

Cubic

 $m\bar{3}m$  $O_h^7$  $Fd\bar{3}m$ Patterson symmetry  $Fm\bar{3}m$  $F4_1/d\bar{3}2/m$ 

No. 227

ORIGIN CHOICE 2

**Origin** at centre ( $\bar{3}m$ ), at  $\frac{1}{8}, \frac{1}{8}, \frac{1}{8}$  from  $\bar{4}3m$ **Positions**Multiplicity,  
Wyckoff letter,  
Site symmetry,  
Coordinates**Patterson peaks (U, V, W (Multiplicity))**

192 i 1	x,y,z; 3/4-x,1/4-y,1/2+z; etc.		
	<b>0, 0, 0 (192)</b>	1/4+2x, 3/4+2y, 1/2 (8)	3/4+2x, 1/2, 1/4+2z (8)
	1/2, 1/4+2y, 3/4+2z (8)	x-z, -x+y, -y+z (8)	1/2+x-z, 1/4+x+y, 3/4+y+z (8)
	1/4+x+z, 3/4+x+y, 1/2-y+z (8)	3/4+x+z, 1/2-x+y, 1/4+y+z (8)	1/4+x-y, 3/4-x+y, 1/2+2z (8)
	x+y, x+y, 2z (8)	3/4+x-y, 1/2+x+y, 1/4 (8)	1/4, 3/4+y-z, 1/2+y+z (8)
	1/2+2x, 1/4+y-z, 3/4-y+z (8)	2x, y+z, y+z (8)	1/4+x-z, 3/4, 1/2+x+z (8)
	3/4+x-z, 1/2+2y, 1/4-x+z (8)	x+z, 2y, x+z (8)	2x, 2y, 2z (4)
	3/4, 1/4, 1/2+2z (16)	1/4, 1/2+2y, 3/4 (16)	1/2+2x, 3/4, 1/4 (16)
	x+z, x+y, y+z (8)	1/2+x+z, 3/4-x+y, 1/4-y+z (8)	3/4+x-z, 1/4-x+y, 1/2+y+z (8)
	1/4+x-z, 1/2+x+y, 3/4-y+z (8)	3/4+x+y, 1/4+x+y, 1/2 (16)	x-y, -x+y, 0 (16)
	1/4+x+y, 1/2-x+y, 3/4+2z (8)	3/4+2x, 1/4+y+z, 1/2-y+z (8)	1/2, 3/4+y+z, 1/4+y+z (16)
	0, y-z, -y+z (16)	3/4+x+z, 1/4+2y, 1/2-x+z (8)	1/4+x+z, 1/2, 3/4+x+z (16)
	x-z, 0, -x+z (16)		
96 h . . 2	0,y,-y; 3/4,1/4-y,1/2-y; etc.		
	<b>0, 0, 0 (96)</b>	1/4, 3/4+2y, 1/2 (8)	1/2, 1/4+2y, 3/4-2y (8)
	y, y, -2y (8)	1/2+y, 1/4+y, 3/4 (8)	1/4-y, 3/4+y, 1/2-2y (8)
	0, 2y, -2y (8)	3/4, 1/4, 1/2-2y (16)	1/2, 3/4, 1/4 (16)
	-y, y, 0 (16)	1/2-y, 3/4+y, 1/4-2y (8)	3/4+y, 1/4+y, 1/2 (16)
96 g . . m	x,x,z; 3/4-x,1/4-x,1/2+z; etc.		
	<b>0, 0, 0 (96)</b>	1/4+2x, 3/4+2x, 1/2 (8)	3/4+2x, 1/2, 1/4+2z (8)
	x-z, 0, -x+z (16)	1/2+x-z, 1/4+2x, 3/4+x+z (8)	3/4+x+z, 1/2, 1/4+x+z (16)
	1/4, 3/4, 1/2+2z (8)	2x, 2x, 2z (4)	3/4, 1/2+2x, 1/4 (16)
	1/4, 3/4+x-z, 1/2+x+z (8)	1/2+2x, 1/4+x-z, 3/4-x+z (8)	2x, x+z, x+z (8)
48 f 2 . m m	x,1/8,1/8; 3/4-x,1/8,5/8; etc.		
	<b>0, 0, 0 (48)</b>	1/4+2x, 0, 1/2 (8)	7/8+x, 1/8-x, 0 (16)
	1/8+x, 7/8-x, 3/4 (8)	1/4, 3/4, 3/4 (24)	1/2+2x, 1/4, 3/4 (4)
32 e . 3 m	x,x,x; 3/4-x,1/4-x,1/2+x; etc.		
	<b>0, 0, 0 (32)</b>	1/4+2x, 3/4+2x, 1/2 (8)	1/4, 3/4, 1/2+2x (8)
	2x, 2x, 2x (4)		
16 d . $\bar{3}m$	1/2,1/2,1/2; 1/4,3/4,0; etc.		
	<b>0, 0, 0 (16)</b>	1/4, 3/4, 1/2 (8)	
16 c . $\bar{3}m$	0,0,0; 3/4,1/4,1/2; etc.		
	<b>0, 0, 0 (16)</b>	1/4, 3/4, 1/2 (8)	
8 b $\bar{4}3m$	3/8,3/8,3/8; 1/8,5/8,1/8; etc.		
	<b>0, 0, 0 (8)</b>	1/4, 3/4, 1/4 (4)	
8 a $\bar{4}3m$	1/8,1/8,1/8; 7/8,3/8,3/8; etc.		

