Cubic   6. SCANNING TABLES   Laue class $T_h - m\bar{3}$

No. 204 $Im\bar{3}$ T_h^5

$$\mathcal{G} = I\frac{2}{m}\bar{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group a'	b'	d	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	*Immm*	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	*pmmm*	L37
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	*pmmn* $[(\mathbf{a}' + \mathbf{b}')/4]$	L46
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	*pmm2*	L23
(111)	$\mathbf{a} - \mathbf{c}$	$\mathbf{b} - \mathbf{a}$	$\tau/2$	$R\bar{3}$	$[0\mathbf{d}, \quad [\frac{1}{2}\mathbf{d},$	$p\bar{3}$	L66
$(\bar{1}11)$	$-\mathbf{a} - \mathbf{c}$	$\mathbf{a} - \mathbf{b}$	$\tau_3/2$		$\frac{1}{3}\mathbf{d}, \parallel \frac{5}{6}\mathbf{d},$	$p\bar{3}\ [(2\mathbf{a}' + \mathbf{b}')/3]$	L66
$(1\bar{1}1)$	$\mathbf{a} + \mathbf{c}$	$-\mathbf{a} - \mathbf{b}$	$\tau_1/2$		$\frac{2}{3}\mathbf{d} \quad \frac{1}{6}\mathbf{d}]$	$p\bar{3}\ [(\mathbf{a}' + 2\mathbf{b}')/3]$	L66
$(\bar{1}1\bar{1})$	$\mathbf{c} - \mathbf{a}$	$\mathbf{a} + \mathbf{b}$	$\tau_2/2$		$[\pm s\mathbf{d}, (\pm s + \frac{1}{3})\mathbf{d}, (\pm s + \frac{2}{3})\mathbf{d}]$	$p3$	L65

No. 205 $Pa\bar{3}$ T_h^6

$$\mathcal{G} = P\frac{2}{a}\bar{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group a'	b'	d	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	*Pbca*	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$pb2_1a$	L33
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
(111)	$\mathbf{a} - \mathbf{b}$	$\mathbf{b} - \mathbf{c}$	τ	With respect to origin at P			
$(\bar{1}11)$	$\mathbf{b} - \mathbf{a}$	$-\mathbf{b} - \mathbf{c}$	τ_3	With respect to origin at $P + (\mathbf{a} + \mathbf{c})/2$			
$(1\bar{1}1)$	$\mathbf{a} + \mathbf{b}$	$\mathbf{c} - \mathbf{b}$	τ_1	With respect to origin at $P + (\mathbf{b} + \mathbf{a})/2$			
$(\bar{1}1\bar{1})$	$-\mathbf{a} - \mathbf{b}$	$\mathbf{b} + \mathbf{c}$	τ_2	With respect to origin at $P + (\mathbf{c} + \mathbf{b})/2$			
				$R\bar{3}$	$[0\mathbf{d}, \quad [\frac{1}{2}\mathbf{d},$	$p\bar{3}$	L66
					$\frac{1}{3}\mathbf{d}, \parallel \frac{5}{6}\mathbf{d},$	$p\bar{3}\ [(2\mathbf{a}' + \mathbf{b}')/3]$	L66
					$\frac{2}{3}\mathbf{d} \quad \frac{1}{6}\mathbf{d}]$	$p\bar{3}\ [(\mathbf{a}' + 2\mathbf{b}')/3]$	L66
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{3})\mathbf{d}, (\pm s + \frac{2}{3})\mathbf{d}]$	$p3$	L65

No. 206 $Ia\bar{3}$ T_h^7

$$\mathcal{G} = I\frac{2}{a}\bar{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group a'	b'	d	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(001)	$\mathbf{a}$	$\mathbf{b}$	$\mathbf{c}$	*Ibca*	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	*pbab*	L43
(100)	$\mathbf{b}$	$\mathbf{c}$	$\mathbf{a}$		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	*pbaa* $[(\mathbf{a}' + \mathbf{b}')/4]$	L43
(010)	$\mathbf{c}$	$\mathbf{a}$	$\mathbf{b}$		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	*pba2* $(\mathbf{b}'/4)$	L25
(111)	$\mathbf{a} - \mathbf{c}$	$\mathbf{b} - \mathbf{a}$	$\tau/2$	With respect to origin at P			
$(\bar{1}11)$	$-\mathbf{a} - \mathbf{c}$	$\mathbf{a} - \mathbf{b}$	$\tau_3/2$	With respect to origin at $P + \mathbf{b}/2$			
$(1\bar{1}1)$	$\mathbf{a} + \mathbf{c}$	$-\mathbf{a} - \mathbf{b}$	$\tau_1/2$	With respect to origin at $P + \mathbf{c}/2$			
$(\bar{1}1\bar{1})$	$\mathbf{c} - \mathbf{a}$	$\mathbf{a} + \mathbf{b}$	$\tau_2/2$	With respect to origin at $P + \mathbf{a}/2$			
				$R\bar{3}$	$[0\mathbf{d}, \quad [\frac{1}{2}\mathbf{d},$	$p\bar{3}$	L66
					$\frac{1}{3}\mathbf{d}, \parallel \frac{5}{6}\mathbf{d},$	$p\bar{3}\ [(2\mathbf{a}' + \mathbf{b}')/3]$	L66
					$\frac{2}{3}\mathbf{d} \quad \frac{1}{6}\mathbf{d}]$	$p\bar{3}\ [(\mathbf{a}' + 2\mathbf{b}')/3]$	L66
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{3})\mathbf{d}, (\pm s + \frac{2}{3})\mathbf{d}]$	$p3$	L65

Auxiliary tables for Laue class $T_h - m\overline{3}$

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 classes $23P$ and $23I$

Serial No.	195	198	197	199
Group type	T^1	T^4	T^3	T^5
Group	$P23$	$P2_13$	$I23$	$I2_13$
$(mn0)$	$P112$	$P112_1$	$I112$	$I112$
$(\overline{m}n0)$		$(\mathbf{a}/4)$		$(\mathbf{b}/4)$
$(0mn)$		$P112_1$		$I112$
$(0\overline{m}n)$		$(\mathbf{b}/4)$		$(\mathbf{c}/4)$
$(n0m)$		$P112_1$		$I112$
$(n0\overline{m})$		$(\mathbf{c}/4)$		$(\mathbf{a}/4)$

Arithmetic classes $m\overline{3}P$ and $m\overline{3}I$

Serial No.	200	201		205	204	206
Group type	T_h^1	T_h^2		T_h^6	T_h^5	T_h^7
Group	$Pm\overline{3}$	$Pn\overline{3}$		$Pa\overline{3}$	$Im\overline{3}$	$Ia\overline{3}$
		Origin 1	Origin 2			
$(mn0)$	$P112/m$	$P112/n$	$P112/n$	$P112_1/a$	$I112/m$	$I112/b$
$(\overline{m}n0)$		$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$				
$(0mn)$						
$(0\overline{m}n)$						
$(n0m)$						
$(n0\overline{m})$						