

$Fm\bar{3}m$

O_h^5

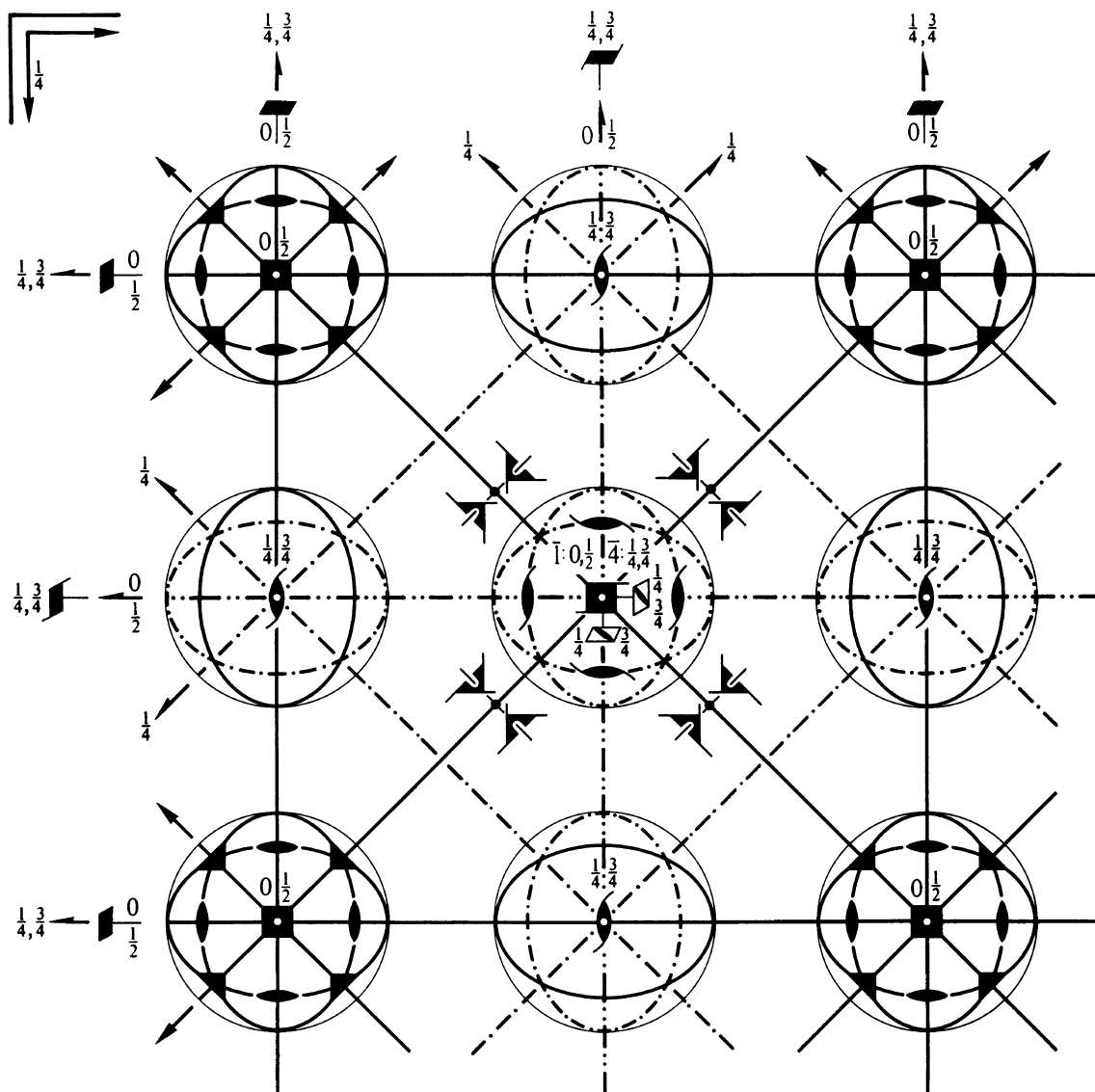
$m\bar{3}m$

Cubic

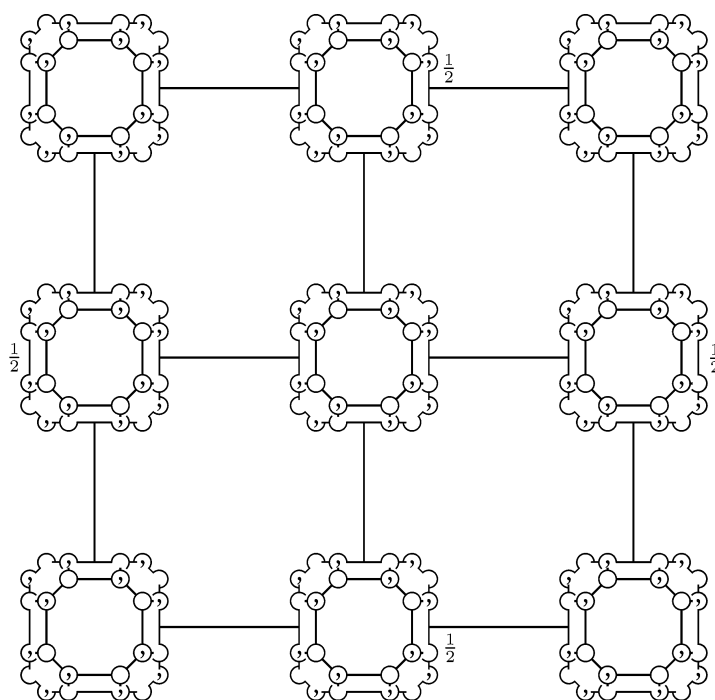
No. 225

$F 4/m \bar{3} 2/m$

Patterson symmetry $Fm\bar{3}m$



Upper left quadrant only



Origin at centre ($m\bar{3}m$)

Asymmetric unit $0 \leq x \leq \frac{1}{2}$; $0 \leq y \leq \frac{1}{4}$; $0 \leq z \leq \frac{1}{4}$; $y \leq \min(x, \frac{1}{2} - x)$; $z \leq y$
Vertices $0, 0, 0$ $\frac{1}{2}, 0, 0$ $\frac{1}{4}, \frac{1}{4}, 0$ $\frac{1}{4}, \frac{1}{4}, \frac{1}{4}$

Symmetry operationsFor $(0, 0, 0)^+$ set

- | | | | |
|-------------------------------------|---|---|---|
| (1) 1 | (2) 2 $0, 0, z$ | (3) 2 $0, y, 0$ | (4) 2 $x, 0, 0$ |
| (5) 3^+ x, x, x | (6) 3^+ \bar{x}, x, \bar{x} | (7) 3^+ x, \bar{x}, \bar{x} | (8) 3^+ \bar{x}, \bar{x}, x |
| (9) 3^- x, x, x | (10) 3^- x, \bar{x}, \bar{x} | (11) 3^- \bar{x}, \bar{x}, x | (12) 3^- \bar{x}, x, \bar{x} |
| (13) 2 $x, x, 0$ | (14) 2 $x, \bar{x}, 0$ | (15) 4 $^-$ $0, 0, z$ | (16) 4 $^+$ $0, 0, z$ |
