	100	-.524	I	3	2			2	302-31750
31449.29	3178.802	1000		II	11/2	11/2			3	35390- 3941
31456.29	3178.095	100		II	9/2	11/2				35397- 3941
31459.06	3177.816	100		II	9/2	9/2				5067-36526
31459.50	3177.770	3000		I	4	3			2	815-32275
31461.65	3177.554	10000R	-.329	I	3	3			3	302-31763
31469.04	3176.807	100		II	7/2	5/2			1	41902-10433
31471.44	3176.565	300		I	4	5			2	36607- 5136
31471.86	3176.522	1000		I	4	3			2	815-32287
31487.71	3174.924	100		I					3	
31493.41	3174.349	100		I	2	3			A	0-31493
31501.47	3173.537	300		I	4	4			3	815-32317
31507.49	3172.931	300		I					1	
31521.15	3171.556	1000		I	5	6			2	32735- 1214
31523.68	3171.301	100		II	5/2	3/2			A	40651- 9127
31525.99	3171.068	100	-.368	I	6	7			1	3809-35335
31526.97	3170.970	300	-.220	I	3	3			3	9458-40985
31536.79	3169.983	10000		II	9/2	9/2			3	39681- 8144
31540.18	3169.642	300	-.308	II	11/2	11/2			3	15737-47277
31550.36	3168.619	3000	-.216	II	9/2	7/2			2	5067-36618
31561.54	3167.497	1000	-.174	I	7	6	1.24	*1.453	1	32775- 1214
31569.55	3166.693	100		I					3P	
31574.14	3166.232	3000		I	2	2			3	0-31574
31580.04	3165.641	100		II	7/2	5/2			1	9012-40592
31580.80	3165.565	100		I					3	
31585.47	3165.097	3000		II	7/2	9/2			2	37504- 5919
31586.27	3165.016	300		I	5	4			2	1764-33350
31586.62	3164.981	300	+.227	II					3	
31595.31	3164.111	300		II	7/2	9/2			2	39739- 8144
31605.30	3163.110	300	-.561	I	3	3			3	9458-41063

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA			LEVELS ODD-EVEN
							-O	-E	TYPE	
31607.76	3162.865	1000	-.477	I	5	4			1	9064-40672
31626.96	3160.944	100		II	5/2	7/2			2	40700- 9073
31627.79	3160.862	1000		II	11/2	9/2			1	39772- 8144
31629.96	3160.645	1000	+.210	II	11/2	11/2			3	35571- 3941
31635.51	3160.090	100	+.228	II					1	
31645.22	3159.120	300	-.496	I	4	4			3	8958-40603
31650.44	3158.599	10000R	-.388	I	6	6			3	3809-35459
31652.27	3158.417	300		I	3	4			1	302-31954
31655.32	3158.113	100		II	11/2	13/2			A	33749- 2093
31655.79	3158.066	1000		I	2	3			1	0-31655
31673.21	3156.328	300	+.178	II	11/2	13/2			2	33767- 2093
31679.67	3155.685	100		I					1	
31680.69	3155.583	300	-.280	I	3	2			2	302-31982
31692.31	3154.427	300		II	9/2	7/2			1	38759- 7067
31703.01	3153.361	3000		I	5	6			2	32917- 1214
31717.75	3151.896	100		I	5	4			1	9064-40782
31718.60	3151.811	100		II	9/2	11/2			A	15559-47277
31719.64	3151.708	100		I	5	5			3	36856- 5136
31729.37	3150.742	300		II	11/2	9/2			1	37648- 5919
31730.56	3150.623	3000	-.424	I	2	1			2	0-31730
31750.19	3148.676	1000	-.522	I	2	2			3	0-31750
31756.66	3148.034	100	-.366	I					2	
31763.81	3147.325	10000	-.343	I	2	3			1	0-31763
31767.95	3146.915	100		II						
31770.22	3146.690	300		I					1	
31774.37	3146.279	100		I					1	
31776.74	3146.045	3000R	-.477	I	3	2			2	302-32078
31781.82	3145.541	300	-.475	I	6	6	*1.624	1.45	3	3809-35591
31783.19	3145.406	300		I					3	
31798.63	3143.879	3000		II	9/2	7/2			2	5067-36866
31804.60	3143.288	300	+.189	I	3	3			3	39013- 7208
31812.82	3142.477	100	-.535	II	11/2	11/2			3	12913-44725
31816.46	3142.117	100	-.165	II	7/2	5/2			1	40252- 8436
31824.98	3141.276	100		I					4	
31843.57	3139.442	100		II	3/2	1/2			2	43822-11978
31850.55	3138.753	300	+.221	I	5	6			2	33064- 1214
31853.78	3138.436	100	-.456	I					A	
31854.69	3138.346	1000		II					1	
31856.66	3138.152	100	+.188	I	3	4			A	36734- 4877
31859.23	3137.898	300		II	7/2	7/2			3	
31866.73	3137.160	10000R		I	5	5			3	1764-33630
31874.71	3136.375	300		I	6	6			3	33088- 1214
31879.21	3135.932	300		II	11/2	11/2			3	35820- 3941
31882.80	3135.579	100		I	4	3			2	815-32698
31887.68	3135.099	10000R	-.214	I	3	4			1	302-32189
31906.83	3133.217	100		II	7/2	7/2				38973- 7067
31910.04	3132.902	100		II	7/2	9/2			2	37829- 5919
31912.04	3132.705	100	+.183	II	11/2	11/2			3	38259- 6347
31948.44	3129.136	100		I					1	
31952.80	3128.709	3000		II	9/2	9/2			3	40097- 8144
31954.86	3128.508	1000	-.391	I	4	4			3	815-32770
31957.22	3128.276	1000		I	2	1			4	0-31957
31969.23	3127.101	100	+.303	II	11/2	9/2			1	40113- 8144
31973.79	3126.655	100		II					A	
31975.65	3126.474	3000R	-.509	I	2	1			2	0-31975
31977.58	3126.284	100		I					4	
31979.23	3126.124	100		II	9/2	11/2			A	38327- 6347
31980.17	3126.032	100	+.222	I					1	
31983.23	3125.733	300	-.427	I	4	3			2	815-32798
31985.37	3125.523	3000	-.473	I	3	3			3	302-32287
31987.52	3125.313	300	-.420	II	11/2	11/2			3	12913-44900
31988.05	3125.261	100		I					A	
32004.96	3123.610	300		II	9/2	9/2			3	37924- 5919
32011.44	3122.978	100		II	9/2	7/2			1	39078- 7067
32029.41	3121.226	100		I	6	6			3	3809-35838