ORIGIN CHOICE 2

 $0, 0, 0$  (8) $1/4, 3/4, 3/4$  (4)

## Vectors between two sets of unique atoms

Wyckoff letters

Wyckoff letters

i, i	$x1-x2, y1-y2, z1-z2$ (8)		$1/4+x1+x2, 1/2+y1-z2, 3/4+z1+y2$ (8)
	$1/4+x1+x2, 3/4+y1+y2, 1/2+z1-z2$ (8)		$3/4+x1+z2, 1/4+y1+y2, 1/2+z1-x2$ (8)
	$3/4+x1+x2, 1/2+y1-y2, 1/4+z1+z2$ (8)		$1/4+x1+z2, 1/2+y1-y2, 3/4+z1+x2$ (8)
	$1/2+x1-x2, 1/4+y1+y2, 3/4+z1+z2$ (8)		$1/2+x1-z2, 3/4+y1+y2, 1/4+z1+x2$ (8)
	$x1-z2, y1-x2, z1-y2$ (8)		$x1-z2, y1-y2, z1-x2$ (8)
	$1/2+x1-z2, 1/4+y1+x2, 3/4+z1+y2$ (8)	i, h	$x1, y1-y2, z1+y2$ (8)
	$1/4+x1+z2, 3/4+y1+x2, 1/2+z1-y2$ (8)		$1/4+x1, 3/4+y1+y2, 1/2+z1+y2$ (8)
	$3/4+x1+z2, 1/2+y1-x2, 1/4+z1+y2$ (8)		$3/4+x1, 1/2+y1-y2, 1/4+z1-y2$ (8)
	$x1-y2, y1-z2, z1-x2$ (8)		$1/2+x1, 1/4+y1+y2, 3/4+z1-y2$ (8)
	$3/4+x1+y2, 1/2+y1-z2, 1/4+z1+x2$ (8)		$x1+y2, y1, z1-y2$ (8)
	$1/2+x1-y2, 1/4+y1+z2, 3/4+z1+x2$ (8)		$1/2+x1+y2, 1/4+y1, 3/4+z1+y2$ (8)
	$1/4+x1+y2, 3/4+y1+z2, 1/2+z1-x2$ (8)		$1/4+x1-y2, 3/4+y1, 1/2+z1-y2$ (8)
	$1/4+x1-y2, 3/4+y1-x2, 1/2+z1+z2$ (8)		$3/4+x1-y2, 1/2+y1, 1/4+z1+y2$ (8)
	$x1+y2, y1+x2, z1+z2$ (8)		$x1-y2, y1+y2, z1$ (8)
	$3/4+x1-y2, 1/2+y1+x2, 1/4+z1-z2$ (8)		$3/4+x1+y2, 1/2+y1+y2, 1/4+z1$ (8)
	$1/2+x1+y2, 1/4+y1-x2, 3/4+z1-z2$ (8)		$1/2+x1-y2, 1/4+y1-y2, 3/4+z1$ (8)
	$1/4+x1-x2, 3/4+y1-z2, 1/2+z1+y2$ (8)		$1/4+x1+y2, 3/4+y1-y2, 1/2+z1$ (8)
	$1/2+x1+x2, 1/4+y1-z2, 3/4+z1-y2$ (8)		$x1, y1+y2, z1-y2$ (8)
	$x1+x2, y1+z2, z1+y2$ (8)		$3/4+x1, 1/4+y1-y2, 1/2+z1-y2$ (8)
	$3/4+x1-x2, 1/2+y1+z2, 1/4+z1-y2$ (8)		$1/4+x1, 1/2+y1+y2, 3/4+z1+y2$ (8)
	$1/4+x1-z2, 3/4+y1-y2, 1/2+z1+x2$ (8)		$1/2+x1, 3/4+y1-y2, 1/4+z1+y2$ (8)
