Laue class D_{2h} – *mmm*

Geometric class D_2 – 222

No. 16 $P222$ D_2^1

$$\mathcal{G} = P222$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	**a**	**b**	**c**	$P222$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p222$	L19
(100)	**b**	**c**	**a**		$[s\mathbf{d}, -s\mathbf{d}]$	$p112$	L03
(010)	**c**	**a**	**b**				

No. 17 $P222_1$ D_2^2

$$\mathcal{G} = P222_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	**a**	**b**	**c**	$P222_1$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p121$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
(100)	**b**	**c**	**a**	$P22_12$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p22_12$	L20
					$[s\mathbf{d}, -s\mathbf{d}]$	$p112$	L03
(010)	**c**	**a**	**b**	$P2_122$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_122$ $(\mathbf{a}'/4)$	L20
					$[s\mathbf{d}, -s\mathbf{d}]$	$p112$ $(\mathbf{a}'/4)$	L03

No. 18 $P2_12_12$ D_2^3

$$\mathcal{G} = P2_12_12$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	**a**	**b**	**c**	$P2_12_12$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_12_12$	L21
					$[s\mathbf{d}, -s\mathbf{d}]$	$p112$	L03
(100)	**b**	**c**	**a**	$P2_122_1$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p121$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
(010)	**c**	**a**	**b**	$P22_12_1$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p12_11$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01

Auxiliary tables for Laue class D_{2h} – *mmm*

Centring types *P* and *I*

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Auxiliary basis of the scanning group $\widehat{\mathbf{a}}$	$\widehat{\mathbf{b}}$	$\widehat{\mathbf{c}}$
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$			

Arithmetic class 222*P*

Serial No.	16	17	18	19
Group type	D_2^1	D_2^2	D_2^3	D_2^4
Group	$P222$	$P222_1$	$P2_12_12$	$P2_12_12_1$
$(mn0)$ $(\overline{m}n0)$	$P112$	$P112_1$	$P112$	$P112_1$ $(\mathbf{a}/4)$
$(0mn)$ $(0\overline{m}n)$		$P112$	$P112_1$ $(\mathbf{b}/4)$	$P112_1$ $(\mathbf{b}/4)$
$(n0m)$ $(n0\overline{m})$		$P112$ $(\mathbf{c}/4)$	$P112_1$ $(\mathbf{a}/4)$	$P112_1$ $(\mathbf{c}/4)$

Arithmetic class *mm*2*P*

Serial No.	25	26	27	28	29	30	31	32	33	34
Group type	C_{2v}^1	C_{2v}^2	C_{2v}^3	C_{2v}^4	C_{2v}^5	C_{2v}^6	C_{2v}^7	C_{2v}^8	C_{2v}^9	C_{2v}^{10}
Group	$Pmm2$	$Pmc2_1$	$Pcc2$	$Pma2$	$Pca2_1$	$Pnc2$	$Pmn2_1$	$Pba2$	$Pna2_1$	$Pnn2$
$(mn0)$ $(\overline{m}n0)$	$P112$	$P112_1$	$P112$	$P112$	$P112_1$	$P112$	$P112_1$ $(\mathbf{a}/4)$	$P112$	$P112_1$	$P112$
$(0mn)$ $(0\overline{m}n)$	$P11m$	$P11m$	$P11b$	$P11m$ $(\mathbf{a}/4)$	$P11b$ $(\mathbf{a}/4)$	$P11n$	$P11m$	$P11a$ $(\mathbf{a}/4)$	$P11n$ $(\mathbf{a}/4)$	$P11n$ $(\mathbf{a}/4)$
$(n0m)$ $(n0\overline{m})$		$P11a$	$P11a$	$P11b$	$P11b$	$P11a$ $(\mathbf{b}/4)$	$P11n$	$P11b$ $(\mathbf{b}/4)$	$P11b$ $(\mathbf{b}/4)$	$P11n$ $(\mathbf{b}/4)$

Arithmetic classes 222*I*, *mm*2*I* and *mmmI*

Serial No.	23	24	44	45	46	71	72	73	74
Group type	D_2^8	D_{2v}^9	C_{2v}^{20}	C_{2v}^{21}	C_{2v}^{22}	D_{2h}^{25}	D_{2h}^{26}	D_{2h}^{27}	D_{2h}^{28}
Group	$I222$	$I2_12_12_1$	$Imm2$	$Iba2$	$Ima2$	$Immm$	$Ibam$	$Ibca$	$Imma$
$(mn0)$ $(\overline{m}n0)$	$I112$	$I112$ $(\mathbf{b}/4)$	$I112$	$I112$	$I112$	$I112/m$	$I112/m$	$I112/b$	$I112/b$
$(0mn)$ $(0\overline{m}n)$		$I112$ $(\mathbf{c}/4)$	$I11m$	$I11b$	$I11m$ $(\mathbf{a}/4)$		$I112/b$		$I112/m$
$(n0m)$ $(n0\overline{m})$		$I112$ $(\mathbf{a}/4)$		$I11a$	$I11b$		$I112/a$		$I112/m$ $(\mathbf{a}+\mathbf{b}+\mathbf{c})/4)$