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA -O -E TYPE	LEVELS ODD-EVEN
32030.94	3121.076	300		I				2
32039.56	3120.236	100	+0.276	II	11/2	9/2		1 37958- 5919
32051.05	3119.118	100	+0.290	I	5	5		3 37187- 5136
32066.27	3117.638	100		II	3/2	3/2		3 43317-11250
32078.89	3116.411	10000R	-0.472	I	2	2		3 0-32078
32098.09	3114.547	300		II	9/2	7/2		1 39165- 7067
32108.27	3113.560	300		II	7/2	9/2		4 40252- 8144
32115.45	3112.863	100	-0.276	II	7/2	9/2		1 4411-36526
32117.91	3112.625	300		II	7/2	9/2		4 9012-41130
32122.07	3112.222	100		I	2	2		3
32138.95	3110.587	100	-0.479	I	3	4		1 302-32441
32142.43	3110.250	300	-0.306	II	9/2	7/2		2P 10134-42277
32148.21	3109.690	10000R	+0.209	I	6	6		3 33362- 1214
32149.44	3109.572	100		I				2
32161.36	3108.419	3000		I				1
32186.94	3105.949	3000	+0.265	II	9/2	11/2		2 36128- 3941
32193.17	3105.348	1000		II	7/2	9/2		2 40337- 8144
32197.65	3104.916	300	-0.381	II	9/2	9/2		3 10134-42332
32205.73	3104.137	100		II	9/2	9/2		3 40350- 8144
32230.59	3101.742	3000R	-0.254	I	5	5		3 1764-33994
32234.23	3101.392	3008		II	11/2	9/2		1 40378- 8144
32238.47	3100.985	300	+0.234	II				1
32243.52	3100.499	300		II	13/2	13/2		3 34337- 2093
32252.31	3099.654	1000		I				2
32257.61	3099.144	100		I				2
32258.67	3099.042	300		I				1P
32271.25	3097.835	100		I	7/2	9/2		2 15457-47728
32278.91	3097.099	1000	-0.522	I	3	2		4 302-32581
32279.21	3097.070	300		II	13/2	11/2		1 38627- 6347
32286.92	3096.330	3000		II	11/2	11/2		3 38634- 6347
32287.51	3096.274	300		I	2	3		1 0-32287
32302.46	3094.841	300		II	5/2	7/2		2 39369- 7067
32309.91	3094.127	100		I				3
32313.15	3093.817	100		I	5	4		2 1764-34077
32349.79	3090.313	100	+0.232	II	9/2	9/2		3 40494- 8144
32351.69	3090.131	1000	-0.687	II				3
32361.83	3089.163	300	-0.346	I	6	6		3 33576- 1214
32369.21	3088.459	300		II	7/2	5/2		1 40805- 8436
32393.60	3086.133	100		I	6	5		1 37530- 5136
32396.02	3085.902	1000		II	5/2	7/2		2 41469- 9073
32396.37	3085.870	100		I	3	3		3 302-32698
32411.53	3084.426	300		II	9/2	11/2		2 38759- 6347
32466.64	3079.190	300		I				2
32468.36	3079.027	1000	-0.386	I	3	4		1 302-32770
32470.14	3078.858	300		II	7/2	7/2		3 39537- 7067
32478.12	3078.102	300		I	5	5		3 37614- 5136
32491.40	3076.844	300		II	5/2	7/2		1 8474-40966
32491.59	3076.826	300		I	5	4		2 1764-34255
32496.71	3076.341	1000	-0.438	I	3	3		3 302-32798
32504.73	3075.581	3000		I	6	5		4 3809-36314
32522.71	3073.882	300	+0.282	II	9/2	11/2		2 36464- 3941
32526.23	3073.549	300	-0.522	I	5	5		3 1764-34290
32527.28	3073.450	100		II	9/2	9/2		3 40671- 8144
32534.89	3072.731	100		I	4	4		3 815-33350
32540.85	3072.168	100		II	5/2	5/2		3 40976- 8436
32544.97	3071.778	100		I				2
32550.63	3071.244	100	-0.596	II	5/2	5/2		3 42984-10433
32563.90	3069.993	1000		I	5	6		1
32573.10	3069.126	100	-0.378	II	11/2	11/2		3 15737-48310
32603.86	3066.230	100		I				2
32607.62	3065.877	100		II	5/2	7/2		1 4010-36618
32613.96	3065.280	1000	+0.307	II	9/2	7/2	000E	39681-7067
32616.46	3065.045	100		II	5/2	3/2	000E	43867-11250
32632.60	3063.530	300		II	13/2	11/2	000E	38980-6347
32635.11	3063.294	300		II	7/2	7/2	000E	41708-9073