| (17) 4 $^-$ $x, 0, 0$ | (18) 2 $0, y, y$ | (19) 2 $0, y, \bar{y}$ | (20) 4 $^+$ $x, 0, 0$ |
| (21) 4 $^+$ $0, y, 0$ | (22) 2 $x, 0, x$ | (23) 4 $^-$ $0, y, 0$ | (24) 2 $\bar{x}, 0, x$ |
| (25) $\bar{1}$ $0, 0, 0$ | (26) m $x, y, 0$ | (27) m $x, 0, z$ | (28) m $0, y, z$ |
| (29) $\bar{3}^+$ $x, x, x; 0, 0, 0$ | (30) $\bar{3}^+$ $\bar{x}, x, \bar{x}; 0, 0, 0$ | (31) $\bar{3}^+$ $x, \bar{x}, \bar{x}; 0, 0, 0$ | (32) $\bar{3}^+$ $\bar{x}, \bar{x}, x; 0, 0, 0$ |
| (33) $\bar{3}^-$ $x, x, x; 0, 0, 0$ | (34) $\bar{3}^-$ $x, \bar{x}, \bar{x}; 0, 0, 0$ | (35) $\bar{3}^-$ $\bar{x}, \bar{x}, x; 0, 0, 0$ | (36) $\bar{3}^-$ $\bar{x}, x, \bar{x}; 0, 0, 0$ |
| (37) m x, \bar{x}, z | (38) m x, x, z | (39) $\bar{4}^-$ $0, 0, z; 0, 0, 0$ | (40) $\bar{4}^+$ $0, 0, z; 0, 0, 0$ |
| (41) $\bar{4}^-$ $x, 0, 0; 0, 0, 0$ | (42) m x, y, \bar{y} | (43) m x, y, y | (44) $\bar{4}^+$ $x, 0, 0; 0, 0, 0$ |
| (45) $\bar{4}^+$ $0, y, 0; 0, 0, 0$ | (46) m \bar{x}, y, x | (47) $\bar{4}^-$ $0, y, 0; 0, 0, 0$ | (48) m x, y, x |

