Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 717 (2010)	1-Dec-2009

Q(β^-)=−462.8 *3*; S(n)=8699.5 *7*; S(p)=11019 *19*; Q(α)=−4816 *7* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=−468 *4*; S(n)=8700.2 *20*; S(p)=11028 *20*; Q(α)=−4794 *23* 2003Au03,2009AuZZ

^{116}Cd Levels

Cross Reference (XREF) Flags

A	Coulomb excitation	G	^{116}Cd(n,n′γ)	M	(HI,xnγ)
B	^{116}Ag β^- decay (9.3 s)	H	^{116}Cd(p,p′)	N	^{116}Cd(^{94}Kr,xnγ)
C	^{116}Ag β^- decay (237 s)	I	^{116}Cd(p,p′γ)	O	^{116}Cd(γ,pol γ')
D	^{116}Ag β^- decay (20 s)	J	^{120}Sn(d,^{6}Li)	P	^{116}In ε decay (14.10 s)
E	^{116}Cd(d,d′)	K	^{114}Cd(t,p)	Q	^{116}Cd(α,α')
F	^{116}Cd(e,e′)	L	^{176}Yb(^{28}Si,Fγ)		

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0.0@	0+	3.3×10^{19} y *4*		%2β^-=? $T_{1/2}$: From 2002Ba52 the lower limits of the $T_{1/2}$ $_{1/2}$ for 2β- decay is 4×10^{19} y *1*(2005Ra13). Other values: 1.7×10^{20} y (1990Ba52), 2.6×10^{20}y (1994Ku25), 2.7×10^{20} y (1995Da09). Others: 1991Zd01, 1993Kl01, 2000Ar16, 1998Da23, 2003Da09, 2003Da24, 2005Ba01, 2005Ba33, 2005Da03,2006Wi12, 2006Sh31, 2006Ba35.
513.490@ *15*	2+	14.1 ps *5*	ABCDEFGHIJKLMNO Q	Q=−0.42 *4* (1989Ra17,2005St24) μ=+0.60 *14* (1980Br01,1989Ra17,2005St24) XREF: E(520). Jπ: L(p,p′)=2. $T_{1/2}$: from Coul. ex., B(E2)(0-2)=0.560 *20* (1987Ra01). Q: average of 1976Es02 and 1977Gi13.
1212.997 *13*	2+	1.9 ps *3*	ABCD GHIJK Q	Jπ: $\gamma(\theta)$ in Coul. ex., π=+ from L=2+4 (p,p′) and (t,p). $T_{1/2}$: from Coul. ex., B(E2)=0.019 *3* (1969Mi07).
1219.448@ *18*	4+	1.7 ps *4*	ABCDE GHIJKLMN	Jπ: L(t,p)=2+4 for E=1214. $T_{1/2}$: from Coul. ex., B(E2)(2-4)=0.35 *7* (1965Mc05).
1282.560# *20*	0+	65 ps *4*	C GHIJ N	Jπ: $\gamma(\theta)$ in (n,n′γ), J=2 in (p,p′) could be different level. $T_{1/2}$: from 1989Ma33, measured $\beta\gamma\gamma$ with BaF_2 and plastic detector.
1380.310& *20*	0+	1.15 ps *23*	A CD GHIJK N Q	$T_{1/2}$: from B(E2)(2-0)=0.020 *4* (1965Mc05). Jπ: from L(t,p)=0.
1642.499& *17*	2+	0.50 ps +*14*−*9*	BCDE GHIJ N Q	Jπ: M1+E2 to 2+, E2 γ to 0+. $T_{1/2}$: From DSA in (n,n′γ) (2003Ka45).
1869.477 *19*	4+	0.24 ps +*17*−*7*	B D G	$T_{1/2}$: From DSA in (n,n′γ) (2003Ka45).
1915.816 *22*	3+	0.49 ps +*17*−*10*	BCD G I	$T_{1/2}$: From DSA in (n,n′γ) (2003Ka45).
1921.557 *23*	3−		ABCD GHIJK Q	Jπ: $\gamma(\theta)$ in (n,n′γ), Jπ: L(t,p)=0+3 for E=1924 *6* and $\gamma(\theta)$ in (n,n′γ).
1928.44 *5*	0+		C E G I K	Jπ: L(t,p)=0+3, $\gamma(\theta)$ in (n,n′γ).
1951.33# *4*	2+	0.56 ps +*22*−*12*	C G I K N	$T_{1/2}$: From DSA in (n,n′γ) (2003Ka45). Jπ: L(p)=2 (t,p).
2026.66@ *3*	6+	0.44 ps +*31*−*13*	B G IJ LMN	$T_{1/2}$: From DSA in (n,n′γ) (2003Ka45). Jπ: E2 γ to 4+, no γ to 0+.
2037.04 *5*	2+		G	Jπ: $\gamma(\theta)$ in (n,n′γ), linear polarization.

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Adopted Levels, Gammas (continued)

^{116}Cd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
2041.91[&] *4*	4^+		B GH	J$^{\pi}$: from M1+E2 γ to 4^+, E2 γ to 2^+.
2118.43 *3*	$(2)^+$		C GHIJ	J$^{\pi}$: M1+E2 γ to 2^+, 1,3 ruled out by $\gamma(\theta)$ in (n,n$'\gamma$).
2189.0? *5*			B	E(level): not confirmed in (n,n$'\gamma$) (1991Ar17).
2195.4? *4*			C	E(level): not confirmed in (n,n$'\gamma$) (1991Ar17).
2248.837[a] *23*	5^-		B e GHIJKL	J$^{\pi}$: L(t,p)=5.
2291.9 *3*	5^-		B e h JK	J$^{\pi}$: L(t,p)=2+5. E(level): not confirmed by 1991Ar17.
2292.47 *10*	2^+		C e Gh JK	J$^{\pi}$: L(t,p)=2+5,γ to 2^+, J≤5.
2293.2 *6*			C	
2293.7 *3*	$(2,3^+)$		C e GhIJ	J$^{\pi}$: M1+E2 γ to 2^+.
2296.29 *4*	$^+$		G	
2302.95 *20*			B D	
2339.77 *5*	4^-		B De GH	J$^{\pi}$: $\gamma(\theta)$ and linear polarization in (n,n$'\gamma$).
2376.45 *4*	4^+		e GHIJK	J$^{\pi}$: L(t,p)=4.
2377.073 *16*	3^+		D G i	J$^{\pi}$: $\gamma(\theta)$ in (n,n$'\gamma$), 3^- ruled out from δ.
2391.50 *3*	$(2^+,3)$		D GHiJ	J$^{\pi}$: $\gamma(\theta)$ in (n,n$'\gamma$), linear polarization ,(3^-) in Ag decay (20s).
2435.03 *14*	2^+		C GHI K	XREF: K(2431). J$^{\pi}$: L(t,p)=2.
2478.15 *7*	1^-	0.0097 eV *6*	C E GH O	J$^{\pi}$: $\gamma(\theta)$ in (n,n$'\gamma$), linear polarization, excitation in (d,d$'$) suggests natural parity.
2488.0 *10*	1^+	0.0021 eV *3*	O	
2493.66 *20*			B D	
2503.83 *5*	(5^-)		B GH	XREF: H(2509).
2517.49 *5*			C G	
2559 *10*	2^+		H K	J$^{\pi}$: L(t,p)=2.
2564.7[&] *10*	6^+		B MN	J$^{\pi}$: stretched E2 γ to 4^+.
2572.16 *15*			C	
2604.85 *5*	$2^+,3,4^+$		GHI	XREF: I(2559). J$^{\pi}$: γ's to 2^+ and 4^+.
2627.7? *3*			C	E(level): not confirmed in (n,n$'\gamma$) (1991Ar17).
2648 *8*			E HI	XREF: E(2640).
2653.90 *6*			C G	
2659.0 *10*	1^+	0.0045 eV *4*	O	
2672.83 *7*			G	
2690.90 *8*	(5^-)		B	
2693.17[a] *15*	(7^-)		B L	
2698.8 *5*	(5^-)		B	
2720.09 *7*	1^-		C GH K	XREF: H(2715)K(2714). J$^{\pi}$: L(t,p)=1.
2727.25 *19*			G	
2760.1? *3*	$(1,2^+)$		C	E(level): not confirmed in (n,n$'\gamma$) (1991Ar17). J$^{\pi}$: γ to 0^+.
2762.0 *10*	1	0.0020 eV *5*	O	B(E1)↑=0.27×10^{-5} *6*
2764.6 *3*			G	
2779.7 *14*	(10^+)		M	J$^{\pi}$: from systematics.
2782.6 *5*	2^+		C H K	J$^{\pi}$: L(t,p)=2.
2786.14 *15*			D G	
2802.96 *6*			C GH	
2810.5 *3*	$1,2^+$		G	J$^{\pi}$: γ to 0^+.
2817.6 *6*			C	
2822.35 *15*			D G	
2824.9[@] *8*	8^+		L N	
2828.3 *10*	(6^-)		B L	
2828.6 *3*	1^-	0.0020 eV *5*	C G O	J$^{\pi}$: γ to 0^+.