See pages 461-463 for Explanation of Table

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA -O -E TYPE	LEVELS ODD-EVEN
32641.07	3062.735	300	-.400	II	9/2	11/2	2	10134-42775
32650.92	3061.811	300	+.248	I	11/2	13/2	1	
32654.31	3061.493	100	-.256	I			3	
32676.75	3059.391	1000	+.185	I	5	6	2	33890- 1214
32683.45	3058.763	100		I	2	2	3	40204- 7521
32687.81	3058.355	100		I			3	
32702.62	3056.970	1000R	-.362	I	4	4	3	815-33518
32730.64	3054.353	1000		II	9/2	11/2	2	39078- 6347
32734.75	3053.969	300		II	11/2	11/2	3	39082- 6347
32761.89	3051.439	100	-.256	I	5	5	3	1764-34526
32768.69	3050.807	100	-.542	II	11/2	11/2	3	36710- 3941
32791.10	3048.721	300		I	5	6	1	
32795.03	3048.356	100		II	11/2	13/2	2	34888- 2093
32810.13	3046.953	100		I	4	5	2	37946- 5136
32816.10	3046.398	100	+.268	II			2	
32824.21	3045.646	100		II	9/2	9/2	3	40968- 8144
32832.81	3044.848	10000R		II	13/2	13/2	4	34926- 2093
32839.76	3044.204	100		II	7/2	5/2	1	43273-10433
32840.16	3044.166	300		II	9/2	9/2	3	38759- 5919
32844.31	3043.781	300	+.219	I	5	6	2	34058- 1214
32851.56	3043.110	100		II	9/2	7/2	1	39918- 7067
32855.88	3042.710	300		II	5/2	7/2	1	4010-36866
32870.80	3041.329	100		II	11/2	11/2	3	36812- 3941
32960.55	3033.047	100		II	3/2	3/2	3	42088- 9127
32983.80	3030.909	1000		I			3	
32990.58	3030.286	100		II	11/2	9/2	1	41134- 8144
33031.51	3026.531	300		I			3	
33048.39	3024.985	300		I	3	4	1	302-33350
33069.03	3023.097	100		I	4	4	3	37946- 4877
33074.61	3022.587	100		II	5/2	7/2	2	42148- 9073
33088.98	3021.274	100	-.456	I	3	3	3	302-33391
33105.44	3019.772	1000		II	9/2	11/2	2	37046- 3941
33112.93	3019.089	100		II	5/2	3/2	2	44363-11250
33118.47	3018.584	300		II	11/2	11/2	3	39466- 6437
33127.08	3017.799	100		II	9/2	11/2	2	39475- 6347
33139.82	3016.639	100	-.546	I			3	
33159.30	3014.867	10000R		II	9/2	9/2	3	39078- 5919
33163.40	3014.494	10000R		II	11/2	9/2	A	
33172.29	3013.686	300		I			1	39082- 5919
33179.21	3013.058	300		I	4	5	1	815-33994
33216.11	3009.710	300	-.370	I	3	4	1	302-33518
33228.99	3008.543	100	-.386	II	3/2	5/2	4	43662-10433
33238.34	3007.697	300		II	11/2	11/2	3	37179- 3941
33241.16	3007.442	3000		II	11/2	13/2	2	35335- 2093
33244.78	3007.114	100	-.425	II	5/2	5/2	3	43678-10433
33248.94	3006.739	1000	-.376	II	7/2	5/2	1	9012-42261
33262.55	3005.508	300	-.396	II	11/2	11/2	3	6202-39464
33269.68	3004.864	300	+.242	I	5	6	2	34483- 1214
33272.58	3004.602	100		II	7/2	5/2	A	41708- 8436
33274.34	3004.443	100		II	11/2	9/2	A	41418- 8144
33274.88	3004.394	100		II	13/2	13/2	3	35368- 2093
33276.48	3004.250	1000		II	11/2	9/2	1	39195- 5919
33285.15	3003.467	100		I			3	
33290.42	3002.991	100		I			1	
33296.87	3002.410	300	-.702	II	11/2	13/2	2	35390- 2093
33300.47	3002.085	100		II	7/2	5/2	1	41736- 8436
33301.44	3001.998	100		II	3/2	5/2	2	41737- 8436
33309.25	3001.294	100		II			1	
33317.21	3000.577	100		II	7/2	5/2	A	41753- 8436
33319.35	3000.384	300		II	7/2	5/2	2	4411-37730
33319.96	3000.329	3000	-.382	II	7/2	9/2	1	9012-42332
33330.45	2999.385	10000	+.260	I			3	
33337.52	2998.749	3000	+.178	II			1	
33342.89	2998.266	3000		II	13/2	11/2	1	39690- 6347

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TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	ODD-EVEN
33351.68	2997.476	1000		II	7/2	7/2			3 42425- 9073
33358.60	2996.854	300		II	7/2	5/2			1 41794- 8436
33366.10	2996.180	10000	-.421	II	11/2	13/2			1 6202-39568
33372.32	2995.622	300		I	6	7			1 3809-37181
33374.02	2995.469	100		II	11/2	11/2			3 37315- 3941
33391.14	2993.933	100	-.468	I	2	3			1 0-33391
33394.24	2993.655	300		II	7/2	5/2			4 43828-10433
33418.35	2991.496	300		I	4	4			3 38295- 4877
33418.92	2991.444	100		II	9/2	9/2			3 41563- 8144
33424.19	2990.973	1000		II	11/2	11/2			3 39772- 6347
33424.87	2990.912	300		II	9/2	7/2			1 42498- 9073
33433.58	2990.133	100		II	5/2	5/2			3 43867-10433
33439.27	2989.623	100	-.491	I	2	2			3 0-33439
33474.85	2986.446	3000	-.500	I	4	5			1 815-34290
33501.59	2984.062	100	-.537	I	4	5			1 815-34317
33503.25	2983.914	100		I	4	4			3 38380- 4877
33515.85	2982.793	100		II	3/2	1/2			1 43317- 9801
33557.95	2979.051	100	-.393	I	3	3			3 302-33860
33561.99	2978.692	300		II	13/2	11/2			1 39909- 6347
33569.16	2978.055	300	-.528	II	9/2	7/2			2 10134-43703
33576.62	2977.394	1000	-.713	II	7/2	7/2			3 0-33576
33587.95	2976.389	3000		II	11/2	9/2			1 39507- 5919
33592.27	2976.007	300		II	7/2	9/2			2 41736- 8144
33618.01	2973.728	300		II	7/2	9/2			2 39537- 5919
33619.00	2973.640	100		I					1
33628.03	2972.841	100		II	9/2	9/2			3 41722- 8144
33651.59	2970.760	300		II	5/2	5/2			3P 42087- 8436
33661.38	2969.896	300	+.327	II	9/2	7/2			1 42734- 9073
33670.01	2969.135	300		II	7/2	5/2			2 0-33670
33684.98	2967.816	300	-.404	II	9/2	7/2			2 10134-43819
33695.54	2966.885	300	-.372	I	5	6			1 1764-35459
33697.19	2966.740	300	-.229	I	5	4			2 1764-35461
33707.19	2965.860	3000		II	11/2	11/2			3 37648- 3941
33712.09	2965.429	300		II	5/2	5/2			3 42148- 8436
33720.24	2964.712	300		II	5/2	5/2			3 4010-37730
33734.24	2963.482	300	-.152	I					3
33738.19	2963.134	300		II	7/2	7/2	1.44	1.48	3 40805- 7067
33748.73	2962.209	300	-.402	II	5/2	3/2			1 8474-42223
33752.50	2961.878	1000		I	6	5			1 3809-37561
33753.58	2961.783	100		II	9/2	7/2			2 10134-43888
33758.51	2961.351	300		II	7/2	9/2			2 41902- 8144
33761.83	2961.059	300		II	9/2	9/2			3 39681- 5919
33765.67	2960.723	100	+.288	II	11/2	11/2			3 40113- 6347
33802.46	2957.500	3000	-.316	II	5/2	7/2			1 8474-42277
33812.49	2956.623	100		II	5/2	3/2			4 45063-11250
33820.98	2955.881	1000		II	5/2	7/2			1 8474-42295
33832.35	2954.887	1000		I	5	4			2 1764-35596
33838.64	2954.338	100		II					2
33839.24	2954.286	1000		I	6	6			3 35053- 1214
33852.85	2953.098	3000		II	11/2	9/2			1 39772- 5919
33860.56	2952.426	300	-.424	II	9/2	9/2			3 10134-43995
33861.45	2952.348	100	-.375	II	3/2	1/2			1 43662- 9801
33866.06	2951.946	300	-.313	II					1
33874.12	2951.244	1000		II	9/2	11/2			2 37815- 3941
33886.84	2950.136	300		II	3/2	5/2			1
33887.44	2950.083	100		II					3
33909.85	2948.133	300		II	5/2	7/2			2 40976- 7067
33921.49	2947.122	300		II	11/2	9/2			1 42065- 8144
33924.76	2946.838	100	+.218	II	9/2	7/2			1 42998- 9073
33927.42	2946.607	300		II	11/2	11/2			3 40275- 6347
33937.50	2945.732	100	+.263	I	5	6			2 35151- 1214
33950.51	2944.602	1000	-.401	II	9/2	9/2			3 10134-44085
33970.96	2942.830	100	-.344	I					A
33981.34	2941.931	1000		I	6	6			35195- 1214
33982.66	2941.817	300		II	9/2	9/2			3 10134-44117