	$3/4+x1-z2, 1/2+y1+y2, 1/4+z1-x2$ (8)		$x1-y2, y1, z1+y2$ (8)
	$1/2+x1+z2, 1/4+y1-y2, 3/4+z1-x2$ (8)		$1/2+x1-y2, 3/4+y1, 1/4+z1-y2$ (8)
	$x1+z2, y1+y2, z1+x2$ (8)		$3/4+x1+y2, 1/4+y1, 1/2+z1+y2$ (8)
	$x1+x2, y1+y2, z1+z2$ (8)		$1/4+x1+y2, 1/2+y1, 3/4+z1-y2$ (8)
	$3/4+x1-x2, 1/4+y1-y2, 1/2+z1+z2$ (8)		$x1+y2, y1-y2, z1$ (8)
	$1/4+x1-x2, 1/2+y1+y2, 3/4+z1-z2$ (8)		$1/4+x1-y2, 1/2+y1-y2, 3/4+z1$ (8)
	$1/2+x1+x2, 3/4+y1-y2, 1/4+z1-z2$ (8)		$1/2+x1+y2, 3/4+y1+y2, 1/4+z1$ (8)
	$x1+z2, y1+x2, z1+y2$ (8)		$3/4+x1-y2, 1/4+y1+y2, 1/2+z1$ (8)
	$1/2+x1+z2, 3/4+y1-x2, 1/4+z1-y2$ (8)	i, g	$x1-x2, y1-x2, z1-z2$ (8)
	$3/4+x1-z2, 1/4+y1-x2, 1/2+z1+y2$ (8)		$1/4+x1+x2, 3/4+y1+x2, 1/2+z1-z2$ (8)
	$1/4+x1-z2, 1/2+y1+x2, 3/4+z1-y2$ (8)		$3/4+x1+x2, 1/2+y1-x2, 1/4+z1+z2$ (8)
	$x1+y2, y1+z2, z1+x2$ (8)		$1/2+x1-x2, 1/4+y1+x2, 3/4+z1+z2$ (8)
	$1/4+x1-y2, 1/2+y1+z2, 3/4+z1-x2$ (8)		$x1-z2, y1-x2, z1-x2$ (8)
	$1/2+x1+y2, 3/4+y1-z2, 1/4+z1-x2$ (8)		$1/2+x1-z2, 1/4+y1+x2, 3/4+z1+x2$ (8)
	$3/4+x1-y2, 1/4+y1-z2, 1/2+z1+x2$ (8)		$1/4+x1+z2, 3/4+y1+x2, 1/2+z1-x2$ (8)
	$3/4+x1+y2, 1/4+y1+x2, 1/2+z1-z2$ (8)		$3/4+x1+z2, 1/2+y1-x2, 1/4+z1+x2$ (8)
	$x1-y2, y1-x2, z1-z2$ (8)		$x1-x2, y1-z2, z1-x2$ (8)
	$1/4+x1+y2, 1/2+y1-x2, 3/4+z1+z2$ (8)		$3/4+x1+x2, 1/2+y1-z2, 1/4+z1+x2$ (8)
	$1/2+x1-y2, 3/4+y1+x2, 1/4+z1+z2$ (8)		$1/2+x1-x2, 1/4+y1+z2, 3/4+z1+x2$ (8)
	$3/4+x1+x2, 1/4+y1+z2, 1/2+z1-y2$ (8)		$1/4+x1+x2, 3/4+y1+z2, 1/2+z1-x2$ (8)
	$1/2+x1-x2, 3/4+y1+z2, 1/4+z1+y2$ (8)		$1/4+x1-x2, 3/4+y1-x2, 1/2+z1+z2$ (8)
	$x1-x2, y1-z2, z1-y2$ (8)		$x1+x2, y1+x2, z1+z2$ (8)