For $(0, \frac{1}{2}, \frac{1}{2})^+$ set

- | | | | |
|--|---|--|---|
| (1) $t(0, \frac{1}{2}, \frac{1}{2})$ | (2) $2(0, 0, \frac{1}{2})$ $0, \frac{1}{4}, z$ | (3) $2(0, \frac{1}{2}, 0)$ $0, y, \frac{1}{4}$ | (4) 2 $x, \frac{1}{4}, \frac{1}{4}$ |
| (5) $3^+(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x - \frac{1}{3}, x - \frac{1}{6}, x$ | (6) 3^+ $\bar{x}, x + \frac{1}{2}, \bar{x}$ | (7) $3^+(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x + \frac{1}{3}, \bar{x} - \frac{1}{6}, \bar{x}$ | (8) 3^+ $\bar{x}, \bar{x} + \frac{1}{2}, x$ |
| (9) $3^-(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x - \frac{1}{6}, x + \frac{1}{6}, x$ | (10) $3^-(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x + \frac{1}{6}, \bar{x} + \frac{1}{6}, \bar{x}$ | (11) 3^- $\bar{x} + \frac{1}{2}, \bar{x} + \frac{1}{2}, x$ | (12) 3^- $\bar{x} - \frac{1}{2}, x + \frac{1}{2}, \bar{x}$ |
| (13) $2(\frac{1}{4}, \frac{1}{4}, 0)$ $x, x + \frac{1}{4}, \frac{1}{4}$ | (14) $2(-\frac{1}{4}, \frac{1}{4}, 0)$ $x, \bar{x} + \frac{1}{4}, \frac{1}{4}$ | (15) $4^-(0, 0, \frac{1}{2})$ $\frac{1}{4}, \frac{1}{4}, z$ | (16) $4^+(0, 0, \frac{1}{2})$ $-\frac{1}{4}, \frac{1}{4}, z$ |
| (17) 4 $^-$ $x, \frac{1}{2}, 0$ | (18) $2(0, \frac{1}{2}, \frac{1}{2})$ $0, y, y$ | (19) 2 $0, y + \frac{1}{2}, \bar{y}$ | (20) 4 $^+$ $x, 0, \frac{1}{2}$ |
| (21) 4 $^+$ $(0, \frac{1}{2}, 0)$ $\frac{1}{4}, y, \frac{1}{4}$ | (22) $2(\frac{1}{4}, 0, \frac{1}{4})$ $x - \frac{1}{4}, \frac{1}{4}, x$ | (23) 4 $^-$ $(0, \frac{1}{2}, 0)$ $-\frac{1}{4}, y, \frac{1}{4}$ | (24) $2(-\frac{1}{4}, 0, \frac{1}{4})$ $\bar{x} + \frac{1}{4}, \frac{1}{4}, x$ |
| (25) $\bar{1}$ $0, \frac{1}{4}, \frac{1}{4}$ | (26) b $x, y, \frac{1}{4}$ | (27) c $x, \frac{1}{4}, z$ | (28) $n(0, \frac{1}{2}, \frac{1}{2})$ $0, y, z$ |
| (29) $\bar{3}^+$ $x, x + \frac{1}{2}, x; 0, \frac{1}{2}, 0$ | (30) $\bar{3}^+$ $\bar{x} - 1, x + \frac{1}{2}, \bar{x}; -\frac{1}{2}, 0, \frac{1}{2}$ | (31) $\bar{3}^+$ $x, \bar{x} + \frac{1}{2}, \bar{x}; 0, \frac{1}{2}, 0$ | (32) $\bar{3}^+$ $\bar{x} + 1, \bar{x} + \frac{1}{2}, x; \frac{1}{2}, 0, \frac{1}{2}$ |
| (33) $\bar{3}^-$ $x - \frac{1}{2}, x - \frac{1}{2}, x; 0, 0, \frac{1}{2}$ | (34) $\bar{3}^-$ $x + \frac{1}{2}, \bar{x} - \frac{1}{2}, \bar{x}; 0, 0, \frac{1}{2}$ | (35) $\bar{3}^-$ $\bar{x} - \frac{1}{2}, \bar{x} + \frac{1}{2}, x; -\frac{1}{2}, \frac{1}{2}, 0$ | (36) $\bar{3}^-$ $\bar{x} + \frac{1}{2}, x + \frac{1}{2}, \bar{x}; \frac{1}{2}, \frac{1}{2}, 0$ |
| (37) $g(-\frac{1}{4}, \frac{1}{4}, \frac{1}{2})$ $x + \frac{1}{4}, \bar{x}, z$ | (38) $g(\frac{1}{4}, \frac{1}{4}, \frac{1}{2})$ $x - \frac{1}{4}, x, z$ | (39) $\bar{4}^-$ $-\frac{1}{4}, \frac{1}{4}, z; -\frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (40) $\bar{4}^+$ $\frac{1}{4}, \frac{1}{4}, z; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ |
| (41) 4 $^-$ $x, 0, \frac{1}{2}; 0, 0, \frac{1}{2}$ | (42) m $x, y + \frac{1}{2}, \bar{y}$ | (43) $g(0, \frac{1}{2}, \frac{1}{2})$ x, y, y | (44) $\bar{4}^+$ $x, \frac{1}{2}, 0; 0, \frac{1}{2}, 0$ |
| (45) 4 $^+$ $-\frac{1}{4}, y, \frac{1}{4}; -\frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (46) $g(-\frac{1}{4}, \frac{1}{2}, \frac{1}{4})$ $\bar{x} + \frac{1}{4}, y, x$ | (47) 4 $^-$ $\frac{1}{4}, y, \frac{1}{4}; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (48) $g(\frac{1}{4}, \frac{1}{2}, \frac{1}{4})$ $x - \frac{1}{4}, y, x$ |