See pages 461-463 for Explanation of Table

TABLE Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	ISOTOPE	SHIFT	SA	3-TO-2	3-TO-1	ZEEMAN DATA	LEVELS
Å	nm	242	cm ⁻¹	Å	Å	Å	Å	Å
33982.77	2941.867	1000		II	9/2	11/2		37924-3941
33989.15	2941.255	1000		II	7/2	5/2	0001	42425-43436
33999.39	2940.369	300		II	9/2	9/2	0001	39918-40519
34002.18	2940.132	100		II	9/2	11/2	0000	40550-41347
34020.70	2938.528	100		II	3/2	1/2	0001	43822-44801
34023.61	2938.276	1000		II	3/2	3/2		8199-42223
34058.23	2935.289	3000		II	13/2	11/2	001	37999-3941
34061.84	2935.005	3000		II	3/2	5/2	0001	8199-42223
34071.31	2934.163	100		II	11/2	9/2	0001	42215-43144
34074.51	2933.887	3000		II	5	6	001	17642-33838
34079.57	2933.451	100		II	9/2	7/2	1.207	43153-9073
34086.27	2932.875	100		II	3/2	3/2	0.652	8199-42223
34090.46	2932.514	100		II	1/2	1/2	0.662	43891-44801
34105.34	2931.235	100		II			001	15.00000
34111.50	2930.704	100		II	5/2	7/2	0.283	41378-42067
34132.27	2928.922	10000		II	15/2	13/2	1.172	36226-2093
34135.77	2928.647	100		II			001	25.00000
34150.55	2927.354	100		II			001	28.00000
34158.87	2926.641	100		II	11/2	9/2	0001	12913-47277
34170.11	2925.678	100		II	1/2	3/2	0.129	43297-44801
34171.42	2925.566	100		II	7/2	7/2	0.39	0-34171
34172.65	2925.461	100		II			001	50.00000
34177.82	2925.018	100		II	9/2	9/2	0001	40097-40519
34178.02	2924.915	300		II	5	6	0.672	17642-33838
34180.14	2924.819	1000		II	7/2	5/2	0.240	42618-43436
34186.42	2924.282	3000		II	13/2	11/2	1.156	40534-6347
34192.09	2923.798	100		II	5/2	7/2	0.449	41259-42067
34194.30	2923.608	1000		II	11/2	9/2	1.246	40113-40519
34218.19	2921.568	100		II	3/2	4	0001	3023-3520
34230.41	2920.012	3000		II	11/2	13/2	0001	36330-2093
34254.78	2918.446	100		II	9/2	7/2	0001	43328-9073
34264.08	2917.654	100		II			0001	42.00000
34273.26	2916.872	100		II			0001	41.00000
34316.30	2913.213	100		II			0001	41.00000
34318.50	2913.027	1000		II	11/2	11/2	0001	38259-3941
34319.23	2912.965	10000		II	13/2	13/2	0001	36413-2093
34350.50	2910.313	300		II	13/2	11/2	0001	8425-42775
34354.14	2910.005	1000		II	9/2	9/2	0001	42498-43144
34356.08	2909.841	100		II	11/2	9/2	0001	40275-40519
34358.55	2909.632	1000		II			0001	40.00000
34364.64	2909.116	1000		II	11/2	11/2	0001	12913-47277
34364.64	2909.107	300		II	7/2	5/2	0001	9012-43377
34402.08	2905.916	300		II	5/2	7/2	0001	41669-42067
34444.91	2902.331	100		II	5/2	7/2	0001	43518-43073
34473.79	2899.904	10000		II	13/2	11/2	0001	40821-43347
34480.50	2899.340	100		II			0001	44.00000
34492.21	2898.356	10000		II	6	5	0001	3809-38301
34496.13	2898.027	3000		II	5/2	5/2	0001	42926-43436
34499.08	2897.779	1000		II	9/2	7/2	0001	41563-42067
34514.43	2896.490	100		II	11/2	11/2	0001	45.00000
34534.92	2894.771	300		II	3/2	3/2		43662-9127
34546.12	2893.833	100		II	9/2	7/2		10134-44680
34549.83	2893.522	300		II	5	5		1764-36314
34550.72	2893.448	300		II	5/2	3/2		43678-9127
34570.74	2891.772	100		II				1
34572.71	2891.607	300		II				1
34591.14	2890.066	300		II	9/2	11/2		10134-44725
34606.01	2888.824	300		II	9/2	7/2		43679-9079
34614.70	2888.099	1000		II	13/2	11/2		40962-6347
34645.80	2885.507	100		II	4	4		815-35461
34670.14	2883.481	100		II	5/2	5/2		43106-8436
34685.69	2882.188	3000		II	13/2	11/2	0001	38627-3941
34689.33	2881.885	100		II	5	6	0001	35903-1214
34691.47	2881.708	300		II	7/2	7/2	0001	9012-433703