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Adopted Levels, Gammas (continued)

^{116}Cd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
2837 *11*	(6+)		K	Jπ: L=(t,p)=(6).
2845.3 *7*	1+	0.0104 eV *10*	CD O	
2862.45 *18*			C	
2865.62 *15*	(5−)		B	
2873.2 *3*	8+		L N	
2877.52 *12*	(6−)		B	
2909.79 *17*			GH K	
2915.34 *21*			B D	
2958.22 *22*	(6−)		B G	Jπ: log *ft*=4.8 from (5+) parent.
2973 *12*	(3−)		H K	Jπ: L(t,p)=(3).
2978.19 *21*			C	
3001.44 *9*			C	
3013.38 *10*	(5−,6−)		B	
3014.74 *24*			C	
3040.0[@] *8*	10+		L N	
3050 *14*	4+		H K	Jπ: L(t,p)=4.
3068.0 *10*	1+	0.0207 eV *10*	C O	
3087.83 *7*	(7−)		B	
3102.7 *3*			C	
3118.21 *15*	1−		C H K	Jπ: L(t,p)=1.
3124.6 *3*			D	
3130.14 *22*			B	
3137.62 *20*			C	
3156.0 *10*	1−	0.0052 eV *5*	O	B(E1)↑=0.48×10−5 *5*
3162.46 *20*			B	
3175.68 *22*			C	
3212.66 *20*			B	
3213.44 *19*	(6+)		BC	
3217.00 *23*	2+		C K	Jπ: L(t,p)=2.
3218.44 *20*			C	
3227.99 *14*			D	
3250.65 *20*			C	
3275.65 *17*			C	
3282.0 *10*	1	0.0009 eV *6*	O	B(E1)↑=0.08×10−5 *5*
3287.23 *20*			C	
3294.35 *14*			D	
3299.3 *4*			C	
3303.1 *3*			D	
3304.12 *17*			D	
3307.2 *3*			C	
3321 *14*	3−		K	Jπ: L(t,p)=3.
3339.95 *20*			C	
3348.02 *12*	(1,2+)		C	Jπ: γ to 0+.
3354.88 *19*			D	
3359.94 *13*			B	
3372.0 *3*			B	
3373.0 *5*			B	
3378.14 *15*			C	
3378.6 *3*			C	
3382.5[a] *10*	(9−)		L	
3387.7 *3*			B	
3398.6 *4*	(1,2+)		C	Jπ: γ to 0+.
3401.1 *10*	1	0.0017 eV *4*	O	B(E1)↑=0.13×10−5 *3*
3423.1 *10*	1+	0.0028 eV *5*	O	
3433.3 *5*			C	
3471.33 *20*			C	

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Adopted Levels, Gammas (continued)

^{116}Cd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF		Comments
3472.13 *12*			C		
3483 *14*	4^+		K		Jπ: L(t,p)=4.
3486.06 *21*			B		
3511.86 *20*			C		
3527.30 *18*			C		
3531.56 *20*			C		
3542.7 *3*			C		
3549.54 *21*			B		
3560.31 *20*			C		
3578.5[@] *13*	12^+		L		
3595.5 *3*			C		
3601.1 *10*	1	0.0064 eV *6*	C	0	B(E1)↑=0.39×10^{-5} *4*
3632.7 *5*			B		
3641.1 *10*	1	0.0013 eV *4*		0	B(E1)↑=0.08×10^{-5} *2*
3655.3 *7*	1	0.0068 eV *8*		0	B(E1)↑=0.25×10^{-5} *6*
3664.75 *20*			B		
3674.56 *15*			C		
3681.86 *20*			C		
3708.38 *17*			C		
3732.1 *10*	1	0.0067 eV *7*		0	B(E1)↑=0.37×10^{-5} *4*
3745.53 *17*			C		
3747.24 *20*			C		
3758.63 *20*			C		
3763.1 *10*	1	0.0024 eV *7*		0	B(E1)↑=0.13×10^{-5} *4*
3782.3 *7*	1	0.0142 eV *10*		0	B(E1)↑=0.53×10^{-5} *7*
3794.27 *20*			C		
3794.3 *3*			C		
3805.97 *20*			C		
3839.17 *20*			C		
3841.5 *3*			C		
3849.1 *10*	1	0.0086 eV *8*	C	0	B(E1)↑=0.43×10^{-5} *4*
3876.1 *10*	1	0.0056 eV *7*	C	0	B(E1)↑=0.27×10^{-5} *3*
3895.3 *7*	1	0.0273 eV *16*		0	B(E1)↑=0.90×10^{-5} *10*
3916.1 *4*	$(1,2^+)$		C		Jπ: γ to 0^+.
3924.2 *3*			C		
3943.07 *20*			C		
3976.1 *10*	1	0.0044 eV *7*		0	B(E1)↑=0.20×10^{-5} *3*
3984.6 *3*			C		
3997.1 *10*	1	0.0022 eV *7*		0	B(E1)↑=0.10×10^{-5} *3*
4009.7 *3*			C		
4022.97 *20*			C		
4027.1 *10*	1	0.0067 eV *9*		0	B(E1)↑=0.29×10^{-5} *4*
4057.88 *20*			C		
4059.4[a] *14*	(11^-)		L		
4080.2 *3*			C		
4083.60 *17*			C		
4135.85 *20*			C		
4177.2 *3*			C		
4231.48 *20*			C		
4247.0 *3*			C		
4290.19 *20*			C		
4378.46 *20*			C		
4380.5[@] *16*	(14^+)		L		
4428.29 *20*			C		
4432.06 *20*			C		

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Adopted Levels, Gammas (continued)

^{116}Cd Levels (continued)

E(level)†	XREF	E(level)†	XREF	E(level)†	XREF
4449.5 *3*	C	4632.0 *3*	C	4773.0 *3*	C
4475.94 *17*	C	4642.66 *14*	C	4787.17 *20*	C
4539.20 *20*	C	4647.4 *3*	C	4828.88 *20*	C
4561.89 *20*	C	4652.85 *20*	C	4916.6 *3*	C
4575.1 *7*	C	4689.22 *19*	C	4924.6 *3*	C
4590.80 *20*	C	4697.55 *20*	C	4953.6 *3*	C
4614.81 *14*	C	4755.16 *20*	C	4968.88 *20*	C

† Energies of levels are based on least squares fit to the adopted gammas.
‡ Unless given otherwise, J^{π} are based on $\gamma\gamma(\theta)$, band assignment in (^{28}Si,Fγ) and (^{94}Kr,xnγ).
# Band(A): band based on the first 0^+.
@ Band(B): g.s. band.
& Band(C): intruder band based on the second 0^+.
a Band(D): band based on 5^-.

Adopted Levels, Gammas (continued)

γ(^{116}Cd)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult.[‡]	δ	α[#]	Comments
513.490	2^+	513.50 *5*	100	0.0	0^+	[E2]			B(E2)(W.u.)=33.5 *12*
1212.997	2^+	699.512 *14*	100 *3*	513.490	2^+	E2+M1	−1.5 *+9−4*		B(E2)(W.u.)=25 *10*; B(M1)(W.u.)=0.007 *6* Mult.: from γ(θ) with Δπ=no required by level scheme, RUL rules out E1+M2.
		1212.980 *14*	49.1 *12*	0.0	0^+	[E2]			B(E2)(W.u.)=1.11 *18*
1219.448	4^+	705.950 *14*	100	513.490	2^+	[E2]			B(E2)(W.u.)=56 *14*
1282.560	0^+	68.9 *8*	22 *4*	1212.997	2^+	[E2]		5.6 *3*	B(E2)(W.u.)=3.0×10^4 *8*
		769.065 *14*	100 *20*	513.490	2^+	[E2]			B(E2)(W.u.)=0.79 *22*
1380.310	0^+	866.816 *14*	100	513.490	2^+	[E2]			B(E2)(W.u.)=30 *6*
1642.499	2^+	429.6 *4*	1.0 *3*	1212.997	2^+				E_γ: a 422γ seen in β^- decay and (p,p′γ) has not been adopted.
		1129.000 *14*	100 *20*	513.490	2^+	M1+E2	+1.10 *20*		B(E2)(W.u.)=6.2 *+22−26*; B(M1)(W.u.)=0.009 *4*
		1642.53 *3*	61 *12*	0.0	0^+	E2			B(E2)(W.u.)=1.1 *4*
1869.477	4^+	650.02 *2*	1.0×10^2 *4*	1219.448	4^+	M1+E2	−1.16 *+19−32*		B(E2)(W.u.)=1.5×10^2 *+8−13*; B(M1)(W.u.)=0.06 *+4−6*
		656.48 *2*	$9.\times10^1$ *4*	1212.997	2^+				
		1356.00 *4*	45 *19*	513.490	2^+				
1915.816	3^+	273.41 *5*	19.2 *14*	1642.499	2^+				
		696.36 *15*	50 *10*	1219.448	4^+				
		702.77 *5*	98 *9*	1212.997	2^+				
		1402.309 *19*	100 *3*	513.490	2^+	D+Q	−2.3 *4*		
1921.557	3^-	708.7 *2*	30 *4*	1212.997	2^+				
		1408.059 *18*	100 *3*	513.490	2^+	(E1+M2)	≤0.39		Mult.: from γ(θ) with Δπ=yes required by level scheme.
1928.44	0^+	1414.94 *5*	100	513.490	2^+				
1951.33	2^+	668.73 *7*	23.0 *20*	1282.560	0^+				
		731.77 *25*	2.8 *5*	1219.448	4^+				
		738.4 *3*	1.4 *6*	1212.997	2^+				
		1437.87 *24*	100 *3*	513.490	2^+	M1+E2	−0.54 *15*		B(E2)(W.u.)=0.9 *5*; B(M1)(W.u.)=0.0081 *+20−30*
		1951.35 *6*	17.1 *6*	0.0	0^+				
2026.66	6^+	807.21 *3*	100	1219.448	4^+	E2			B(E2)(W.u.)=1.1×10^2 *+4−8*
2037.04	2^+	656.73 *5*	100	1380.310	0^+				
2041.91	4^+	399.40 *6*	30.8 *15*	1642.499	2^+	E2		0.01301	
		822.47 *8*	30.7 *17*	1219.448	4^+	M1+E2	−0.37 *17*		
		1528.40 *5*	100 *3*	513.490	2^+	E2			
2118.43	$(2)^+$	835.7 *3*	55 *8*	1282.560	0^+				
		905.5 *3*	5.9 *8*	1212.997	2^+				
		1604.95 *3*	100 *5*	513.490	2^+	M1+E2	−0.05 *5*		
2189.0?		974.4 *15*	100	1212.997	2^+				
2195.4?		1681.0 *6*	100	513.490	2^+				
2248.837	5^-	1029.380 *14*	100	1219.448	4^+	E1			
		1736.0 *14*		513.490	2^+				
2291.9	5^-	102.7 *5*	34	2189.0?					
		264.3 *8*	100	2026.66	6^+				