For $(\frac{1}{2}, 0, \frac{1}{2})^+$ set

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|--|---|---|---|
| (1) $t(\frac{1}{2}, 0, \frac{1}{2})$ | (2) $2(0, 0, \frac{1}{2})$ $\frac{1}{4}, 0, z$ | (3) 2 $\frac{1}{4}, y, \frac{1}{4}$ | (4) $2(\frac{1}{2}, 0, 0)$ $x, 0, \frac{1}{4}$ |
| (5) $3^+(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x + \frac{1}{6}, x - \frac{1}{6}, x$ | (6) $3^+(\frac{1}{3}, -\frac{1}{3}, \frac{1}{3})$ $\bar{x} + \frac{1}{6}, x + \frac{1}{6}, \bar{x}$ | (7) 3^+ $x + \frac{1}{2}, \bar{x} - \frac{1}{2}, \bar{x}$ | (8) 3^+ $\bar{x} + \frac{1}{2}, \bar{x} + \frac{1}{2}, x$ |
| (9) $3^-(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x - \frac{1}{6}, x - \frac{1}{6}, x$ | (10) 3^- $x + \frac{1}{2}, \bar{x}, \bar{x}$ | (11) 3^- $\bar{x} + \frac{1}{2}, \bar{x}, x$ | (12) 3^- $(\frac{1}{3}, -\frac{1}{3}, \frac{1}{3})$ $\bar{x} - \frac{1}{6}, x + \frac{1}{6}, \bar{x}$ |
| (13) $2(\frac{1}{4}, \frac{1}{4}, 0)$ $x, x - \frac{1}{4}, \frac{1}{4}$ | (14) $2(\frac{1}{4}, -\frac{1}{4}, 0)$ $x, \bar{x} + \frac{1}{4}, \frac{1}{4}$ | (15) 4 $^-$ $(0, 0, \frac{1}{2})$ $\frac{1}{4}, -\frac{1}{4}, z$ | (16) 4 $^+$ $(0, 0, \frac{1}{2})$ $\frac{1}{4}, \frac{1}{4}, z$ |
| (17) 4 $^-$ $(\frac{1}{2}, 0, 0)$ $x, \frac{1}{4}, \frac{1}{4}$ | (18) $2(0, \frac{1}{4}, \frac{1}{4})$ $\frac{1}{4}, y - \frac{1}{4}, y$ | (19) $2(0, -\frac{1}{4}, \frac{1}{4})$ $\frac{1}{4}, y + \frac{1}{4}, \bar{y}$ | (20) 4 $^+$ $(\frac{1}{2}, 0, 0)$ $x, -\frac{1}{4}, \frac{1}{4}$ |
| (21) 4 $^+$ $\frac{1}{2}, y, 0$ | (22) $2(\frac{1}{2}, 0, \frac{1}{2})$ $x, 0, x$ | (23) 4 $^-$ $0, y, \frac{1}{2}$ | (24) 2 $\bar{x} + \frac{1}{2}, 0, x$ |
| (25) $\bar{1}$ $\frac{1}{4}, 0, \frac{1}{4}$ | (26) a $x, y, \frac{1}{4}$ | (27) $n(\frac{1}{2}, 0, \frac{1}{2})$ $x, 0, z$ | (28) c $\frac{1}{4}, y, z$ |
| (29) $\bar{3}^+$ $x - \frac{1}{2}, x - \frac{1}{2}, x; 0, 0, \frac{1}{2}$ | (30) $\bar{3}^+$ $\bar{x} - \frac{1}{2}, x + \frac{1}{2}, \bar{x}; 0, 0, \frac{1}{2}$ | (31) $\bar{3}^+$ $x + \frac{1}{2}, \bar{x} + \frac{1}{2}, \bar{x}; \frac{1}{2}, \frac{1}{2}, 0$ | (32) $\bar{3}^+$ $\bar{x} + \frac{1}{2}, \bar{x} - \frac{1}{2}, x; \frac{1}{2}, -\frac{1}{2}, 0$ |
| (33) $\bar{3}^-$ $x + \frac{1}{2}, x, x; \frac{1}{2}, 0, 0$ | (34) $\bar{3}^-$ $x + \frac{1}{2}, \bar{x} - 1, \bar{x}; 0, -\frac{1}{2}, \frac{1}{2}$ | (35) $\bar{3}^-$ $\bar{x} + \frac{1}{2}, \bar{x} + 1, x; 0, \frac{1}{2}, \frac{1}{2}$ | (36) $\bar{3}^-$ $\bar{x} + \frac{1}{2}, x, \bar{x}; \frac{1}{2}, 0, 0$ |
| (37) $g(\frac{1}{4}, -\frac{1}{4}, \frac{1}{2})$ $x + \frac{1}{4}, \bar{x}, z$ | (38) $g(\frac{1}{4}, \frac{1}{4}, \frac{1}{2})$ $x + \frac{1}{4}, x, z$ | (39) $\bar{4}^-$ $\frac{1}{4}, \frac{1}{4}, z; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (40) $\bar{4}^+$ $\frac{1}{4}, -\frac{1}{4}, z; \frac{1}{4}, -\frac{1}{4}, \frac{1}{4}$ |
| (41) 4 $^-$ $x, -\frac{1}{4}, \frac{1}{4}; \frac{1}{4}, -\frac{1}{4}, \frac{1}{4}$ | (42) $g(\frac{1}{2}, -\frac{1}{4}, \frac{1}{4})$ $x, y + \frac{1}{4}, \bar{y}$ | (43) $g(\frac{1}{2}, \frac{1}{4}, \frac{1}{4})$ $x, y - \frac{1}{4}, y$ | (44) $\bar{4}^+$ $x, \frac{1}{4}, \frac{1}{4}; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ |
| (45) 4 $^+$ $0, y, \frac{1}{2}; 0, 0, \frac{1}{2}$ | (46) m $\bar{x} + \frac{1}{2}, y, x$ | (47) 4 $^-$ $\frac{1}{2}, y, 0; \frac{1}{2}, 0, 0$ | (48) $g(\frac{1}{2}, 0, \frac{1}{2})$ x, y, x |