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TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	ODD-EVEN
34693.39	2881.548	1000		II	11/2	11/2			3 38634- 3941
34700.98	2880.918	300		II	7/2	5/2			1 43137- 8436
34703.48	2880.711	300		II	11/2	9/2			1 42847- 8144
34718.37	2879.474	1000		II	11/2	13/2			2 36812- 2093
34725.06	2878.920	300		I	4	3			1 815-35540
34727.58	2878.711	100		II	7/2	7/2			3 41794- 7067
34739.52	2877.722	100		II	5/2	3/2			1 43867- 9127
34752.33	2876.660	100		II	9/2	9/2			3 40671- 5919
34762.29	2875.836	300	-.290	II	7/2	5/2			2 9012-43774
34763.90	2875.703	100		II	1/2	3/2			43891- 9127
34765.83	2875.543	1000	-.416	II	9/2	11/2			1 10134-44900
34780.95	2874.294	1000		I	4	4			3 815-35596
34786.98	2873.795	100		II	11/2	11/2			3 41134- 6347
34804.13	2872.379	300	-.346	II	11/2	9/2			2 6202-41006
34806.91	2872.149	1000		II	13/2	11/2			1 41154- 6347
34807.27	2872.120	1000		II	7/2	7/2			3 9012-43819
34809.42	2871.943	300		II					3
34817.98	2871.236	1000		II	9/2	11/2			2 38759- 3941
34829.25	2870.307	100		I					
34830.86	2870.174	100		II					
34835.30	2869.809	1000		II	9/2	7/2			1 41902- 7067
34837.43	2869.633	300		II	7/2	5/2			1 43273- 8436
34841.90	2869.266	300	+.253	II	11/2	9/2			1 40761- 5919
34844.67	2869.037	100	+.271	II	11/2	9/2			1 42988- 8144
34846.76	2868.865	100	-.214	II	9/2	7/2			1 43920- 9073
34875.89	2866.469	300		II	7/2	7/2			3 9012-43888
34891.96	2865.149	300		II	9/2	11/2			2 41239- 9347
34893.77	2865.000	100		II	7/2	5/2			2 0-34893
34902.45	2864.288	1000		II	5/2	5/2			3 8474-43377
34920.68	2862.792	3000		II	13/2	11/2			1 41268- 6347
34927.96	2862.195	3000		II	11/2	9/2			4 6202-41130
34945.91	2860.725	300		II	9/2	7/2			1 44019- 9073
34949.00	2860.472	100		II					2
34982.84	2857.705	100		II	7/2	9/2			1 9012-43995
35007.75	2855.671	300		II	9/2	11/2			2 38949- 3941
35015.98	2855.000	300		II	5/2	3/2			2 8474-43490
35020.58	2854.625	100		II	5/2	7/2			2 42087- 7067
35049.26	2852.289	300		II	9/2	9/2			3 40968- 5919
35070.26	2850.581	300		II	5/2	3/2			2 8474-43545
35072.82	2850.373	100	-.396	II	7/2	9/2			1 9012-44085
35077.50	2849.993	300		II	9/2	7/2			1 42144- 7067
35079.92	2849.796	100		II	3/2	3/2			3 44207- 9127
35082.42	2849.593	100		II	5/2	5/2			3 43518- 8436
35085.92	2849.309	100		II	11/2	13/2			1 37179- 2093
35094.67	2848.598	300		I					3
35097.50	2848.369	100		I					1
35104.95	2847.764	100		II	7/2	9/2			1 9012-44117
35131.25	2845.632	1000	+.216	II	13/2	13/2			3 37225- 2093
35133.84	2845.422	300	+.221	II	7/2	7/2			3 42200- 7067
35134.77	2845.347	300		II	13/2	11/2			2 41482- 6347
35135.53	2845.285	3000R	+.241	I	7	6	1.32	1.45	1 36349- 1214
35137.11	2845.157	300		II	9/2	11/2			A 39078- 3941
35141.23	2844.824	300		II	11/2	11/2			3 39082- 3941
35151.68	2843.978	300	+.399	II	9/2	9/2			3 41070- 5919
35221.61	2838.331	1000		II	11/2	13/2			2 37315- 2093
35223.76	2838.158	300		II	9/2	11/2			2 39165- 3941
35227.97	2837.819	1000	-.258	I	4	5			815-36043
35228.78	2837.753	1000		II	11/2	9/2			1 41148- 5919
35238.54	2836.967	1000		I	3	3	*2.000	2.00	4 302-35540
35254.30	2835.699	300	+.302	II	11/2	11/2			3 39195- 3941
35258.50	2835.361	100		I	4	5			1 815-36074
35280.67	2833.580	10000	-.762	II	7/2	5/2			1 0-35280
35290.87	2832.760	100		II	3/2	3/2			3 8199-43490
35294.43	2832.475	300		I	3	4			1 302-35596
35300.02	2832.027	100	-.239	II	5/2	5/2			3 8474-43774