$^{116}_{48}Cd_{68}$-6

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Mult. ‡	δ	Comments
2292.47	2+	173.8 *3*	8 *4*	2118.43	(2)+			
		650.0 *1*	100 *8*	1642.499	2+			
2293.2		1080.2 *6*	100	1212.997	2+			
2293.7	(2,3+)	1780.2 *3*	100	513.490	2+	M1+E2	+4.7 *20*	
2296.29	+	178.0 *3*	4.0 *24*	2118.43	(2)+			
		1083.29 *4*	100 *5*	1212.997	2+	M1+E2		Mult.: δ=−0.20 *10* or +3 *2*.
2302.95		1083.5 *2*	100	1219.448	4+			
2339.77	4−	418.2 *3*	10.0 *20*	1921.557	3−			
		423.9 *2*	50 *5*	1915.816	3+			
		1120.32 *5*	100 *8*	1219.448	4+			
2376.45	4+	334.5 *5*	5.0 *20*	2041.91	4+			
		1157.00 *4*	100 *4*	1219.448	4+	D+Q	−0.07 *7*	
2377.073	3+	258.83 *8*	7.8 *11*	2118.43	(2)+			
		1164.07 *1*	100.0 *7*	1212.997	2+			
		1863.49 *5*	18.5 *18*	513.490	2+			δ: δ=−0.18 *10* or −2.5 *9* (1991Ar17).
2391.50	(2+,3)	748.6 *3*	8.6 *18*	1642.499	2+			
		1178.40 *15*	15.7 *14*	1212.997	2+			
		1878.00 *3*	100 *3*	513.490	2+			
2435.03	2+	1152.46 *15*	100 *7*	1282.560	0+	E2		
		2435.0 *3*	63 *4*	0.0	0+			
2478.15	1−	2478.12 *7*	100	0.0	0+	E1		B(E1)(W.u.)=0.000397 *25*
2488.0	1+	2488	100	0.0	0+	M1		B(M1)(W.u.)=0.0066 *10*
2493.66		1274.2 *2*	100	1219.448	4+			
2503.83	(5−)	254.98 *5*	100 *5*	2248.837	5−			
		861.33 *10*	37 *3*	1642.499	2+			
		1991.0 *5*	8.2 *19*	513.490	2+			
2517.49		1235.1 *3*	10.1 *15*	1282.560	0+			
		1304.46 *5*	100 *7*	1212.997	2+			
		2004.3 *4*	33 *13*	513.490	2+			
2564.7	6+	538 *1*	100	2026.66	6+			
2572.16		2059.0 *2*	100	513.490	2+			
2604.85	2+,3,4+	1385.0 *2*	72 *4*	1219.448	4+			
		2091.36 *5*	100 *5*	513.490	2+			
		2604.8 *3*	14 *7*	0.0	0+			
2627.7?		711.9 *4*	100	1915.816	3+			
		1414.6 *6*	75 *9*	1212.997	2+			
2653.90		2140.39 *6*	100	513.490	2+			
2659.0	1+	2659	100	0.0	0+	M1		B(M1)(W.u.)=0.0116 *11* pol=+0.11 *7*.
2672.83		423.86 *9*	100 *5*	2248.837	5−			
		752.4 *6*	13 *3*	1921.557	3−			
		757.2 *3*	14 *3*	1915.816	3+			
		1453.57 *13*	54 *3*	1219.448	4+			

$^{116}_{48}Cd_{68}$-7

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
2690.90	(5$^-$)	351.2 *2*	6.9 *8*	2339.77	4$^-$	M1	α(K)exp=1.5×10^{-2} *3*
		442.0 *1*	18 *4*	2248.837	5$^-$		
		664.6 *3*	100 *23*	2026.66	6$^+$		
2693.17	(7$^-$)	444.2		2248.837	5$^-$		
		666.4		2026.66	6$^+$		
2698.8	(5$^-$)	450.0 *5*	100	2248.837	5$^-$	M1,E2	α(K)exp=7×10^{-3} *2*
2720.09	1$^-$	678.1 *3*	5.7 *15*	2041.91	4$^+$		
		1500.9 *3*	13.5 *17*	1219.448	4$^+$		
		2206.56 *7*	100 *3*	513.490	2$^+$		
2727.25		1507.9 *3*	30 *16*	1219.448	4$^+$		
		2213.67 *25*	100 *9*	513.490	2$^+$		
2760.1?	(1,2$^+$)	2246.3 *6*	100	513.490	2$^+$		
		2759.8 *7*	35 *4*	0.0	0$^+$		
2762.0	1	2762	100	0.0	0$^+$		
2764.6		1122.3 *5*	23 *11*	1642.499	2$^+$		
		1384.1 *5*	32 *10*	1380.310	0$^+$		
		2250.8 *10*	100 *9*	513.490	2$^+$		
2779.7	(10$^+$)	215 *1*	100	2564.7	6$^+$		
2782.6	2$^+$	1569.6 *6*	100	1212.997	2$^+$		
2786.14		2272.63 *15*	100	513.490	2$^+$		
2802.96		881.7 *5*	16 *5*	1921.557	3$^-$		
		2289.49 *6*	100 *5*	513.490	2$^+$		
2810.5	1,2$^+$	2810.5 *3*	100	0.0	0$^+$		
2817.6		1604.6 *6*	100	1212.997	2$^+$		
2822.35		901.0 *2*	30	1921.557	3$^-$		
		1602.5 *4*	100 *17*	1219.448	4$^+$		
		1609.3 *5*	50	1212.997	2$^+$		
		2308.6 *3*	98 *10*	513.490	2$^+$		
2824.9	8$^+$	798	100	2026.66	6$^+$		
2828.3	(6$^-$)	579.5	100	2248.837	5$^-$		
2828.6	1$^-$	2315.1 *6*	39 *5*	513.490	2$^+$		
		2828.5 *3*	100 *20*	0.0	0$^+$	E1	
2845.3	1$^+$	2332	100 *20*	513.490	2$^+$		
		2845	51 *10*	0.0	0$^+$	M1	
2862.45		1649.4 *3*	58 *12*	1212.997	2$^+$		
		2348.9 *3*	100 *20*	513.490	2$^+$		
2865.62	(5$^-$)	1646.1 *2*	100	1219.448	4$^+$		
2873.2	8$^+$	846.6 *3*	100	2026.66	6$^+$		
2877.52	(6$^-$)	186.6 *4*	18 *3*	2690.90	(5$^-$)	M1	α(K)exp=8×10^{-2} *2*
		373.6 *4*	13.4 *15*	2503.83	(5$^-$)		
		537.6 *6*	43 *4*	2339.77	4$^-$		
		628.6 *2*	100 *9*	2248.837	5$^-$		α(K)exp=3×10^{-3} *1*
2909.79		2396.27 *17*	100	513.490	2$^+$		

$^{116}_{48}Cd_{68}$-8

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
2915.34		1696.0 *3*	100	1219.448	4^+		
		1702.2 *3*	100	1212.997	2^+		
2958.22	(6^-)	666.26 *17*	39.0 *20*	2291.9	5^-		
		708.8 *8*	100 *5*	2248.837	5^-		
		931.5 *4*	18 *5*	2026.66	6^+		
2978.19		1056.6 *3*	1.0×10^2 *3*	1921.557	3^-		
		2464.7 *3*	$7.\times10^1$ *3*	513.490	2^+		
3001.44		2487.9 *3*	98 *18*	513.490	2^+		
		3001.4 *1*	100 *20*	0.0	0^+		
3013.38	$(5^-,6^-)$	135.6 *2*	8 *3*	2877.52	(6^-)	M1	α(K)exp=1.2×10^{-1} *3*
		147.7 *2*	2.0 *5*	2865.62	(5^-)	M1,E2	α(K)exp=2.3×10^{-1} *9*
		320.2 *2*	83 *8*	2693.17	(7^-)	M1,E2	α(K)exp=1.9×10^{-2} *3*
		673.5 *2*	100 *17*	2339.77	4^-		
		764.7 *2*	45 *5*	2248.837	5^-		
		987.0 *2*	23 *3*	2026.66	6^+		
3014.74		1801.8 *3*	61 *7*	1212.997	2^+		
		2501.1 *4*	100 *10*	513.490	2^+		
3040.0	10^+	167	40	2873.2	8^+		
		215	100	2824.9	8^+		
3068.0	1^+	3068	100	0.0	0^+	M1	B(M1)(W.u.)=0.0346 *17*
3087.83	(7^-)	129.3 *3*	18.6 *23*	2958.22	(6^-)	M1	α(K)exp=1.5×10^{-1} *7*
		210.6 *3*	16 *3*	2877.52	(6^-)	M1	α(K)exp=5×10^{-2} *1*
		394.6 *2*	65 *6*	2693.17	(7^-)	M1,E2	α(K)exp=1.1×10^{-2} *2*
		583.9 *2*	100 *9*	2503.83	(5^-)	E2	α(K)exp=3.8×10^{-3} *8*
		839.1 *1*	37 *3*	2248.837	5^-		
		1061.1 *1*	15.1 *12*	2026.66	6^+		
3102.7		1180.9 *5*	50 *20*	1921.557	3^-		
		2589.2 *3*	1.0×10^2 *4*	513.490	2^+		
3118.21	1^-	640.06 *13*	100	2478.15	1^-		
3124.6		1911.6 *3*	100	1212.997	2^+		
3130.14		881.1 *3*	100	2248.837	5^-		
3137.62		2624.1 *2*	100	513.490	2^+		
3156.0	1^-	3156	100	0.0	0^+	E1	B(E1)(W.u.)=0.000103 *10*
3162.46		1135.8 *2*	100	2026.66	6^+		
3175.68		1533.1 *6*	0.64 *13*	1642.499	2^+		
		1956.2 *3*	59 *11*	1219.448	4^+		
		2662.2 *4*	100 *20*	513.490	2^+		
3212.66		1186.0 *2*	100	2026.66	6^+		
3213.44	(6^+)	522.5 *5*	100 *11*	2690.90	(5^-)	E1	α(K)exp=2.1×10^{-3} *7*
		964.6 *2*	81 *16*	2248.837	5^-		
3217.00	2^+	1575.1 *6*	4.0 *10*	1642.499	2^+		
		1836.6 *6*	5.0 *10*	1380.310	0^+		
		2703.4 *3*	100 *20*	513.490	2^+		

