

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 a' b' d	Scanning group \mathcal{H}	Linear orbit sd	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	a b c	<i>Ama2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>pma2</i>	L24
(100)	b c a	<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)	c a 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>p2₁mm</i> (b' /4) <i>p1m1</i> (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 a' b' d	Scanning group \mathcal{H}	Linear orbit sd	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	a b c	<i>Aea2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>pba2</i>	L25
(100)	b c a	<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)	c a 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>p2₁ab</i> <i>p1a1</i> (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 a' b' d	Scanning group \mathcal{H}	Linear orbit sd	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(001)	a b c	<i>Fmm2</i>	$[\mathbf{sd}, (s + \frac{1}{2})\mathbf{d}]$	<i>cmm2</i>	L26
(100)	b c a	<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> (a' /4) <i>cm11</i>	L35 L36 L13
(010)	c a 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' /4) <i>c1m1</i>	L35 L36 L13

Centring type F

Orientation orbit (hkl)	Conventional basis of the scanning group			Auxiliary basis of the scanning group		
	\mathbf{a}'	\mathbf{b}'	\mathbf{d}	$\hat{\mathbf{a}}$	$\hat{\mathbf{b}}$	$\hat{\mathbf{c}}$
($hk0$)	\mathbf{c}	$n\hat{\mathbf{a}} - m\hat{\mathbf{b}}$	$p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$	$(\mathbf{a} - \mathbf{b})/2$	$(\mathbf{a} + \mathbf{b})/2$	\mathbf{c}
($\bar{h}k0$)	\mathbf{c}	$n\hat{\mathbf{a}} + m\hat{\mathbf{b}}$	$-p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$			
($0hk$)	\mathbf{a}	$n\hat{\mathbf{a}} - m\hat{\mathbf{b}}$	$p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$	$(\mathbf{b} - \mathbf{c})/2$	$(\mathbf{b} + \mathbf{c})/2$	\mathbf{a}
($0\bar{h}k$)	\mathbf{a}	$n\hat{\mathbf{a}} + m\hat{\mathbf{b}}$	$-p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$			
($k0h$)	\mathbf{b}	$n\hat{\mathbf{a}} - m\hat{\mathbf{b}}$	$p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$	$(\mathbf{c} - \mathbf{a})/2$	$(\mathbf{c} + \mathbf{a})/2$	\mathbf{b}
($k0\bar{h}$)	\mathbf{b}	$n\hat{\mathbf{a}} + m\hat{\mathbf{b}}$	$-p\hat{\mathbf{a}} + q\hat{\mathbf{b}}$			

h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
 h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Arithmetic classes $222F, mm2F$ and $mmmF$

Serial No. Group type Group	22	42	43	69	70	
	D_2^7 $F222$	C_{2v}^{18} $Fmm2$	C_{2v}^{19} $Fdd2$	D_{2h}^{23} $Fmmm$	D_{2h}^{24} $Fddd$	
					Origin 1	Origin 2
($hk0$)	$I112$	$I112$	$I112$	$I112/m$	$I112/b$	$I112/b$
($\bar{h}k0$)					$[(\mathbf{a} + \mathbf{b} + \mathbf{c})/8]$	
($0hk$)		$I11m$	$I11b$			
($0\bar{h}k$)					$(\mathbf{a}/8)$	
($k0h$)						
($k0\bar{h}$)						