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TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS
							-O	-E	ODD-EVEN
35313.43	2830.951	1000	-.364	II	3/2	1/2	2.66	3.59	1 8199-43513
35321.84	2830.277	100		II	11/2	9/2			1 41241- 5919
35334.11	2829.294	100		II	3/2	1/2			1 45135- 9801
35345.15	2828.410	300		II	3/2	3/2			3 8199-43545
35375.05	2826.019	300	-.250	II	5/2	5/2			3
35397.79	2824.204	10000	-.406	II	7/2	9/2			1 0-35397
35424.44	2822.080	300		II	9/2	11/2			2 41772- 6347
35428.88	2821.726	100		II	9/2	7/2			1 44502- 9073
35431.33	2821.531	1000		II	9/2	7/2			1 42498- 7067
35433.10	2821.389	100		II					1
35433.52	2821.356	100		II	7/2	9/2			2 43577- 8144
35435.73	2821.180	100		II					3
35450.57	2819.999	100		II	3/2	3/2			3 44578- 9127
35464.31	2818.906	100		II	13/2	11/2			41812- 6347
35475.46	2818.020	300		II	9/2	7/2			1 44549- 9073
35483.62	2817.372	100		I	6	5			40620- 5136
35484.70	2817.287	1000	-.391	II	11/2	13/2			1 12913-48397
35496.56	2816.345	1000	-.438	II	9/2	9/2			3 10134-45631
35516.80	2814.740	1000		II	9/2	11/2			2 39458- 3941
35524.41	2814.137	300		II	13/2	11/2			1 39465- 3941
35533.56	2813.412	300		II	9/2	11/2			2 39475- 3941
35535.30	2813.275	100		II	9/2	9/2			3 43679- 8144
35540.71	2812.847	1000		I	2	3			1 0-35540
35545.39	2812.476	100		I	5	4			2 1764-37309
35554.76	2811.735	1000		II	11/2	13/2			2 37648- 2093
35556.24	2811.618	10000	-.737	II	7/2	7/2			3 0-35556
35575.13	2810.125	300	-.371	I	4	4			3 815-36390
35581.92	2809.589	100		II	7/2	7/2			3 44655- 9073
35595.90	2808.485	300	-.485	II	11/2	11/2			3 12913-48509
35626.06	2806.107	300	-.630	I	6	6			3 3809-39435
35643.96	2804.698	300		II	9/2	9/2			3 41563- 5919
35644.69	2804.641	100		I	5	4			2 1764-37408
35668.42	2802.775	100		II	7/2	7/2			3 9012-44680
35683.69	2801.575	300		II	7/2	9/2			2 43828- 8144
35689.71	2801.102	100	-.544	I	4	3			2 815-36505
35696.99	2800.531	100	+.175	II	11/2	9/2			1 43841- 8144
35749.35	2796.429	3000		II	13/2	11/2			1 39690- 3941
35778.51	2794.150	300		II	7/2	7/2			3 0-35778
35789.42	2793.298	100		II	7/2	9/2			2 41708- 5919
35797.60	2792.660	300		I	5	5			4 1764-37561
35823.60	2790.633	100		II					1
35826.65	2790.395	100	-.627	I	3	2			1 302-36128
35861.22	2787.705	100		II	5/2	7/2			4 42928- 7067
35865.00	2787.411	100		II	11/2	13/2			2 37958- 2093
35867.71	2787.200	100		II	11/2	11/2			3 42215- 6347
35898.29	2784.826	10000		II	9/2	7/2			2 5067-40966
35905.82	2784.242	3000		II	13/2	13/2			3 37999- 2093
35931.21	2782.275	100		II	9/2	7/2			1 42998- 7067
35939.74	2781.615	100		II					3
35967.28	2779.485	100		II	11/2	9/2			1 41886- 5919
35968.45	2779.394	300		II	13/2	11/2			1 39909- 3941
35973.37	2779.014	100	+.278	I	5	6			2 37187- 1214
35974.92	2778.894	300	-.467	II					3
35977.23	2778.716	100		II	9/2	11/2			2 39918- 3941
36027.18	2774.863	100	-.277	I	4	3			A 815-36842
36030.36	2774.618	300		II	9/2	7/2			2 5067-41098
36031.69	2774.515	100		II	7/2	9/2			2 41950- 5919
36062.49	2772.146	100		II	9/2	9/2			3 5067-41130
36069.96	2771.571	300		II	7/2	7/2			3 43137- 7067
36073.14	2771.327	300		I	4	4			3 815-36888
36128.77	2767.060	300	-.613	I	2	2			3 0-36128
36140.51	2766.161	1000	+.228	II					1
36146.53	2765.700	100		II	11/2	9/2			1 42065- 5919
36172.13	2763.743	100	+.316	II	11/2	11/2			3 40113- 3941
36180.98	2763.067	3000		II	7/2	5/2			1 4411-40592