$^{116}_{48}Cd_{68}$-9

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Comments
3217.00	2^+	3216.6 *7*	6.0 *10*	0.0	0^+	
3218.44		1267.1 *2*	100	1951.33	2^+	
3227.99		2008.4 *2*	100	1219.448	4^+	
		2015.1 *2*	40	1212.997	2^+	
3250.65		3250.6 *2*	100	0.0	0^+	
3275.65		555.2 *3*	30 *10*	2720.09	1^-	
		2062.8 *2*	1.0×10^2 *3*	1212.997	2^+	
3282.0	1	3282	100	0.0	0^+	
3287.23		2773.7 *2*	100	513.490	2^+	
3294.35		1378.4 *3*	15.0	1915.816	3^+	
		2075.0 *4*	26	1219.448	4^+	
		2081.5 *4*	100	1212.997	2^+	
		2780.8 *2*	50	513.490	2^+	
3299.3		781.8 *4*	100	2517.49		
3303.1		1381.5 *3*	100	1921.557	3^-	
3304.12		2084.7 *2*	100	1219.448	4^+	
		2091.0 *3*	55	1212.997	2^+	
3307.2		829.0 *3*	100	2478.15	1^-	
3339.95		3339.9 *2*	100	0.0	0^+	
3348.02	$(1,2^+)$	545.6 *2*	7.0 *10*	2802.96		
		776.2 *2*	6.0 *20*	2572.16		
		830.4 *3*	9.0 *10*	2517.49		
		869.0 *4*	36 *4*	2478.15	1^-	
		1151.7 *6*	9.0 *10*	2195.4?		
		1704.9 *6*	17.0 *20*	1642.499	2^+	
		2062.4 *7*	0.32 *10*	1282.560	0^+	
		2134.0 *6*	70 *14*	1212.997	2^+	
		2834.1 *7*	100 *20*	513.490	2^+	
		3347.4 *7*	8.0 *20*	0.0	0^+	
3354.88		2135.4 *2*	23.0	1219.448	4^+	
		2841.4 *5*	100	513.490	2^+	
3359.94		229.6 *3*	6.7 *22*	3130.14		α(K)exp=4×10^{-2} *1*
		667.1 *5*	44 *16*	2693.17	(7^-)	
		669.0 *5*	67 *22*	2690.90	(5^-)	
		1111.1 *2*	100 *13*	2248.837	5^-	
		1333.3 *2*	24.4 *22*	2026.66	6^+	
3372.0		1345.3 *3*	100	2026.66	6^+	
3373.0		1124.2 *5*	100	2248.837	5^-	
3378.14		1462.2 *3*	1.0×10^2 *7*	1915.816	3^+	
		2165.1 *2*	27 *10*	1212.997	2^+	
		2864.9 *4*	63 *13*	513.490	2^+	
3378.6		861.1 *3*	100	2517.49		
3382.5	(9^-)	689.3	100	2693.17	(7^-)	

$^{116}_{48}Cd_{68}$-10

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
3387.7		559.1 *2*	100	2828.6	1^-		
3398.6	$(1,2^+)$	881.4 *5*	100 *20*	2517.49			
		3398.0 *7*	87 *9*	0.0	0^+		
3401.1	1	3401	100	0.0	0^+		
3423.1	1^+	3423	100	0.0	0^+	M1	B(M1)(W.u.)=0.0034 *6*
3433.3		2150.6 *6*	37 *8*	1282.560	0^+		
		2919.9 *7*	100 *20*	513.490	2^+		
3471.33		2091.0 *2*	100	1380.310	0^+		
3472.13		609.6 *3*	42 *8*	2862.45			
		994.05 *12*	100 *20*	2478.15	1^-		
		1550.3 *6*	24 *5*	1921.557	3^-		
		2090.8 *6*	64 *13*	1380.310	0^+		
		2958.2 *6*	41 *8*	513.490	2^+		
3486.06		1237.1 *3*	63 *13*	2248.837	5^-		
		1459.5 *3*	100 *13*	2026.66	6^+		
3511.86		3511.8 *2*	100	0.0	0^+		
3527.30		1009.6 *2*	80 *20*	2517.49			
		3014.6 *4*	1.0×10^2 *5*	513.490	2^+		
3531.56		3531.5 *2*	100	0.0	0^+		
3542.7		782.6 *2*	100 *12*	2760.1?	$(1,2^+)$		
		3029.4 *4*	8 *4*	513.490	2^+		
3549.54		1045.7 *2*	100	2503.83	(5^-)		
3560.31		1168.8 *2*	100	2391.50	$(2^+,3)$		
3578.5	12^+	538.4	100	3040.0	10^+		
3595.5		3082.0 *3*	100	513.490	2^+		
3601.1	1	3601	100	0.0	0^+		
3632.7		1606.0 *5*	100	2026.66	6^+		
3641.1	1	3641	100	0.0	0^+		
3655.3	1	3142	$5.\times10^1$ *3*	513.490	2^+		
		3655	100	0.0	0^+		
3664.75		1415.9 *2*	100	2248.837	5^-		
3674.56		954.6 *2*	64 *7*	2720.09	1^-		
		1758.6 *2*	100 *7*	1915.816	3^+		
3681.86		3681.8 *2*	100	0.0	0^+		
3708.38		3194.9 *2*	100 *21*	513.490	2^+		
		3708.2 *3*	36 *7*	0.0	0^+		
3732.1	1	3732	100	0.0	0^+		
3745.53		1354.0 *2*	100 *8*	2391.50	$(2^+,3)$		
		1824.0 *3*	31 *15*	1921.557	3^-		
3747.24		3233.7 *2*	100	513.490	2^+		
3758.63		2545.6 *2*	100	1212.997	2^+		
3763.1	1	3763	100	0.0	0^+		
3782.3	1	3269	43 *13*	513.490	2^+		

$^{116}_{48}Cd_{68}$-11

Adopted Levels, Gammas (continued)

γ(^{116}Cd) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π
3782.3	1	3782	100	0.0	0^+
3794.27		1872.7 *2*	100	1921.557	3^-
3794.3		1276.8 *3*	100	2517.49	
3805.97		3805.9 *2*	100	0.0	0^+
3839.17		1917.6 *2*	100	1921.557	3^-
3841.5		3328.0 *3*	100	513.490	2^+
3849.1	1	3849	100	0.0	0^+
3876.1	1	3876	100	0.0	0^+
3895.3	1	3382	48 *12*	513.490	2^+
		3895	100	0.0	0^+
3916.1	$(1,2^+)$	1133.6 *6*	32 *6*	2782.6	2^+
		2703.1 *5*	100 *20*	1212.997	2^+
		3916.0 *7*	22 *4*	0.0	0^+
3924.2		1406.7 *3*	100	2517.49	
3943.07		3943.0 *2*	100	0.0	0^+
3976.1	1	3976	100	0.0	0^+
3984.6		3471.1 *3*	100	513.490	2^+
3997.1	1	3997	100	0.0	0^+
4009.7		4009.6 *3*	100	0.0	0^+
4022.97		4022.9 *2*	100	0.0	0^+
4027.1	1	4027	100	0.0	0^+
4057.88		4057.8 *2*	100	0.0	0^+
4059.4	(11^-)	676.9	100	3382.5	(9^-)
4080.2		2867.2 *3*	100	1212.997	2^+
4083.60		2801.1 *2*	100 *17*	1282.560	0^+
		4083.3 *3*	50 *17*	0.0	0^+
4135.85		3622.3 *2*	100	513.490	2^+
4177.2		3663.6 *3*	100	513.490	2^+
4231.48		4231.4 *2*	100	0.0	0^+
4247.0		3733.4 *3*	100	513.490	2^+
4290.19		4290.1 *2*	100	0.0	0^+
4378.46		3864.9 *2*	100	513.490	2^+
4380.5	(14^+)	802	100	3578.5	12^+
4428.29		4428.2 *2*	100	0.0	0^+
4432.06		3918.5 *2*	100	513.490	2^+
4449.5		3935.9 *3*	100	513.490	2^+
4475.94		3962.4 *2*	1.0×10^2 *3*	513.490	2^+
		4475.8 *3*	57 *14*	0.0	0^+
4539.20		4539.1 *2*	100	0.0	0^+
4561.89		2640.3 *2*	100	1921.557	3^-
4575.1		1729.8 *2*	100	2845.3	1^+
4590.80		4590.7 *2*	100	0.0	0^+
4614.81		3401.8 *2*	1.0×10^2 *3*	1212.997	2^+
		4101.2 *2*	48 *12*	513.490	2^+
4632.0		4118.4 *3*	100	513.490	2^+
4642.66		3429.7 *2*	1.0×10^2 *3*	1212.997	2^+
		4129.0 *2*	43 *14*	513.490	2^+
4647.4		4133.8 *3*	100	513.490	2^+
4652.85		3439.8 *2*	100	1212.997	2^+
4689.22		3476.2 *2*	1.0×10^2 *3*	1212.997	2^+
		4688.9 *5*	5.3 *21*	0.0	0^+
4697.55		3484.5 *2*	100	1212.997	2^+
4755.16		3542.1 *2*	100	1212.997	2^+
4773.0		4259.4 *3*	100	513.490	2^+
4787.17		4273.6 *2*	100	513.490	2^+
4828.88		4315.3 *2*	100	513.490	2^+
4916.6		4403.0 *3*	100	513.490	2^+
4924.6		4411.0 *3*	100	513.490	2^+
4953.6		4440.0 *3*	100	513.490	2^+
4968.88		4455.3 *2*	100	513.490	2^+

