International Tables for Crystallography (2006). Vol. E, Section 1.2.5, p. 8.

Table 1.2.4.1. *Sets of symmetry directions and their positions in the Hermann–Mauguin symbol*

In the standard setting, periodic directions are [100] and [010] for the layer groups, [001] for the rod groups, and [10] for the frieze groups.

(*a*) Layer groups and rod groups.

	Symmetry direction (position in Hermann–Mauguin symbol)		
	Primary	Secondary	Tertiary
Triclinic	None		
Monoclinic Orthorhombic	[100]	[010]	[001]
Tetragonal	[001]	[100] [010]	$[1\bar{1}0]$ [110]
Trigonal Hexagonal	[001]	[100] [010] $[\bar{1}\bar{1}0]$	$[1\bar{1}0]$ [120] $[\bar{2}\bar{1}0]$

(*b*) Frieze groups.

	Symmetry direction (position in Hermann–Mauguin symbol)		
	Primary	Secondary	Tertiary
Oblique	Rotation point in plane		
Rectangular		[10]	[01]

symmetry directions or only centres of symmetry have only one entry after the centring letter. These are the layer-group types $p1$ (L1) and $p\bar{1}$ (L2), the rod-group types 𝓅1 (R1) and 𝓅$\bar{1}$ (R2), and the frieze group 𝓅1 (F1).

1.2.5. Patterson symmetry

The entry *Patterson symmetry* in the headline gives the subperiodic group of the *Patterson function*, where Friedel's law is assumed, *i.e.* with neglect of anomalous dispersion. [For a discussion of the effect of dispersion, see Fischer & Knof (1987) and Wilson (1992).] The symbol for the Patterson subperiodic group can be deduced from the symbol of the subperiodic group in two steps:

(i) Glide planes and screw axes are replaced by the corresponding mirror planes and rotation axes.

(ii) If the resulting symmorphic subperiodic group is not centrosymmetric, inversion is added.

There are 13 different Patterson symmetries for the layer groups, ten for the rod groups and two for the frieze groups. These are listed in Table 1.2.5.1. The 'point-group part' of the symbol of the Patterson symmetry represents the *Laue class* to which the subperiodic group belongs (*cf.* Tables 1.2.1.1, 1.2.1.2 and 1.2.1.3).

Table 1.2.5.1. *Patterson symmetries for subperiodic groups*

(*a*) Layer groups.

Laue class	Lattice type	Patterson symmetry (with subperiodic group number)
$\bar{1}$	*p*	$p\bar{1}$ (L2)
112/*m*	*p*	*p*112/*m* (L6)
2/*m*11	*p*, *c*	*p*2/*m*11 (L14), *c*2/*m*11 (L18)
mmm	*p*, *c*	*pmmm* (L37), *cmmm* (L47)
4/*m*	*p*	*p*4/*m* (L51)
4/*mmm*	*p*	*p*4/*mmm* (L61)
$\bar{3}$	*p*	$p\bar{3}$ (L66)
$\bar{3}1m$	*p*	$p\bar{3}1m$ (L71)
$\bar{3}m1$	*p*	$p\bar{3}m1$ (L72)
6/*m*	*p*	*p*6/*m* (L75)
6/*mmm*	*p*	*p*6/*mmm* (L80)

(*b*) Rod groups.

Laue class	Lattice type	Patterson symmetry (with subperiodic group number)
$\bar{1}$	𝓅	𝓅$\bar{1}$ (R2)
2/*m*11	𝓅	𝓅2/*m*11 (R6)
112/*m*	𝓅	𝓅112/*m* (R11)
mmm	𝓅	𝓅*mmm* (R20)
4/*m*	𝓅	𝓅4/*m* (R28)
4/*mmm*	𝓅	𝓅4/*mmm* (R39)
$\bar{3}$	𝓅	𝓅$\bar{3}$ (R48)
$\bar{3}m$	𝓅	𝓅$\bar{3}1m$ (R51)
6/*m*	𝓅	𝓅6/*m* (R60)
6/*mmm*	𝓅	𝓅6/*mmm* (R73)

(*c*) Frieze groups.

Laue class	Lattice type	Patterson symmetry (with subperiodic group number)
2	𝓅	𝓅211 (F2)
2*mm*	𝓅	𝓅2*mm* (F6)

1.2.6. Subperiodic group diagrams

There are two types of diagrams, referred to as *symmetry diagrams* and *general-position diagrams*. Symmetry diagrams show (i) the relative locations and orientations of the symmetry elements and (ii) the locations and orientations of the symmetry elements relative to a given coordinate system. General-position diagrams show the arrangement of a set of symmetrically equivalent points of general positions relative to the symmetry elements in that given coordinate system.

For the three-dimensional subperiodic groups, *i.e.* layer and rod groups, all diagrams are orthogonal projections. The projection direction is along a basis vector of the conventional crystallographic coordinate system (see Tables 1.2.1.1 and 1.2.1.2). If the other basis vectors are not parallel to the plane of the figure, they are indicated by subscript '*p*', *e.g.* $\mathbf{a}_p$, $\mathbf{b}_p$ and $\mathbf{c}_p$. For frieze groups (two-dimensional subperiodic groups), the diagrams are in the plane defined by the frieze group's conventional crystallographic coordinate system (see Table 1.2.1.3).

The graphical symbols for symmetry elements used in the symmetry diagrams are given in Chapter 1.1 and follow those used in *IT* A (1983). For rod groups, the 'heights' *h* along the projection direction above the plane of the diagram are indicated for symmetry planes and symmetry axes *parallel* to the plane of the diagram, for rotoinversions and for centres of symmetry. The heights are given as fractions of the translation along the projection direction and, if different from zero, are printed next to the graphical symbol.

Schematic representations of the diagrams, displaying their conventional coordinate system, *i.e.* the origin and basis vectors, with the basis vectors labelled in the standard setting, are given below. The general-position diagrams are indicated by the letter G.

(i) *Layer groups*

For the layer groups, all diagrams are orthogonal projections along the basis vector **c**. For the triclinic/oblique layer groups, two diagrams are given: the general-position diagram on the right and the symmetry diagram on the left. These diagrams are illustrated in Fig. 1.2.6.1.

For all monoclinic/oblique layer groups, except groups L5 and L7, two diagrams are given, as shown in Fig. 1.2.6.2. For the layer groups L5 and L7, the descriptions of the three cell choices are

references