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TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E	TYPE
36206.14	2761.147	100		II	5/2	7/2			4 8474-44680
36223.80	2759.800	300		II	1/2	1/2			3 46025- 9801
36225.34	2759.683	300		II	9/2	9/2			3 42144- 5919
36256.91	2757.280	300		I	2	3			1 0-36256
36261.26	2756.949	100		II	9/2	7/2			1 43328- 7067
36266.54	2756.547	100		II	9/2	7/2			2 10134-46401
36296.36	2754.283	300		II	11/2	9/2			1 42215- 5919
36307.79	2753.416	300		II					1
36315.92	2752.800	300		I	6	6	1.34	1.46	3 37530- 1214
36378.82	2748.039	10000R		II	15/2	13/2	1.34	1.50	1 38472- 2093
36387.07	2747.416	300	+ .336	II	9/2	11/2			2 42734- 6347
36400.44	2746.407	100		I	5	6			2 37614- 1214
36404.73	2746.083	300	+ .292	II	9/2	9/2			3 44549- 8144
36408.62	2745.790	300		II	9/2	11/2			2 40350- 3941
36437.09	2743.645	3000		II	11/2	11/2			3 40378- 3941
36441.08	2743.344	100	- .655	I	5	5			3 1764-38205
36485.39	2740.012	100		II	9/2	11/2			2 42833- 6347
36499.89	2738.924	300		II	11/2	11/2			3 42847- 6347
36505.37	2738.513	300	- .534	I	2	3			1 0-36505
36510.72	2738.111	100		II	7/2	7/2			3 43577- 7067
36516.76	2737.659	100		I					1
36526.98	2736.892	10000R	- .803	II	7/2	9/2			1 0-36526
36533.25	2736.422	1000		II	13/2	13/2			3 38627- 2093
36537.27	2736.121	100	- .563	I	5	5			3 1764-38301
36540.96	2735.845	300		II	11/2	13/2			2 38634- 2093
36573.43	2733.416	100		II	11/2	11/2			3 6202-42775
36579.15	2732.989	100		II	9/2	9/2			3 42498- 5919
36581.86	2732.786	3000		II	5/2	5/2			3 4010-40592
36592.88	2731.963	300		II	13/2	11/2			1 40534- 3941
36601.20	2731.342	100		II					1
36612.47	2730.501	100		II	9/2	7/2			1 43679- 7067
36637.31	2728.650	300	- .563	I	6	6			3 3809-40446
36641.08	2728.369	300		II	11/2	11/2			3 42988- 6347
36662.84	2726.750	300		II	7/2	9/2			3 43729- 7067
36677.20	2725.682	10000R		II	15/2	13/2	1.23	1.50	1 38771- 2093
36695.56	2724.319	300		II	7/2	9/2			1 0-36695
36715.32	2722.852	100		II	11/2	11/2			3 43063- 6347
36718.85	2722.590	1000		II	7/2	9/2			1 4411-41130
36730.16	2721.752	100		II	9/2	11/2			2 40671- 3941
36806.40	2716.114	300		II	11/2	9/2			1 42725- 5919
36815.68	2715.429	100	+ .336	II	9/2	9/2			3 42734- 5919
36852.22	2712.737	300		II					2
36869.89	2711.437	100		II	13/2	11/2			1 43217- 6347
36880.26	2710.674	300		II	13/2	11/2			1 40821- 3941
36886.65	2710.205	1000		II	13/2	13/2			3 38980- 2093
36928.53	2707.131	1000		II	11/2	9/2			1 42847- 5919
36952.21	2705.396	100		II					2
36955.55	2705.151	3000		II	5/2	7/2			1 4010-40966
37027.08	2699.925	1000		II	9/2	11/2			2 40968- 3941
37073.52	2696.543	100		II					2
37087.62	2695.517	300	- .574	II	5/2	7/2			1 4010-41098
37101.88	2694.482	1000		II	11/2	13/2			2 39195- 2093
37108.62	2693.992	1000		II	13/2	11/2	1.30	1.50	1 43456- 6347
37142.94	2691.502	100	- .386	II	9/2	11/2			1 10134-47277
37193.43	2687.849	100		II	11/2	11/2			3 41134- 3941
37206.59	2686.898	100		II	11/2	11/2			3 41148- 3941
37260.12	2683.037	100		II	11/2	9/2			1 43179- 5919
37298.42	2680.283	100		II	9/2	11/2			2 41239- 3941
37331.55	2677.903	300		I					1
37372.51	2674.969	300		II	11/2	13/2			2 39466- 2093
37399.89	2673.010	300	- .481	II					1
37413.34	2672.049	3000		II	11/2	13/2			2 39507- 2093
37472.57	2667.825	300	+ .227	II	15/2	13/2	1.12	1.50	1 39566- 2093
37541.24	2662.945	300		II	13/2	11/2			1 41482- 3941
37596.92	2659.001	1000		II	13/2	13/2			3 39690- 2093

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E	TYPE
37670.54	2653.804	10000	-.475	II	13/2	15/2	1.65	1.56	1 8425-46095
37703.67	2651.472	100		II	7/2	7/2			3 44770- 8436
37707.96	2651.171	10000	-.458	II	9/2	11/2			1 5067-42775
37730.89	2649.560	100	-.539	II	7/2	5/2			2 0-37730
37737.21	2649.116	100		II					3
37792.47	2645.242	100		II	9/2	11/2			2 41733- 3941
37810.69	2643.967	300		II	7/2	9/2			2 43729- 5919
37822.60	2643.135	100		II	9/2	11/2			2 44170- 6347
37865.69	2640.126	100	-.343	II	7/2	7/2			3 4411-42277
37884.21	2638.836	100		II	7/2	7/2			3 4411-42295
37908.54	2637.142	300		II	5/2	7/2			2 44975- 7067
37908.75	2637.128	100		II	7/2	9/2			2 43828- 5919
37920.91	2636.281	10000	-.445	II	7/2	9/2			1 4411-42332
37960.97	2633.499	3000		II	9/2	11/2			2 41902- 3941
38019.70	2629.432	1000	+.298	II	11/2	13/2			2 40113- 2093
38037.15	2628.225	100		II	13/2	11/2			1 44385- 6347
38104.19	2623.600	100	+.261	II	11/2	11/2			3
38124.35	2622.213	100		II	11/2	11/2			3 42065- 3941
38156.52	2620.002	100		II	13/2	11/2			1 42097- 3941
38181.44	2618.292	300		II	11/2	13/2			2 40275- 2093
38192.48	2617.535	300		II					3
38197.82	2617.169	10000	-.465	II	13/2	15/2	1.66	1.58	1 8425-46623
38201.11	2616.944	1000		II	9/2	11/2			2 44549- 6347
38203.16	2616.803	100		II	9/2	11/2			2 42144- 3941
38212.84	2616.140	1000	-.470	II	5/2	3/2			4 4010-42223
38250.77	2613.546	3000	-.443	II	5/2	5/2			3 4010-42261
38251.19	2613.517	100		II	9/2	9/2			3 44170- 5919
38266.56	2612.467	3000	-.364	II	5/2	7/2			1 4010-42277
38267.31	2612.416	100							1
38274.15	2611.950	300		II	11/2	11/2			3 42215- 3941
38284.63	2611.234	3000		II	11/2	13/2			2 40378- 2093
38285.08	2611.204	1000		II	5/2	7/2			1 4010-42295
38314.36	2609.208	100		II					3
38317.75	2608.977	300	+.225	II	9/2	11/2			2 42259- 3941
38345.76	2607.072	3000		II	11/2	11/2			3 44693- 6347
38386.21	2604.324	100		I					3
38399.76	2603.405	100		II	7/2	7/2			3 45466- 7067
38413.85	2602.450	3000		II	9/2	9/2			3 44333- 5919
38423.90	2601.770	100		II	13/2	11/2			1 42365- 3941
38427.50	2601.526	300		II	11/2	11/2			3 42368- 3941
38440.46	2600.648	3000		II	13/2	13/2			3 40534- 2093
38479.07	2598.039	100		II	5/2	5/2			3 46915- 8436
38510.83	2595.896	100	-.293	II					3
38514.70	2595.635	100	+.241	II					2
38523.52	2595.041	1000	-.581	II	11/2	11/2			3 6202-44725
38549.28	2593.306	300		II					2
38580.12	2591.233	1000	+.236	II					1
38583.22	2591.025	300		II	9/2	9/2			3 44502- 5919
38629.78	2587.902	100		II	9/2	9/2			3 44549- 5919
38667.56	2585.373	100		II					3
38698.21	2583.326	3000	-.464	II	11/2	11/2			3 6202-44900
38727.83	2581.350	300		II	13/2	13/2			3 40821- 2093
38736.24	2580.789	100		II	7/2	9/2			2 44655- 5919
38774.40	2578.249	1000		II	11/2	9/2	1.286	1.528	1 44693- 5919
38814.16	2575.608	100		II					2
38838.76	2573.976	100		II	9/2	9/2			3 46983- 8144
38852.42	2573.072	100	-.478	II	13/2	11/2			2 8425-47277
38855.78	2572.849	100		II					1
38868.74	2571.991	3000		II	13/2	13/2			3 40962- 2093
38891.57	2570.481	300		II					2
38900.27	2569.906	100		II					1
38903.54	2569.690	100		II	7/2	5/2			2 9012-47916
38906.34	2569.505	100		II	11/2	11/2			3 42847- 3941
38927.43	2568.113	300	-.478	II	9/2	9/2			3 5067-43995
38988.65	2564.080	300		II					2