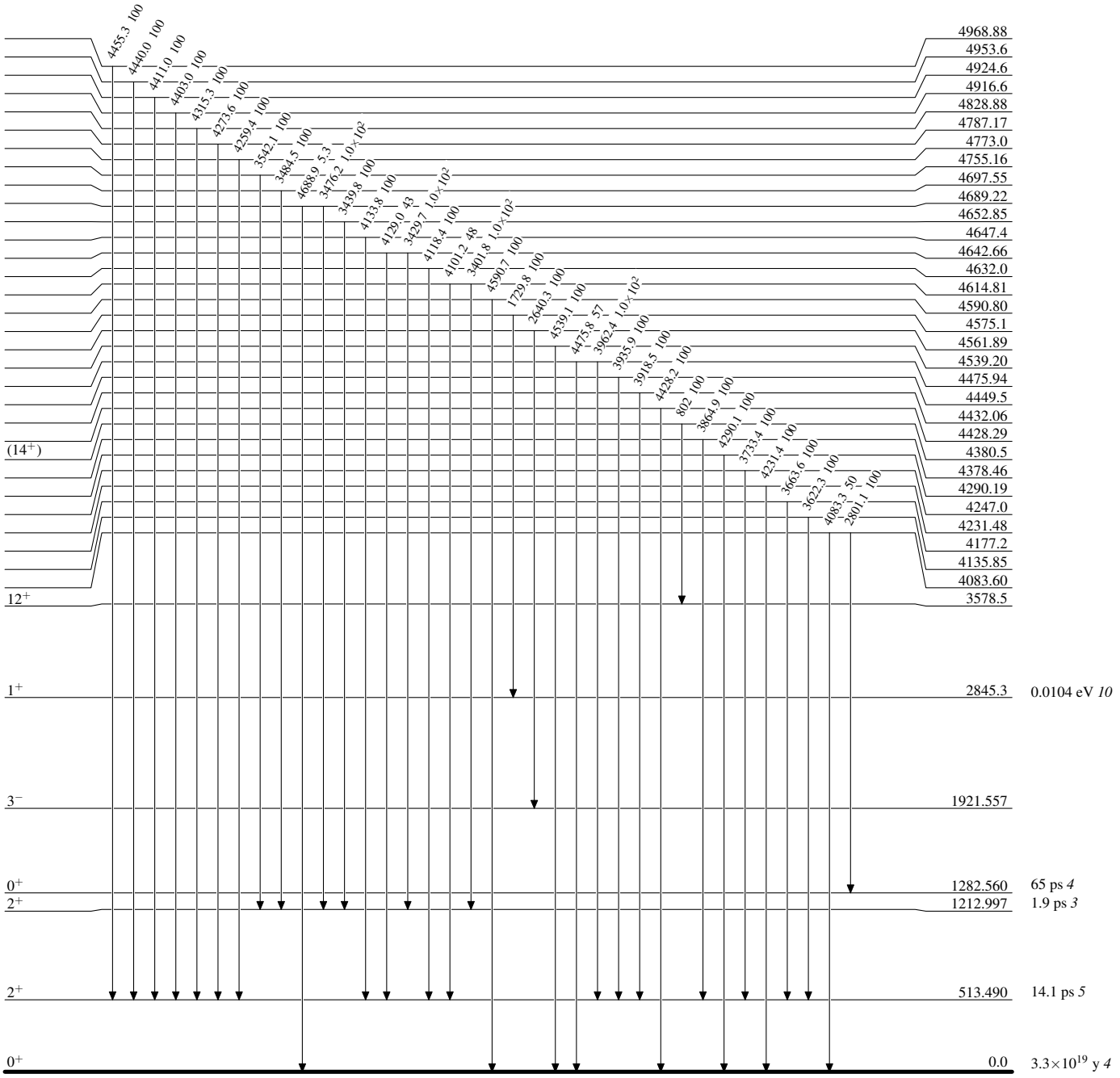
† Average of all available data.
‡ From (n,n′γ) or (γ,polγ′).
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{116}_{48}Cd_{68}$-12