## ORIGIN CHOICE 2

	$3/4+x1-x2, 1/2+y1+x2, 1/4+z1-z2$ (8)		$1/4+x1, 3/4+y1, 1/2+z1$ (8)
	$1/2+x1+x2, 1/4+y1-x2, 3/4+z1-z2$ (8)		$3/4+x1, 1/2+y1, 1/4+z1$ (8)
	$1/4+x1-x2, 3/4+y1-z2, 1/2+z1+x2$ (8)		$1/2+x1, 1/4+y1, 3/4+z1$ (8)
	$1/2+x1+x2, 1/4+y1-z2, 3/4+z1-x2$ (8)	i, b	$5/8+x1, 5/8+y1, 5/8+z1$ (8)
	$x1+x2, y1+z2, z1+x2$ (8)		$7/8+x1, 3/8+y1, 7/8+z1$ (8)
	$3/4+x1-x2, 1/2+y1+z2, 1/4+z1-x2$ (8)	i, a	$7/8+x1, 7/8+y1, 7/8+z1$ (8)
	$1/4+x1-z2, 3/4+y1-x2, 1/2+z1+x2$ (8)		$1/8+x1, 5/8+y1, 5/8+z1$ (8)
	$3/4+x1-z2, 1/2+y1+x2, 1/4+z1-x2$ (8)	h, h	$0, y1-y2, -y1+y2$ (16)
	$1/2+x1+z2, 1/4+y1-x2, 3/4+z1-x2$ (8)		$1/4, 3/4+y1+y2, 1/2-y1+y2$ (8)
	$x1+z2, y1+x2, z1+x2$ (8)		$1/2, 1/4+y1+y2, 3/4-y1-y2$ (16)
i, f	$x1-x2, 7/8+y1, 7/8+z1$ (4)		$y2, y1, -y1-y2$ (8)
	$1/4+x1+x2, 7/8+y1, 3/8+z1$ (4)		$1/2+y2, 1/4+y1, 3/4-y1+y2$ (8)
	$7/8+x1, y1-x2, 7/8+z1$ (4)		$1/4-y2, 3/4+y1, 1/2-y1-y2$ (8)
	$3/8+x1, 1/4+y1+x2, 7/8+z1$ (4)		$3/4-y2, 1/2+y1, 1/4-y1+y2$ (8)
	$7/8+x1, 7/8+y1, z1-x2$ (4)		$0, y1+y2, -y1-y2$ (16)
	$7/8+x1, 3/8+y1, 1/4+z1+x2$ (4)		$3/4, 1/4+y1-y2, 1/2-y1-y2$ (8)
	$1/8+x1, 3/4+y1-x2, 5/8+z1$ (4)		$1/2, 3/4+y1-y2, 1/4-y1+y2$ (16)
	$1/8+x1, y1+x2, 1/8+z1$ (4)		$-y2, y1, -y1+y2$ (8)
	$1/4+x1-x2, 5/8+y1, 5/8+z1$ (4)		$1/2-y2, 3/4+y1, 1/4-y1-y2$ (8)
	$1/2+x1+x2, 1/8+y1, 5/8+z1$ (4)		$3/4+y2, 1/4+y1, 1/2-y1+y2$ (8)
	$1/8+x1, 5/8+y1, 1/2+z1+x2$ (4)		$1/4+y2, 1/2+y1, 3/4-y1-y2$ (8)
	$5/8+x1, 5/8+y1, 1/4+z1-x2$ (4)	h, g	$-x2, y1-x2, -y1-z2$ (8)
	$-x1+x2, 7/8-y1, 7/8-z1$ (4)		$1/4+x2, 3/4+y1+x2, 1/2-y1-z2$ (8)