See pages 461-463 for Explanation of Table

TABLE. Strong Cm Lines Emitted by Electrodeless Lamp

WAVE NUMBER	WAVE LENGTH	INT	ISOTOPE SHIFT	SA	J-O	J-E	ZEEMAN DATA		LEVELS ODD-EVEN
							-O	-E	TYPE
39017.39	2562.191	1000	-.443	II	9/2	9/2			3 5067-44085
39023.11	2561.816	1000	-.394	II					2
39041.02	2560.641	3000		II	11/2	13/2	1.138	1.493	2 41134- 2093
39049.56	2560.381	100		II	9/2	9/2			3 5067-44117
39060.93	2559.336	100		II	13/2	13/2			3 41154- 2093
39061.92	2559.270	1000	-.302	II	9/2	7/2			2 10134-49196
39070.96	2558.678	100		II					2
39073.01	2558.544	100		II	11/2	11/2			3 45420- 6347
39123.37	2555.250	100		II					1
39217.44	2549.121	100		II					1
39258.99	2546.423	300		II					1
39289.70	2544.432	300	+.308	II	15/2	13/2	1.18	1.50	1 41383- 2093
39324.81	2542.161	1000		II	11/2	13/2	1.33	1.50	2 41418- 2093
39358.67	2539.973	100		II					2
39388.82	2538.029	300		II	13/2	13/2			3 41482- 2093
39428.93	2535.447	1000	-.490	II	11/2	9/2			2 6202-45631
39515.09	2529.918	300		II	13/2	11/2	1.30	1.42	1 43456- 3941
39522.21	2529.462	300		II					2
39608.68	2523.940	100	-.413	II					3
39613.01	2523.664	300	-.406	II	9/2	7/2	1.81	1.98	1 5067-44680
39673.75	2519.800	300	-.364	II	7/2	9/2	*2.028	1.38	1 4411-44085
39706.24	2517.738	100	-.348	II	3/2	5/2			1 48142- 8436
39760.25	2514.318	300	+.185	II					1
39792.65	2512.271	100		II	11/2	13/2			2 41886- 2093
39809.09	2511.233	100	-.468	II	5/2	7/2			1 4010-43819
39826.45	2510.138	100		II					1
39832.70	2509.744	100		II	9/2	11/2			1 5067-44900
39926.02	2503.878	1000		II					1
39972.45	2500.969	1000	-.508	II	13/2	13/2			3 8425-48397
39973.55	2500.900	100	-.607	II	11/2	11/2			3 43915- 3941
40120.40	2491.746	100		II					3
40171.36	2488.585	1000		II					1
40269.38	2482.527	3000	-.385	II	7/2	7/2			4 4411-44680
40271.47	2482.398	1000		II	13/2	13/2			3 42365- 2093
40275.06	2482.177	100		II	11/2	13/2			A 42368- 2093
40373.46	2476.126	100		II	5/2	7/2	2.493	1.228	1 4010-44384
40391.67	2475.010	1000		II	9/2	11/2			2 44333- 3941
40416.59	2473.484	1000		II	13/2	13/2			3 42510- 2093
40436.10	2472.291	100		II					1
40471.02	2470.157	100		II	9/2	9/2			3 5067-45538
40537.54	2466.103	1000		II	13/2	13/2	1.176	*1.500	3 42631- 2093
40561.04	2464.675	100		II	9/2	11/2			A 44502- 3941
40563.45	2464.528	1000	-.491	II	9/2	9/2	*1.826	1.583	3 5067-45631
40592.50	2462.764	10000R	-.651	II	7/2	5/2	1.935	2.238	1 0-40592
40631.81	2460.382	100		II	11/2	13/2			2 42725- 2095
40670.25	2458.056	1000	-.406	II	5/2	7/2	2.485	1.986	1 4010-44680
40955.65	2440.926	100		II					2
40966.16	2440.299	1000R	-.755	II	7/2	7/2	1.93	1.78	3 0-40966
41006.54	2437.896	300	-.861	II	7/2	9/2			1 0-41006
41075.29	2433.815	100	-.424	II	11/2	11/2			3 6202-47277
41098.25	2432.456	300		II	7/2	7/2	1.936	1.161	3 0-41098
41130.37	2430.556	3000R	-.710	II	7/2	9/2	*1.935	1.702	1 0-41130

See pages 461-463 for Explanation of Table

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