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

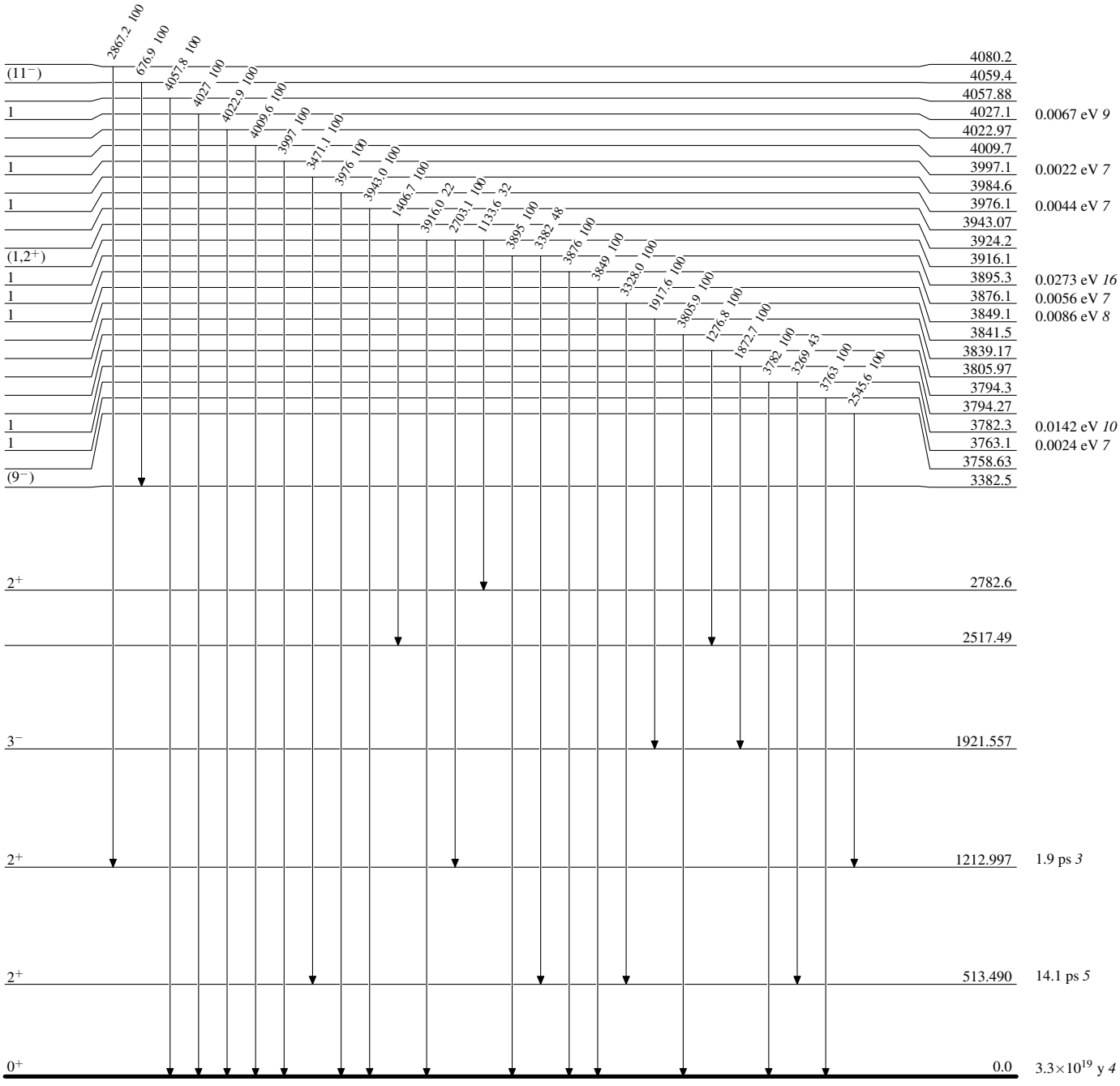


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

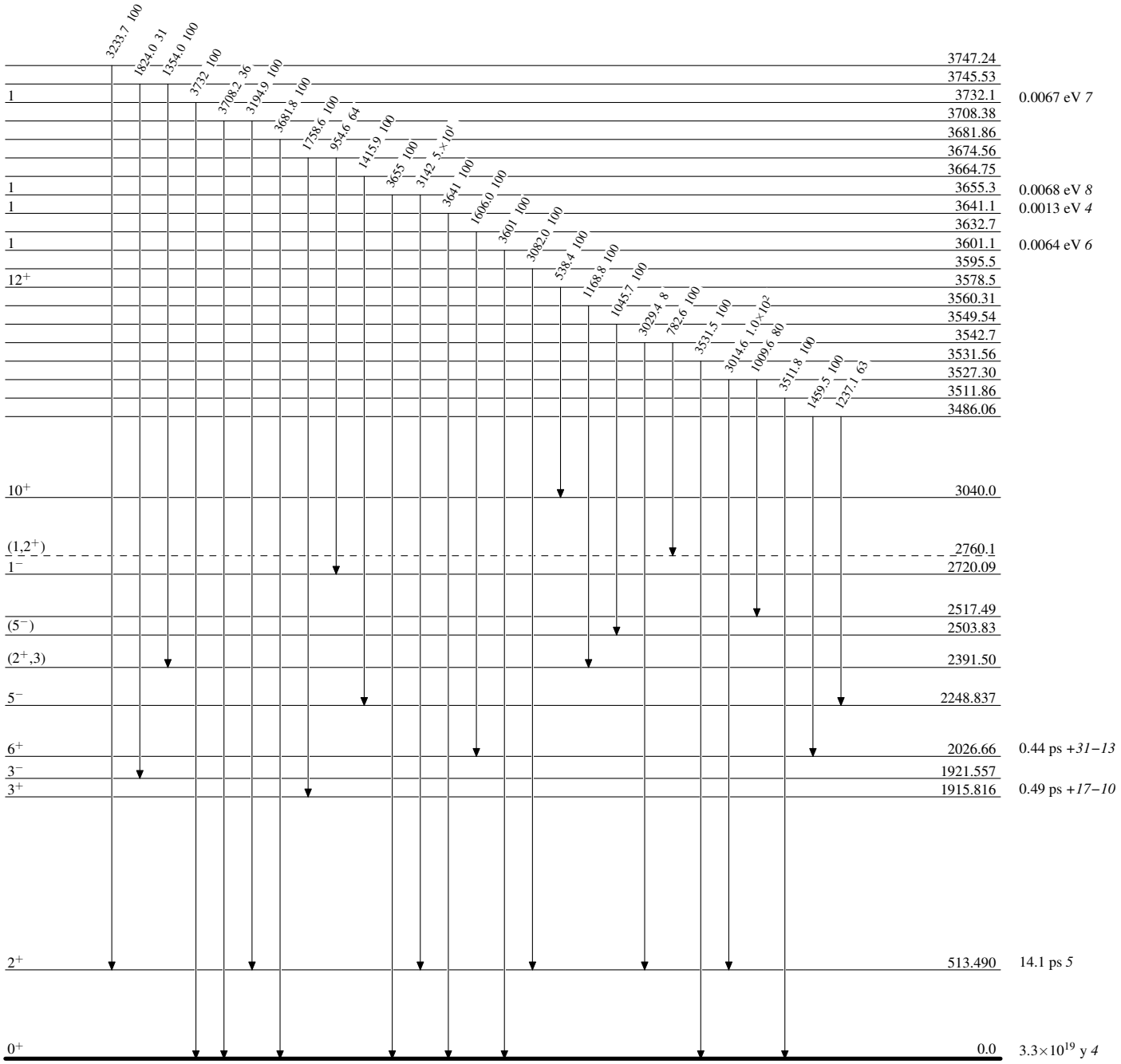


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

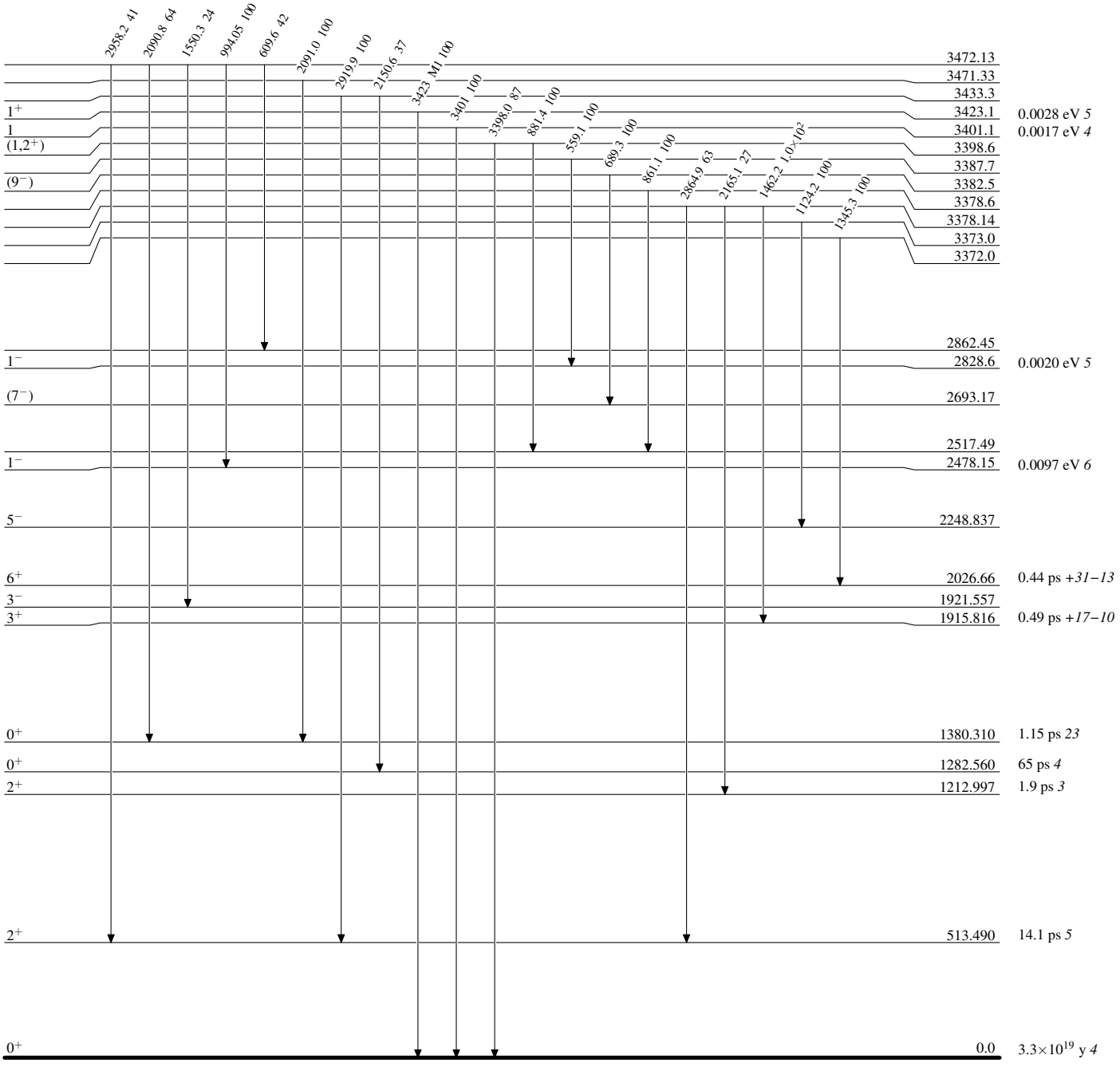


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

