International Tables for Crystallography (2010). Vol. B, Appendix 1.5.1, p. 192.

210, 243–254. We are indebted to R. Oldenbourg Verlag, Munich, Germany, for allowing us to reprint parts of this article.

APPENDIX A1.5.1
Reciprocal-space groups $(\mathcal{G})^*$

This table is based on Table 1 of Wintgen (1941).

In order to obtain the Hermann–Mauguin symbol of $(\mathcal{G})^*$ from that of $\mathcal{G}$, one replaces any screw rotations by rotations and any glide reflections by reflections. The result is the symmorphic space group $\mathcal{G}_0(\mathcal{G})$. For most space groups $\mathcal{G}$, the reciprocal-space group $(\mathcal{G})^*$ is isomorphic to $\mathcal{G}_0(\mathcal{G})$, *i.e.* $\mathcal{G}_0(\mathcal{G})$ and $(\mathcal{G})^*$ belong to the same arithmetic crystal class. In the following cases $(\mathcal{G})^*$ is isomorphic to a symmorphic space group $\mathcal{G}_0$ which is different from $\mathcal{G}_0(\mathcal{G})$. Thus the arithmetic crystal classes of $\mathcal{G}$ and $(\mathcal{G})^*$ are different, *i.e.* $(\mathcal{G})^*$ can not be obtained in this simple way:

(1) If the lattice symbol of $\mathcal{G}$ is F or I, it has to be replaced by I or F, *e.g.* $(\mathcal{G})^*$ is isomorphic to $Imm2$ for the arithmetic crystal class $\mathcal{G} = mm2F$. The tetragonal space groups form an exception to this rule; for these the symbol I persists.

(2) The other exceptions are listed in the following table (for the symbols of the arithmetic crystal classes see *IT* A, Section 8.2.3):

Arithmetic crystal class of $\mathcal{G}$	Reciprocal-space group $(\mathcal{G})^*$
$\bar{4}m2I$	$I\bar{4}2m$
$\bar{4}2mI$	$I\bar{4}m2$
$321P$	$P312$
$312P$	$P321$
$3m1P$	$P31m$
$31mP$	$P3m1$
$\bar{3}1mP$	$P\bar{3}m1$
$\bar{3}m1P$	$P\bar{3}1m$
$\bar{6}m2P$	$P\bar{6}2m$
$\bar{6}2mP$	$P\bar{6}m2$

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