

Laue class  $D_{2h} - mmm$ 

6. SCANNING TABLES

Orthorhombic

 No. 40  $Ama2$ 
 $\mathcal{G} = Ama2$ 
 $C_{2v}^{16}$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group <b>a'</b> <b>b'</b> <b>d</b>	Scanning group $\mathcal{H}$	Linear orbit <b>sd</b>	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	<b>a</b> <b>b</b> <b>c</b>	<i>Ama2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>pma2</i>	L24
(100)	<b>b</b> <b>c</b> <b>a</b>	<i>Cc2m</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>c121</i> $\widehat{p}11m$ <i>p1</i>	L10 L04 L01
(010)	<b>c</b> <b>a</b> <b>b</b>	<i>B2mb</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>p2mb</i> <i>p2<sub>1</sub>mm</i> ( <b>b'</b> /4) <i>p1m1</i> ( <b>b'</b> /4)	L31 L32 L11

 No. 41\*  $Aea2$ 
 $\mathcal{G} = Aea2$ 
 $C_{2v}^{17}$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group <b>a'</b> <b>b'</b> <b>d</b>	Scanning group $\mathcal{H}$	Linear orbit <b>sd</b>	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	<b>a</b> <b>b</b> <b>c</b>	<i>Aea2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>pba2</i>	L25
(100)	<b>b</b> <b>c</b> <b>a</b>	<i>Cc2a</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>c211</i> $\widehat{p}11n$ $\widehat{p}1$	L10 L05 L01
(010)	<b>c</b> <b>a</b> <b>b</b>	<i>B2cb</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>p2an</i> <i>p2<sub>1</sub>ab</i> <i>p1a1</i> ( <b>b'</b> /4)	L34 L33 L12

 \*New symbol. Old symbol: *Aba2*.

 No. 42  $Fmm2$ 
 $\mathcal{G} = Fmm2$ 
 $C_{2v}^{18}$ 

Orientation orbit ( <i>hkl</i> )	Conventional basis of the scanning group <b>a'</b> <b>b'</b> <b>d</b>	Scanning group $\mathcal{H}$	Linear orbit <b>sd</b>	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	<b>a</b> <b>b</b> <b>c</b>	<i>Fmm2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>cmm2</i>	L26
(100)	<b>b</b> <b>c</b> <b>a</b>	<i>Fm2m</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>cm2m</i> <i>cm2e</i> ( <b>a'</b> /4) <i>cm11</i>	L35 L36 L13
(010)	<b>c</b> <b>a</b> <b>b</b>	<i>F2mm</i>	$[\mathbf{0d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm\mathbf{sd}, (\pm s + \frac{1}{2})\mathbf{d}]$	<i>c2mm</i> <i>c2me</i> ( <b>b'</b> /4) <i>c1m1</i>	L35 L36 L13

Arithmetic classes  $222C$  and  $mm2C$ 

Serial No.	20	21	35	36	37
Group type	$D_2^5$	$D_2^6$	$C_{2v}^{11}$	$C_{2v}^{12}$	$C_{2v}^{13}$
Group	$C222_1$	$C222$	$Cmm2$	$Cmc2_1$	$Ccc2$
$(hk0)$ $(\bar{h}k0)$	$P112_1$	$P112$	$P112$	$P112_1$	$P112$
$(0mn)$ $(0\bar{m}n)$	$B112$	$B112$	$B11m$	$B11m$	$B11b$
$(n0m)$ $(n0\bar{m})$	$A112$ $(c/4)$	$A112$	$A11m$	$A11a$	$A11a$

Arithmetic class  $mmmC$ 

Serial No.	63	64	65	66	67	68	
Group type	$D_{2h}^{17}$	$D_{2h}^{18}$	$D_{2h}^{19}$	$D_{2h}^{20}$	$D_{2h}^{21}$	$D_{2h}^{22}$	
Group	$Cmcm$	$Cmce$	$Cmmm$	$Cccm$	$Cmme$	$Ccce$	
$(hk0)$ $(\bar{h}k0)$	$P112_1/m$	$P112_1/n$	$P112/m$	$P112/m$	$P112/n$	Origin 1 $[(b+c)/4]$	Origin 2 $P112/n$
$(0mn)$ $(0\bar{m}n)$	$B112/m$	$B112/m$	$B112/m$	$B112/b$	$B112/m$	$B112/n$ $[(a+c)/4]$	$B112/n$
$(n0m)$ $(n0\bar{m})$	$A112/a$	$A112/n$	$A112/m$	$A112/a$	$A112/m$ $[(a+b)/4]$	$A112/a$ $[(b+c)/4]$	$A112/a$

## Centring type A

Orientation orbit $(hkl)$	Conventional basis of the scanning group			Auxiliary basis of the scanning group		
	$\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	$\hat{\mathbf{a}}$	$\hat{\mathbf{b}}$	$\hat{\mathbf{c}}$
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a} + m\mathbf{b}$	$-p\mathbf{a} + q\mathbf{b}$			
$(0kl)$	$\mathbf{a}$	$n\hat{\mathbf{a}} - m\hat{\mathbf{b}}$	$p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$	$(b-c)/2$	$(b+c)/2$	$\mathbf{a}$
$(\bar{k}l0)$	$\mathbf{a}$	$n\hat{\mathbf{a}} + m\hat{\mathbf{b}}$	$-p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$			
$k$ even, $l$ odd or $k$ odd, $l$ even $\Rightarrow n = k + l, m = k - l$						
$k, l$ odd $\Rightarrow n = (k + l)/2, m = (k - l)/2$						
$(n0m)$	$\mathbf{b}$	$nc - ma$	$pc + qa$	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$
$(n0\bar{m})$	$\mathbf{b}$	$nc + ma$	$-pc + qa$			

Arithmetic class  $mm2A$ 

Serial No.	38	39	40	41
Group type	$C_{2v}^{14}$	$C_{2v}^{15}$	$C_{2v}^{16}$	$C_{2v}^{17}$
Group	$Amm2$	$Aem2$	$Ama2$	$Aea2$
$(mn0)$ $(\bar{m}n0)$	$A112$	$A112$	$A112$	$A112$
$(0kl)$ $(0\bar{k}l)$	$P11m$	$P11n$	$P11m$ $(a/4)$	$P11n$ $(a/4)$
$(n0m)$ $(n0\bar{m})$	$B11m$	$B11m$ $(b/4)$	$B11b$	$B11b$ $(b/4)$