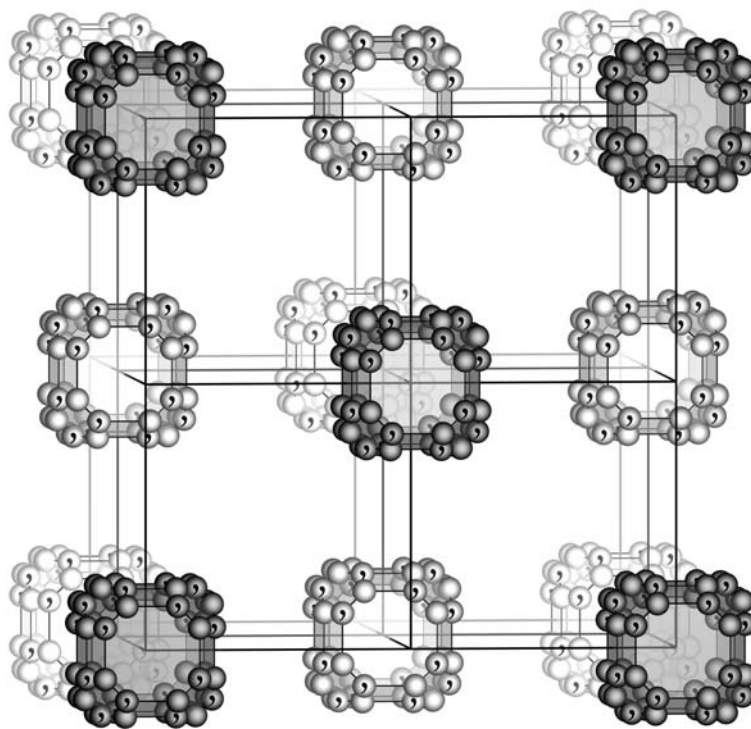
For $(\frac{1}{2}, \frac{1}{2}, 0)^+$ set