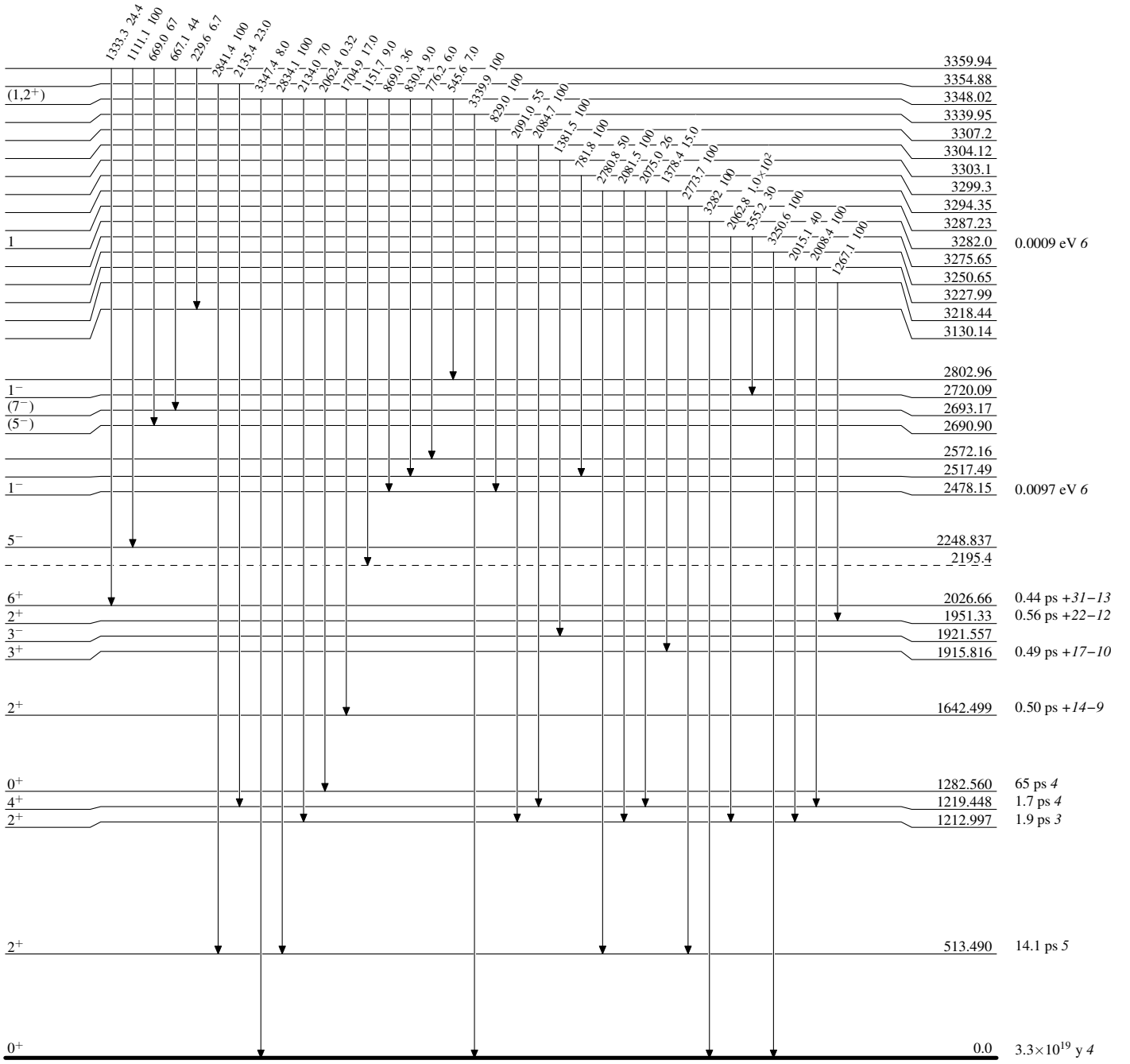


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

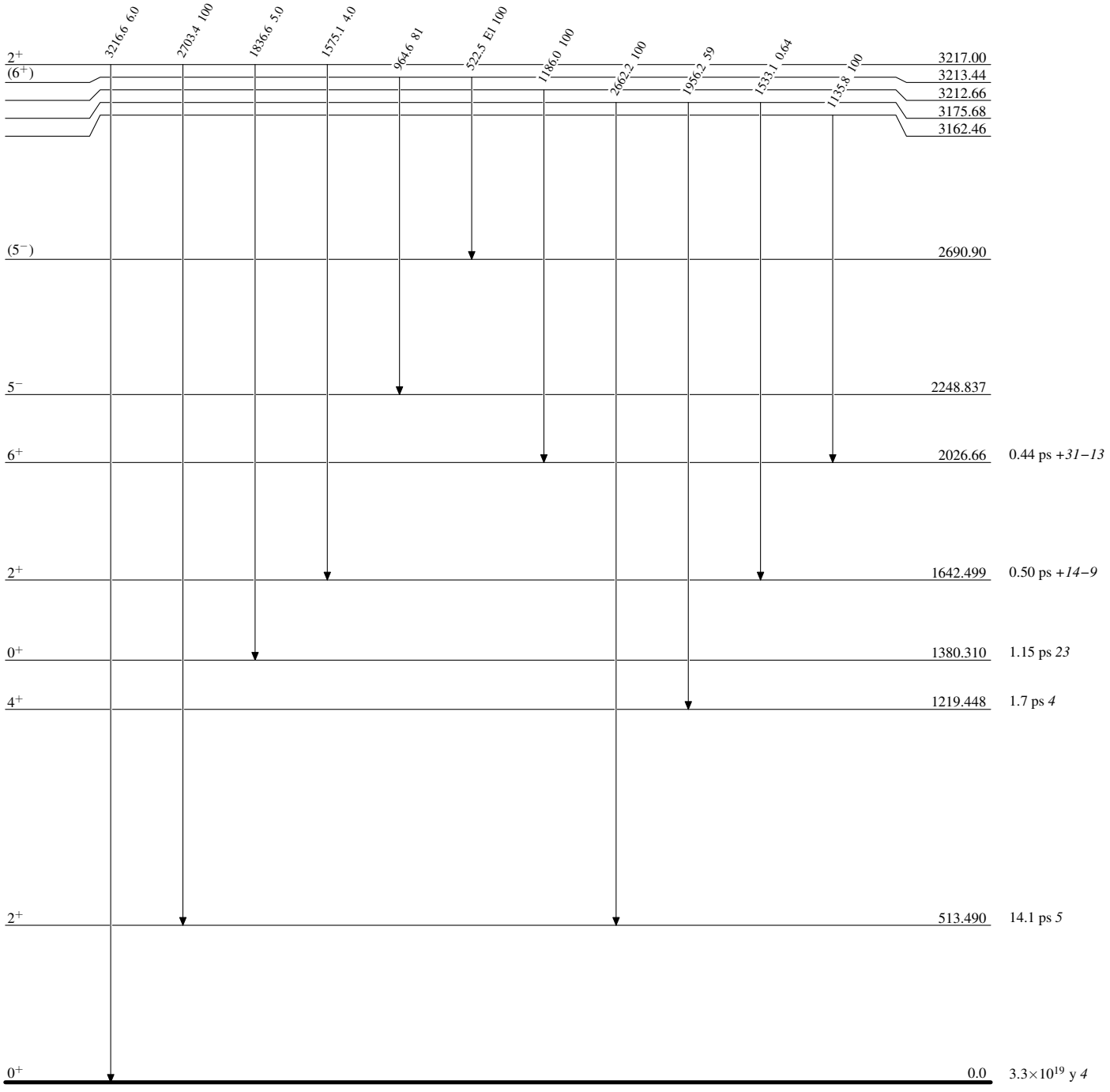


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

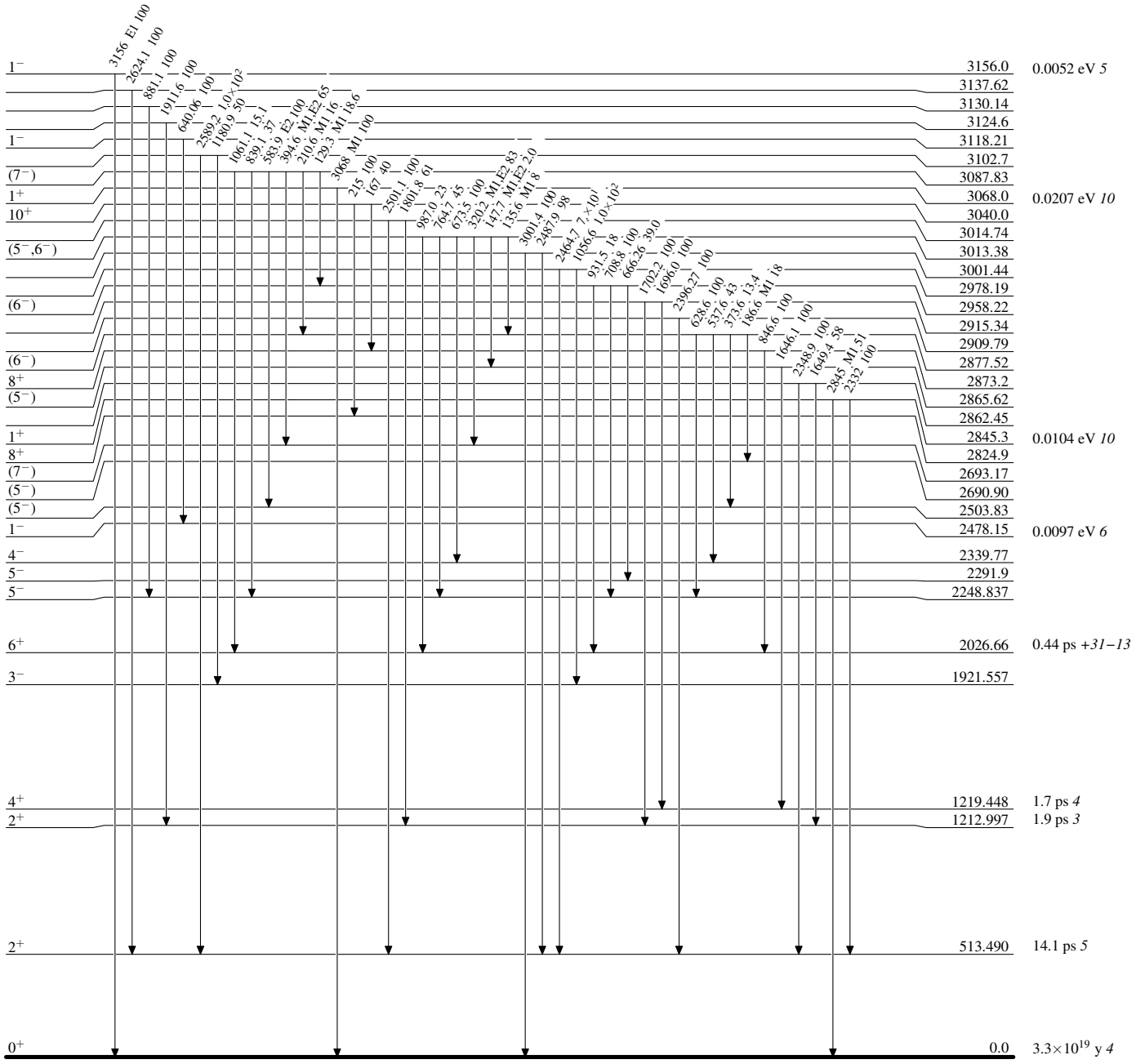


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

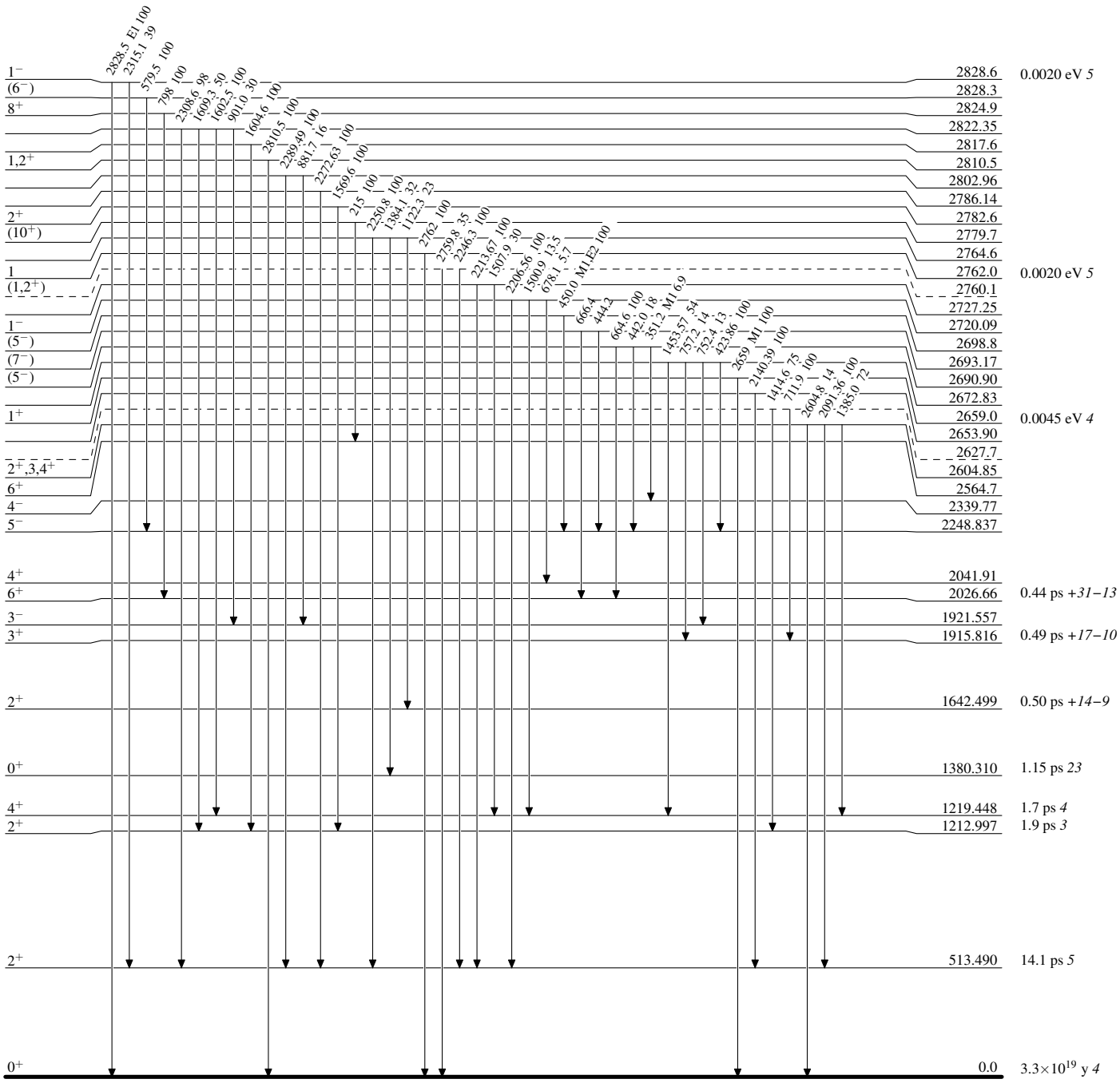


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

