Orthorhombic
6. SCANNING TABLES
Laue class $D_{2h} - mmm$

No. 31 $Pmn2_1$ C_{2v}^7

$$\mathcal{G} = Pmn2_1$$

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)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	$Pmn2_1$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$	$Pn2_1m$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p11m$	L04
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p12_11$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$	$P2_1mn$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1mn$	L32
					$[s\mathbf{d}, -s\mathbf{d}]$	$p1m1$	L11

No. 32 $Pba2$ C_{2v}^8

$$\mathcal{G} = Pba2$$

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)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	$Pba2$	$s\mathbf{d}$	$pba2$	L25
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$	$Pc2a$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p121$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p11a$	L05
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$	$P2cb$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p11b$	L05
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01

No. 33 $Pna2_1$ C_{2v}^9

$$\mathcal{G} = Pna2_1$$

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)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	$Pna2_1$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$p1a1$ ($\mathbf{b}/4$)	L12
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$	$Pc2_1n$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p12_11$	L09
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p11n$	L05
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$	$P2_1nb$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_111$	L09
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p11b$	L05
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01

Auxiliary tables for Laue class $D_{2h} - mmm$

Centring types P and I

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

Arithmetic class 222P

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

Arithmetic class $mm2P$

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	$Pmm2$	$Pmc2_1$	$Pcc2$	$Pma2$	$Pca2_1$	$Pnc2$	$Pmn2_1$	$Pba2$	$Pna2_1$	$Pnn2$
$(mn0)$	$P112$	$P112_1$	$P112$	$P112$	$P112_1$	$P112$	$P112_1$	$P112$	$P112_1$	$P112$
$(\overline{m}n0)$							$(\mathbf{a}/4)$			
$(0mn)$	$P11m$	$P11m$	$P11b$	$P11m$	$P11b$	$P11n$	$P11m$	$P11a$	$P11n$	$P11n$
$(0\overline{m}n)$				$(\mathbf{a}/4)$	$(\mathbf{a}/4)$			$(\mathbf{a}/4)$	$(\mathbf{a}/4)$	$(\mathbf{a}/4)$
$(n0m)$		$P11a$	$P11a$	$P11b$	$P11b$	$P11a$	$P11n$	$P11b$	$P11b$	$P11n$
$(n0\overline{m})$						$(\mathbf{b}/4)$		$(\mathbf{b}/4)$	$(\mathbf{b}/4)$	$(\mathbf{b}/4)$

Arithmetic classes 222I, $mm2I$ 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	$I222$	$I2_12_12_1$	$Imm2$	$Iba2$	$Ima2$	$Immm$	$Ibam$	$Ibca$	$Imma$
$(mn0)$	$I112$	$I112$	$I112$	$I112$	$I112$	$I112/m$	$I112/m$	$I112/b$	$I112/b$
$(\overline{m}n0)$		$(\mathbf{b}/4)$							
$(0mn)$		$I112$	$I11m$	$I11b$	$I11m$		$I112/b$		$I112/m$
$(0\overline{m}n)$		$(\mathbf{c}/4)$			$(\mathbf{a}/4)$				
$(n0m)$		$I112$		$I11a$	$I11b$		$I112/a$		$I112/m$
$(n0\overline{m})$		$(\mathbf{a}/4)$							$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4)$