- | | | | |
|--|---|--|---|
| (1) $t(\frac{1}{2}, \frac{1}{2}, 0)$ | (2) 2 $\frac{1}{4}, \frac{1}{4}, z$ | (3) $2(0, \frac{1}{2}, 0)$ $\frac{1}{4}, y, 0$ | (4) $2(\frac{1}{2}, 0, 0)$ $x, \frac{1}{4}, 0$ |
| (5) $3^+(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x + \frac{1}{6}, x + \frac{1}{6}, x$ | (6) 3^+ $\bar{x} + \frac{1}{2}, x, \bar{x}$ | (7) 3^+ $x + \frac{1}{2}, \bar{x}, \bar{x}$ | (8) $3^+(\frac{1}{3}, \frac{1}{3}, -\frac{1}{3})$ $\bar{x} + \frac{1}{6}, \bar{x} + \frac{1}{6}, x$ |
| (9) $3^-(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ $x + \frac{1}{6}, x + \frac{1}{6}, x$ | (10) 3^- $x, \bar{x} + \frac{1}{2}, \bar{x}$ | (11) $3^-(\frac{1}{3}, \frac{1}{3}, -\frac{1}{3})$ $\bar{x} + \frac{1}{6}, \bar{x} + \frac{1}{6}, x$ | (12) 3^- $\bar{x}, x + \frac{1}{2}, \bar{x}$ |
| (13) $2(\frac{1}{2}, \frac{1}{2}, 0)$ $x, x, 0$ | (14) 2 $x, \bar{x} + \frac{1}{2}, 0$ | (15) 4 $^-$ $\frac{1}{2}, 0, z$ | (16) 4 $^+$ $0, \frac{1}{2}, z$ |
| (17) 4 $^-$ $(\frac{1}{2}, 0, 0)$ $x, \frac{1}{4}, -\frac{1}{4}$ | (18) $2(0, \frac{1}{4}, \frac{1}{4})$ $\frac{1}{4}, y + \frac{1}{4}, y$ | (19) $2(0, -\frac{1}{4}, \frac{1}{4})$ $\frac{1}{4}, y + \frac{1}{4}, \bar{y}$ | (20) 4 $^+$ $(\frac{1}{2}, 0, 0)$ $x, \frac{1}{4}, \frac{1}{4}$ |
| (21) 4 $^+$ $(0, \frac{1}{2}, 0)$ $\frac{1}{4}, y, -\frac{1}{4}$ | (22) $2(\frac{1}{4}, 0, \frac{1}{4})$ $x + \frac{1}{4}, \frac{1}{4}, x$ | (23) 4 $^-$ $(0, \frac{1}{2}, 0)$ $\frac{1}{4}, y, \frac{1}{4}$ | (24) $2(\frac{1}{4}, 0, -\frac{1}{4})$ $\bar{x} + \frac{1}{4}, \frac{1}{4}, x$ |
| (25) $\bar{1}$ $\frac{1}{4}, \frac{1}{4}, 0$ | (26) $n(\frac{1}{2}, \frac{1}{2}, 0)$ $x, y, 0$ | (27) a $x, \frac{1}{4}, z$ | (28) b $\frac{1}{4}, y, z$ |
| (29) $\bar{3}^+$ $x + \frac{1}{2}, x, x; \frac{1}{2}, 0, 0$ | (30) $\bar{3}^+$ $\bar{x} - \frac{1}{2}, x + 1, \bar{x}; 0, \frac{1}{2}, \frac{1}{2}$ | (31) $\bar{3}^+$ $x - \frac{1}{2}, \bar{x} + 1, \bar{x}; 0, \frac{1}{2}, -\frac{1}{2}$ | (32) $\bar{3}^+$ $\bar{x} + \frac{1}{2}, \bar{x}, x; \frac{1}{2}, 0, 0$ |
| (33) $\bar{3}^-$ $x, x + \frac{1}{2}, x; 0, \frac{1}{2}, 0$ | (34) $\bar{3}^-$ $x + 1, \bar{x} - \frac{1}{2}, \bar{x}; \frac{1}{2}, 0, \frac{1}{2}$ | (35) $\bar{3}^-$ $\bar{x}, \bar{x} + \frac{1}{2}, x; 0, \frac{1}{2}, 0$ | (36) $\bar{3}^-$ $\bar{x} + 1, x - \frac{1}{2}, \bar{x}; \frac{1}{2}, 0, -\frac{1}{2}$ |
| (37) m $x + \frac{1}{2}, \bar{x}, z$ | (38) $g(\frac{1}{2}, \frac{1}{2}, 0)$ x, x, z | (39) 4 $^-$ $0, \frac{1}{2}, z; 0, \frac{1}{2}, 0$ | (40) 4 $^+$ $\frac{1}{2}, 0, z; \frac{1}{2}, 0, 0$ |
| (41) 4 $^-$ $x, \frac{1}{4}, \frac{1}{4}; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (42) $g(\frac{1}{2}, -\frac{1}{4}, -\frac{1}{4})$ $x, y + \frac{1}{4}, \bar{y}$ | (43) $g(\frac{1}{2}, \frac{1}{4}, \frac{1}{4})$ $x, y + \frac{1}{4}, y$ | (44) 4 $^+$ $x, \frac{1}{4}, -\frac{1}{4}; \frac{1}{4}, \frac{1}{4}, -\frac{1}{4}$ |
| (45) 4 $^+$ $\frac{1}{4}, y, \frac{1}{4}; \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ | (46) $g(\frac{1}{4}, \frac{1}{2}, -\frac{1}{4})$ $\bar{x} + \frac{1}{4}, y, x$ | (47) 4 $^-$ $\frac{1}{4}, y, -\frac{1}{4}; \frac{1}{4}, \frac{1}{4}, -\frac{1}{4}$ | (48) $g(\frac{1}{4}, \frac{1}{2}, \frac{1}{4})$ $x + \frac{1}{4}, y, x$ |