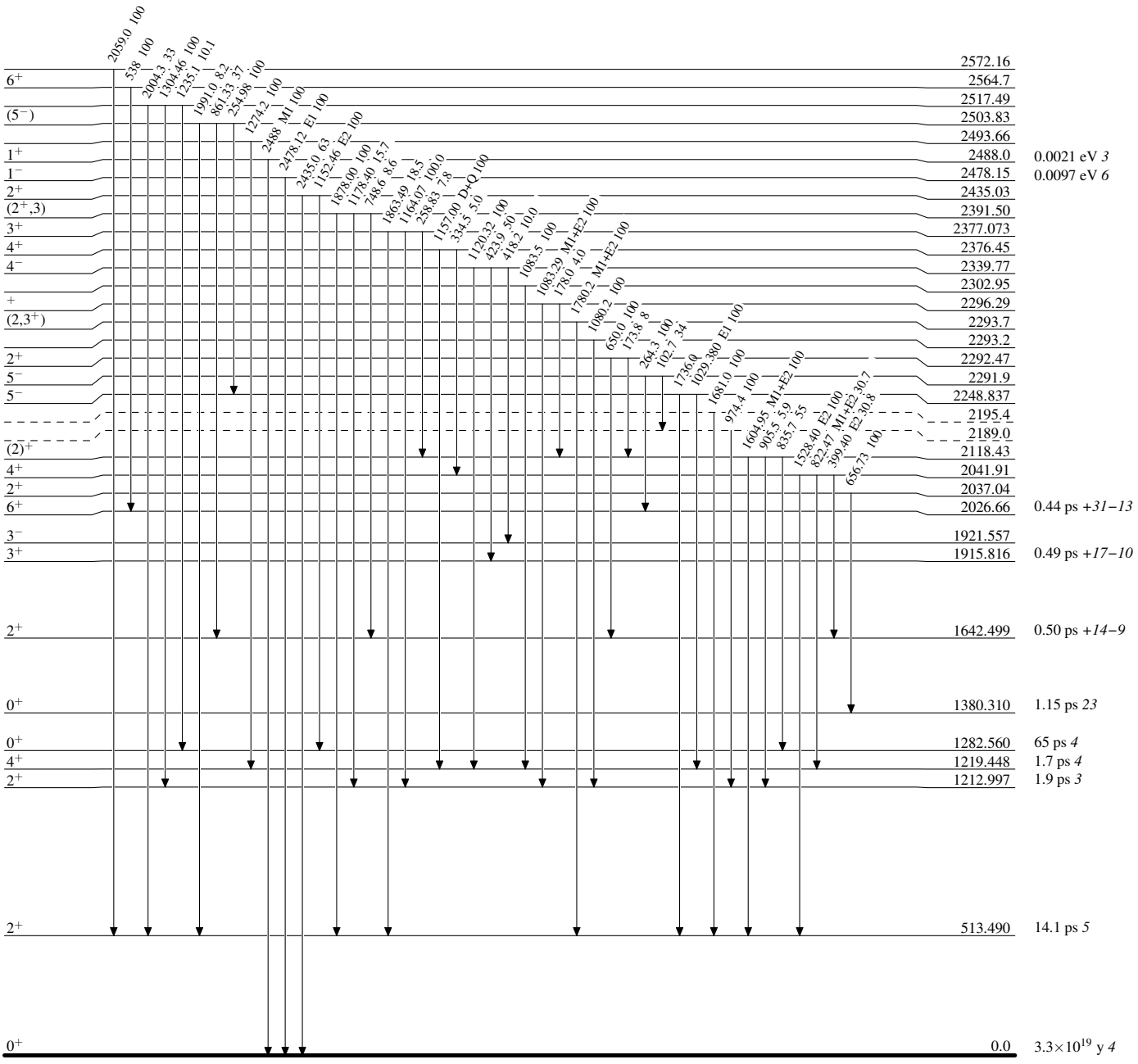


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

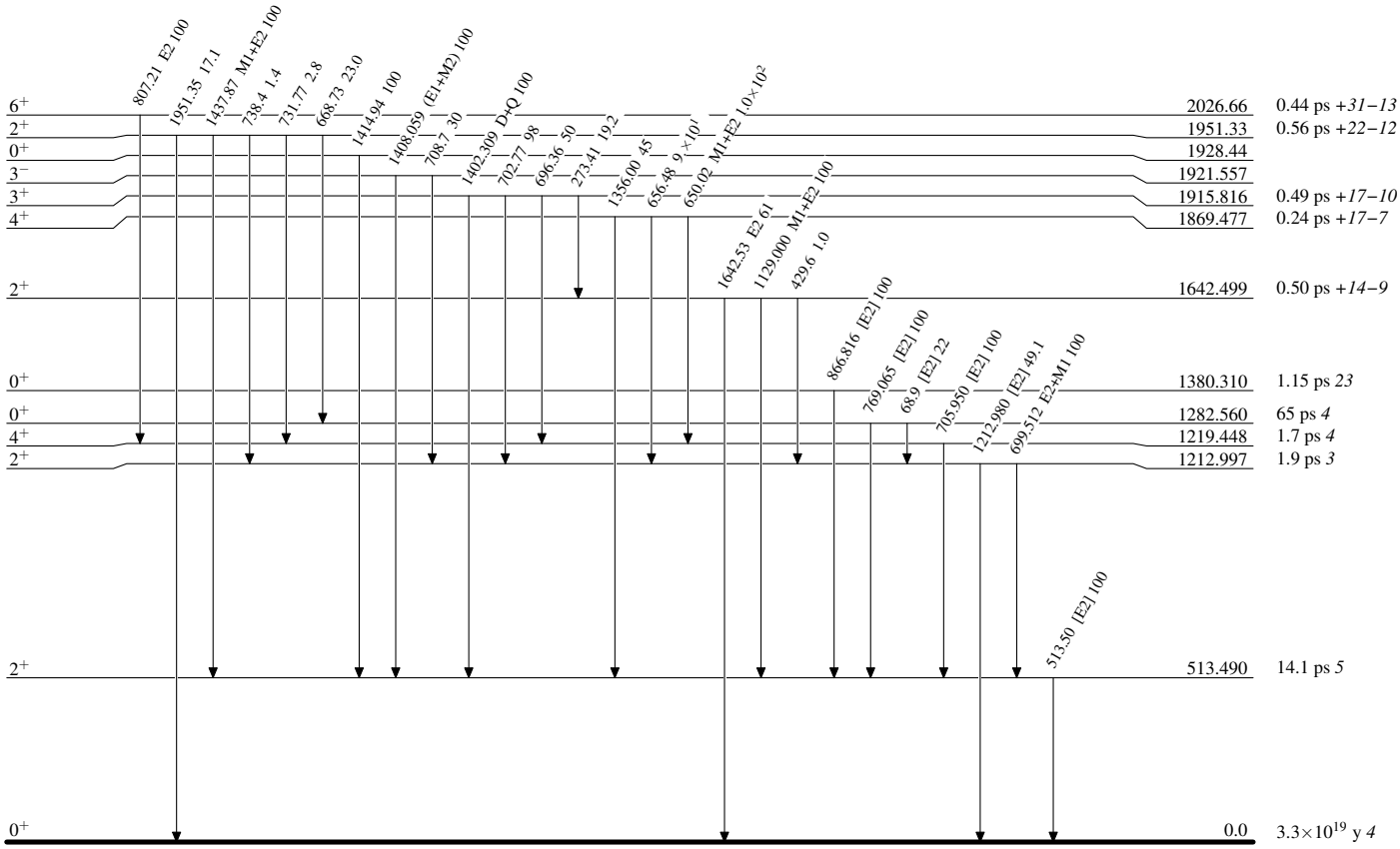


$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas

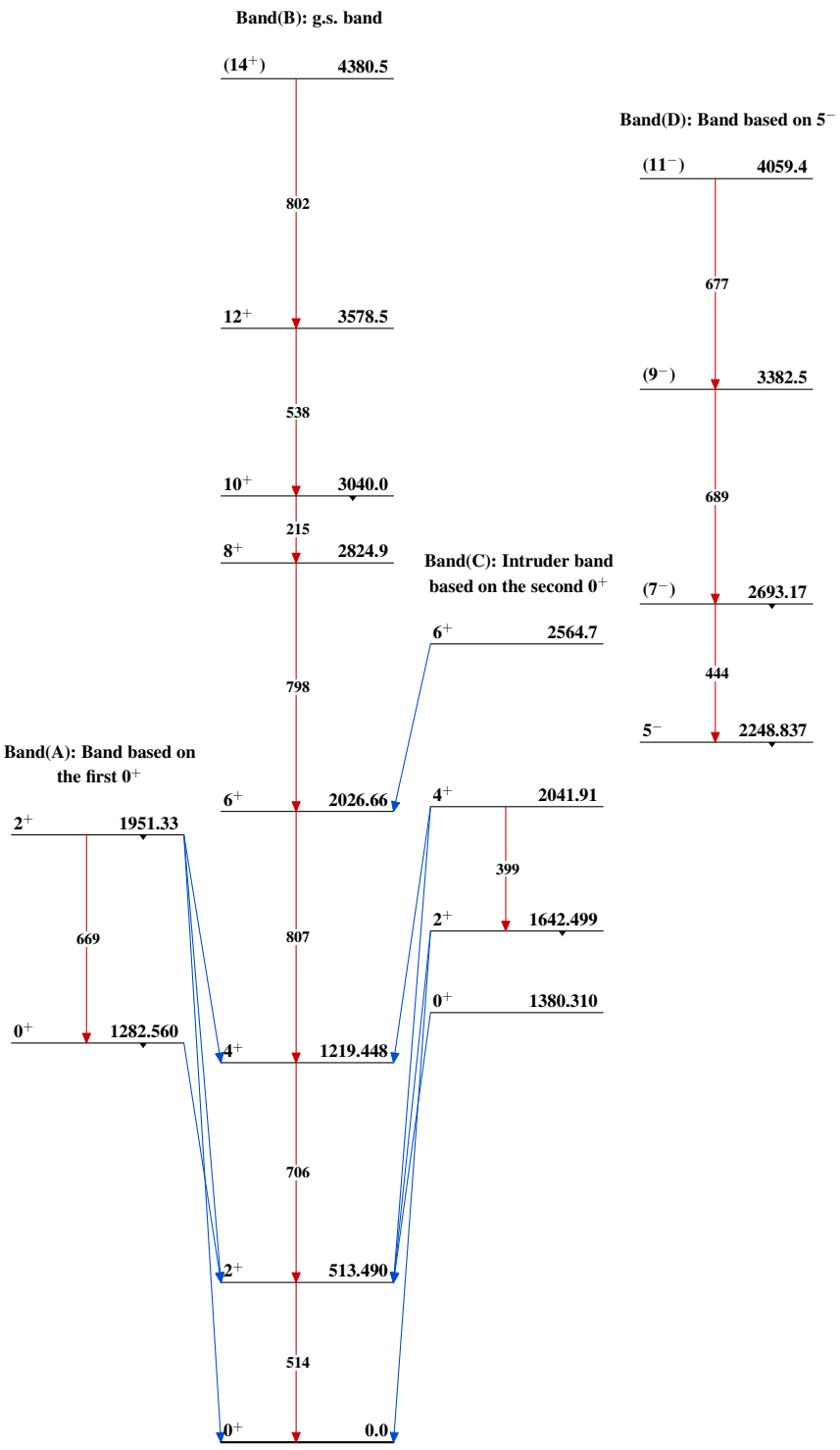
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{116}_{48}Cd_{68}$

Adopted Levels, Gammas



$^{116}_{48}Cd_{68}$