	$1/4-x1-x2, 7/8-y1, 3/8-z1$ (4)		$3/4+x2, 1/2+y1-x2, 1/4-y1+z2$ (8)
	$7/8-x1, -y1+x2, 7/8-z1$ (4)		$1/2-x2, 1/4+y1+x2, 3/4-y1+z2$ (8)
	$3/8-x1, 1/4-y1-x2, 7/8-z1$ (4)		$-z2, y1-x2, -y1-x2$ (8)
	$7/8-x1, 7/8-y1, -z1+x2$ (4)		$1/2-z2, 1/4+y1+x2, 3/4-y1+x2$ (8)
	$7/8-x1, 3/8-y1, 1/4-z1-x2$ (4)		$1/4+z2, 3/4+y1+x2, 1/2-y1-x2$ (8)
	$1/8-x1, 3/4-y1+x2, 5/8-z1$ (4)		$3/4+z2, 1/2+y1-x2, 1/4-y1+x2$ (8)
	$1/8-x1, -y1-x2, 1/8-z1$ (4)		$-x2, y1-z2, -y1-x2$ (8)
	$1/4-x1+x2, 5/8-y1, 5/8-z1$ (4)		$3/4+x2, 1/2+y1-z2, 1/4-y1+x2$ (8)
	$1/2-x1-x2, 1/8-y1, 5/8-z1$ (4)		$1/2-x2, 1/4+y1+z2, 3/4-y1+x2$ (8)
	$1/8-x1, 5/8-y1, 1/2-z1-x2$ (4)		$1/4+x2, 3/4+y1+z2, 1/2-y1-x2$ (8)
	$5/8-x1, 5/8-y1, 1/4-z1+x2$ (4)	h, f	$-x2, 7/8+y1, 7/8-y1$ (8)
i, e	$x1-x2, y1-x2, z1-x2$ (8)		$1/4+x2, 7/8+y1, 3/8-y1$ (4)
	$1/4+x1+x2, 3/4+y1+x2, 1/2+z1-x2$ (8)		$7/8, y1-x2, 7/8-y1$ (4)
	$3/4+x1+x2, 1/2+y1-x2, 1/4+z1+x2$ (8)		$3/8, 1/4+y1+x2, 7/8-y1$ (4)
	$1/2+x1-x2, 1/4+y1+x2, 3/4+z1+x2$ (8)		$7/8, 7/8+y1, -y1-x2$ (4)
	$1/4+x1-x2, 3/4+y1-x2, 1/2+z1+x2$ (8)		$7/8, 3/8+y1, 1/4-y1+x2$ (4)
	$x1+x2, y1+x2, z1+x2$ (8)		$1/4-x2, 7/8-y1, 3/8+y1$ (4)
	$3/4+x1-x2, 1/2+y1+x2, 1/4+z1-x2$ (8)		$7/8, -y1+x2, 7/8+y1$ (4)
	$1/2+x1+x2, 1/4+y1-x2, 3/4+z1-x2$ (8)		$3/8, 1/4-y1-x2, 7/8+y1$ (4)
i, d	$1/2+x1, 1/2+y1, 1/2+z1$ (8)		$7/8, 7/8-y1, y1+x2$ (4)
	$3/4+x1, 1/4+y1, z1$ (8)		$7/8, 3/8-y1, 1/4+y1-x2$ (4)
	$1/4+x1, y1, 3/4+z1$ (8)		
	$x1, 3/4+y1, 1/4+z1$ (8)	h, e	$-x2, y1-x2, -y1-x2$ (8)
i, c	$x1, y1, z1$ (8)		$1/4+x2, 3/4+y1+x2, 1/2-y1-x2$ (8)
			$3/4+x2, 1/2+y1-x2, 1/4-y1+x2$ (8)