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; $t(0, \frac{1}{2}, \frac{1}{2})$; $t(\frac{1}{2}, 0, \frac{1}{2})$; (2); (3); (5); (13); (25)

Positions

Multiplicity, Wyckoff letter, Site symmetry		Coordinates				Reflection conditions		
		$(0,0,0)+$	$(0, \frac{1}{2}, \frac{1}{2})+$	$(\frac{1}{2}, 0, \frac{1}{2})+$	$(\frac{1}{2}, \frac{1}{2}, 0)+$			
192	<i>l</i> 1	(1) x, y, z (5) z, x, y (9) y, z, x (13) y, x, \bar{z} (17) x, z, \bar{y} (21) z, y, \bar{x} (25) $\bar{x}, \bar{y}, \bar{z}$ (29) $\bar{z}, \bar{x}, \bar{y}$ (33) $\bar{y}, \bar{z}, \bar{x}$ (37) \bar{y}, \bar{x}, z (41) \bar{x}, \bar{z}, y (45) \bar{z}, \bar{y}, x	(2) \bar{x}, \bar{y}, z (6) z, \bar{x}, \bar{y} (10) \bar{y}, z, \bar{x} (14) $\bar{y}, \bar{x}, \bar{z}$ (18) \bar{x}, z, y (22) z, \bar{y}, x (26) x, y, \bar{z} (30) \bar{z}, x, y (34) y, \bar{z}, x (38) y, x, z (42) x, \bar{z}, \bar{y} (46) \bar{z}, y, \bar{x}	(3) \bar{x}, y, \bar{z} (7) \bar{z}, \bar{x}, y (11) y, \bar{z}, \bar{x} (15) y, \bar{x}, z (19) $\bar{x}, \bar{z}, \bar{y}$ (23) \bar{z}, y, x (27) x, \bar{y}, z (31) z, x, \bar{y} (35) \bar{y}, z, x (39) \bar{y}, x, \bar{z} (43) x, z, y (47) z, \bar{y}, \bar{x}	(4) x, \bar{y}, \bar{z} (8) \bar{z}, x, \bar{y} (12) \bar{y}, \bar{z}, x (16) \bar{y}, x, z (20) x, \bar{z}, y (24) $\bar{z}, \bar{y}, \bar{x}$ (28) \bar{x}, y, z (32) z, \bar{x}, y (36) y, z, \bar{x} (40) y, \bar{x}, \bar{z} (44) \bar{x}, z, \bar{y} (48) z, y, x	Reflection conditions h, k, l permutable General: $hkl: h+k, h+l, k+l = 2n$ $0kl: k, l = 2n$ $hhl: h+l = 2n$ $h00: h = 2n$		
						Special: as above, plus		
96	<i>k</i> . . <i>m</i>	x, x, z \bar{z}, \bar{x}, x x, x, \bar{z} $\bar{x}, \bar{z}, \bar{x}$	\bar{x}, \bar{x}, z \bar{z}, x, \bar{x} $\bar{x}, \bar{x}, \bar{z}$ x, \bar{z}, x	\bar{x}, x, \bar{z} x, z, x x, \bar{x}, z z, x, \bar{x}	x, \bar{x}, \bar{z} \bar{x}, z, \bar{x} \bar{x}, x, z z, \bar{x}, x	z, x, x x, \bar{z}, \bar{x} x, z, \bar{x} \bar{z}, x, x	z, \bar{x}, \bar{x} \bar{x}, \bar{z}, x \bar{x}, z, x $\bar{z}, \bar{x}, \bar{x}$	no extra conditions
96	<i>j</i> <i>m</i> . .	$0, y, z$ $\bar{z}, 0, y$ $y, 0, \bar{z}$ $0, \bar{z}, \bar{y}$	$0, \bar{y}, z$ $\bar{z}, 0, \bar{y}$ $\bar{y}, 0, \bar{z}$ $0, \bar{z}, y$	$0, y, \bar{z}$ $y, z, 0$ $y, 0, z$ $z, y, 0$	$0, \bar{y}, \bar{z}$ $\bar{y}, z, 0$ $\bar{y}, 0, z$ $z, \bar{y}, 0$	$z, 0, y$ $y, \bar{z}, 0$ $0, z, \bar{y}$ $\bar{z}, y, 0$	$z, 0, \bar{y}$ $\bar{y}, \bar{z}, 0$ $0, z, y$ $\bar{z}, \bar{y}, 0$	no extra conditions
