

Orthorhombic

6. SCANNING TABLES

 Laue class  $D_{2h} - mmm$ 

 No. 23  $I222$ 
 $\mathcal{G} = I222$ 
 $D_2^8$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group			Scanning group $\mathcal{H}$	Linear orbit $sd$	Sectional layer group $\mathcal{L}(sd)$	
(001)	<b>a</b>	<b>b</b>	<b>c</b>	$I222$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p222$	L19
(100)	<b>b</b>	<b>c</b>	<b>a</b>		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_12_12$	L21
(010)	<b>c</b>	<b>a</b>	<b>b</b>		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p112$	L03

 No. 24  $I2_12_12_1$ 
 $\mathcal{G} = I2_12_12_1$ 
 $D_2^9$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group			Scanning group $\mathcal{H}$	Linear orbit $sd$	Sectional layer group $\mathcal{L}(sd)$	
(001)	<b>a</b>	<b>b</b>	<b>c</b>	$I2_12_12_1$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_122$ ( $\mathbf{b}'/4$ )	L20
(100)	<b>b</b>	<b>c</b>	<b>a</b>		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p22_12$ ( $\mathbf{b}'/4$ )	L20
(010)	<b>c</b>	<b>a</b>	<b>b</b>		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p112$ ( $\mathbf{b}'/4$ )	L03

 Geometric class  $C_{2v} - mm2$ 

 No. 25  $Pmm2$ 
 $\mathcal{G} = Pmm2$ 
 $C_{2v}^1$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group			Scanning group $\mathcal{H}$	Linear orbit $sd$	Sectional layer group $\mathcal{L}(sd)$	
(001)	<b>a</b>	<b>b</b>	<b>c</b>	$Pmm2$	$sd$	$pmm2$	L23
(100)	<b>b</b>	<b>c</b>	<b>a</b>	$Pm2m$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$pm2m$	L27
					$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
(010)	<b>c</b>	<b>a</b>	<b>b</b>	$P2mm$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2mm$	L27
					$[s\mathbf{d}, -s\mathbf{d}]$	$p1m1$	L11

 No. 26  $Pmc2_1$ 
 $\mathcal{G} = Pmc2_1$ 
 $C_{2v}^2$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group			Scanning group $\mathcal{H}$	Linear orbit $sd$	Sectional layer group $\mathcal{L}(sd)$	
(001)	<b>a</b>	<b>b</b>	<b>c</b>	$Pmc2_1$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
(100)	<b>b</b>	<b>c</b>	<b>a</b>	$Pb2_1m$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$pb2_1m$	L29
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
(010)	<b>c</b>	<b>a</b>	<b>b</b>	$P2_1ma$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1ma$	L28
					$[s\mathbf{d}, -s\mathbf{d}]$	$p1m1$	L11

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		
	$\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	$\hat{\mathbf{a}}$	$\hat{\mathbf{b}}$	$\hat{\mathbf{c}}$
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a} + m\mathbf{b}$	$-p\mathbf{a} + q\mathbf{b}$			
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$			
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$			

Arithmetic class  $222P$ 

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

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

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