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- h, d  $1/2-x2, 1/4+y1+x2, 3/4-y1+x2$  (8)
- $1/2, 1/2+y1, 1/2-y1$  (16)
- $3/4, 1/4+y1, -y1$  (8)
- $0, 3/4+y1, 1/4-y1$  (16)
- h, c  $0, y1, -y1$  (16)
- $1/4, 3/4+y1, 1/2-y1$  (8)
- $1/2, 1/4+y1, 3/4-y1$  (16)
- h, b  $5/8, 5/8+y1, 5/8-y1$  (8)
- h, a  $7/8, 7/8+y1, 7/8-y1$  (8)
- g, g  $x1-x2, x1-x2, z1-z2$  (8)
- $1/4+x1+x2, 3/4+x1+x2, 1/2+z1-z2$  (8)
- $3/4+x1+x2, 1/2+x1-x2, 1/4+z1+z2$  (8)
- $x1-z2, x1-x2, z1-x2$  (8)
- $1/2+x1-z2, 1/4+x1+x2, 3/4+z1+x2$  (8)
- $1/4+x1+z2, 3/4+x1+x2, 1/2+z1-x2$  (8)
- $3/4+x1+z2, 1/2+x1-x2, 1/4+z1+x2$  (8)
- $1/4+x1-x2, 3/4+x1-x2, 1/2+z1+z2$  (8)
- $x1+x2, x1+x2, z1+z2$  (8)
- $3/4+x1-x2, 1/2+x1+x2, 1/4+z1-z2$  (8)
- $1/4+x1-x2, 3/4+x1-z2, 1/2+z1+x2$  (8)
- $1/2+x1+x2, 1/4+x1-z2, 3/4+z1-x2$  (8)
- $x1+x2, x1+z2, z1+x2$  (8)
- $3/4+x1-x2, 1/2+x1+z2, 1/4+z1-x2$  (8)
- g, f  $x1-x2, 7/8+x1, 7/8+z1$  (4)
- $1/4+x1+x2, 7/8+x1, 3/8+z1$  (4)
- $7/8+x1, 7/8+x1, z1-x2$  (4)
- $7/8+x1, 3/8+x1, 1/4+z1+x2$  (4)
- $1/8+x1, 3/4+x1-x2, 5/8+z1$  (4)
- $1/8+x1, x1+x2, 1/8+z1$  (4)
- $1/8+x1, 5/8+x1, 1/2+z1+x2$  (4)
- $5/8+x1, 5/8+x1, 1/4+z1-x2$  (4)
- $-x1+x2, 7/8-x1, 7/8-z1$  (4)
- $1/4-x1-x2, 7/8-x1, 3/8-z1$  (4)
- $7/8-x1, 7/8-x1, -z1+x2$  (4)
- $7/8-x1, 3/8-x1, 1/4-z1-x2$  (4)
- $1/8-x1, 3/4-x1+x2, 5/8-z1$  (4)
- $1/8-x1, -x1-x2, 1/8-z1$  (4)
- $1/8-x1, 5/8-x1, 1/2-z1-x2$  (4)
- $5/8-x1, 5/8-x1, 1/4-z1+x2$  (4)
- g, e  $x1-x2, x1-x2, z1-x2$  (8)
- $1/4+x1+x2, 3/4+x1+x2, 1/2+z1-x2$  (8)
- $3/4+x1+x2, 1/2+x1-x2, 1/4+z1+x2$  (8)
- $1/4+x1-x2, 3/4+x1-x2, 1/2+z1+x2$  (8)
- $x1+x2, x1+x2, z1+x2$  (8)
- $3/4+x1-x2, 1/2+x1+x2, 1/4+z1-x2$  (8)
- g, d  $1/2+x1, 1/2+x1, 1/2+z1$  (8)
- $3/4+x1, 1/4+x1, z1$  (8)