48	<i>i</i> <i>m</i> . <i>m</i> 2	$\frac{1}{2}, y, y$ $\bar{y}, \frac{1}{2}, y$	$\frac{1}{2}, \bar{y}, y$ $\bar{y}, \frac{1}{2}, \bar{y}$	$\frac{1}{2}, y, \bar{y}$ $y, y, \frac{1}{2}$	$\frac{1}{2}, \bar{y}, \bar{y}$ $\bar{y}, y, \frac{1}{2}$	$y, \frac{1}{2}, y$ $y, \bar{y}, \frac{1}{2}$	$y, \frac{1}{2}, \bar{y}$ $\bar{y}, \bar{y}, \frac{1}{2}$	no extra conditions
48	<i>h</i> <i>m</i> . <i>m</i> 2	$0, y, y$ $\bar{y}, 0, y$	$0, \bar{y}, y$ $\bar{y}, 0, \bar{y}$	$0, y, \bar{y}$ $y, y, 0$	$0, \bar{y}, \bar{y}$ $\bar{y}, y, 0$	$y, 0, y$ $y, \bar{y}, 0$	$y, 0, \bar{y}$ $\bar{y}, \bar{y}, 0$	no extra conditions
48	<i>g</i> 2 . <i>mm</i>	$x, \frac{1}{4}, \frac{1}{4}$ $\frac{1}{4}, x, \frac{3}{4}$	$\bar{x}, \frac{3}{4}, \frac{1}{4}$ $\frac{3}{4}, \bar{x}, \frac{3}{4}$	$\frac{1}{4}, x, \frac{1}{4}$ $x, \frac{1}{4}, \frac{3}{4}$	$\frac{1}{4}, \bar{x}, \frac{3}{4}$ $\bar{x}, \frac{1}{4}, \frac{1}{4}$	$\frac{1}{4}, \frac{1}{4}, x$ $\frac{1}{4}, \frac{1}{4}, \bar{x}$	$\frac{3}{4}, \frac{1}{4}, \bar{x}$ $\frac{1}{4}, \frac{3}{4}, x$	$hkl: h = 2n$
32	<i>f</i> . 3 <i>m</i>	x, x, x x, x, \bar{x}	\bar{x}, \bar{x}, x $\bar{x}, \bar{x}, \bar{x}$	\bar{x}, x, \bar{x} x, \bar{x}, x	x, \bar{x}, \bar{x} \bar{x}, x, x			no extra conditions
24	<i>e</i> 4 <i>m</i> . <i>m</i>	$x, 0, 0$	$\bar{x}, 0, 0$	$0, x, 0$	$0, \bar{x}, 0$	$0, 0, x$	$0, 0, \bar{x}$	no extra conditions
24	<i>d</i> <i>m</i> . <i>mm</i>	$0, \frac{1}{4}, \frac{1}{4}$	$0, \frac{3}{4}, \frac{1}{4}$	$\frac{1}{4}, 0, \frac{1}{4}$	$\frac{1}{4}, 0, \frac{3}{4}$	$\frac{1}{4}, \frac{1}{4}, 0$	$\frac{3}{4}, \frac{1}{4}, 0$	$hkl: h = 2n$
8	<i>c</i> $\bar{4}3m$	$\frac{1}{4}, \frac{1}{4}, \frac{1}{4}$	$\frac{1}{4}, \frac{1}{4}, \frac{3}{4}$					$hkl: h = 2n$
4	<i>b</i> $m\bar{3}m$	$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$						no extra conditions
4	<i>a</i> $m\bar{3}m$	$0, 0, 0$						no extra conditions



Symmetry of special projections

Along $[001]$ $p4mm$
 $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ $\mathbf{b}' = \frac{1}{2}\mathbf{b}$
 Origin at $0, 0, z$

Along $[111]$ $p6mm$
 $\mathbf{a}' = \frac{1}{6}(2\mathbf{a} - \mathbf{b} - \mathbf{c})$ $\mathbf{b}' = \frac{1}{6}(-\mathbf{a} + 2\mathbf{b} - \mathbf{c})$
 Origin at x, x, x

Along $[110]$ $c2mm$
 $\mathbf{a}' = \frac{1}{2}(-\mathbf{a} + \mathbf{b})$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, x, 0$