- $1/4+x1, x1, 3/4+z1$  (8)
- g, c  $x1, x1, z1$  (8)
- $1/4+x1, 3/4+x1, 1/2+z1$  (8)
- $3/4+x1, 1/2+x1, 1/4+z1$  (8)
- g, b  $5/8+x1, 5/8+x1, 5/8+z1$  (8)
- $7/8+x1, 3/8+x1, 7/8+z1$  (8)
- g, a  $7/8+x1, 7/8+x1, 7/8+z1$  (8)
- $1/8+x1, 5/8+x1, 5/8+z1$  (8)
- f, f  $x1-x2, 0, 0$  (16)
- $1/4+x1+x2, 0, 1/2$  (8)
- $7/8+x1, 1/8-x2, 0$  (8)
- $1/8+x1, 7/8-x2, 3/4$  (4)
- $1/4+x1-x2, 3/4, 3/4$  (8)
- $1/2+x1+x2, 1/4, 3/4$  (8)
- $1/4-x1-x2, 0, 1/2$  (8)
- $7/8-x1, 1/8+x2, 0$  (8)
- $1/8-x1, 7/8+x2, 3/4$  (4)
- f, e  $x1-x2, 1/8-x2, 1/8-x2$  (4)
- $1/4+x1+x2, 7/8+x2, 5/8-x2$  (4)
- $1/4+x1-x2, 7/8-x2, 5/8+x2$  (4)
- $x1+x2, 1/8+x2, 1/8+x2$  (4)
- $-x1+x2, 1/8+x2, 1/8+x2$  (4)
- $1/4-x1-x2, 7/8-x2, 5/8+x2$  (4)
- $1/4-x1+x2, 7/8+x2, 5/8-x2$  (4)
- $-x1-x2, 1/8-x2, 1/8-x2$  (4)
- f, d  $1/2+x1, 5/8, 5/8$  (8)
- $3/4+x1, 3/8, 1/8$  (4)
- $3/4-x1, 3/8, 1/8$  (4)
- f, c  $x1, 1/8, 1/8$  (8)
- $1/4+x1, 7/8, 5/8$  (4)
- $1/4-x1, 7/8, 5/8$  (4)
- f, b  $5/8+x1, 3/4, 3/4$  (4)
- $7/8+x1, 1/2, 0$  (8)
- $5/8-x1, 3/4, 3/4$  (4)
- $7/8-x1, 1/2, 0$  (8)
- f, a  $7/8+x1, 0, 0$  (8)
- $1/8+x1, 3/4, 3/4$  (4)
- $7/8-x1, 0, 0$  (8)
- $1/8-x1, 3/4, 3/4$  (4)
- e, e  $x1-x2, x1-x2, x1-x2$  (8)
- $1/4+x1+x2, 3/4+x1+x2, 1/2+x1-x2$  (8)
- $1/4+x1-x2, 3/4+x1-x2, 1/2+x1+x2$  (8)
- $x1+x2, x1+x2, x1+x2$  (8)
- e, d  $1/2+x1, 1/2+x1, 1/2+x1$  (8)
- $3/4+x1, 1/4+x1, x1$  (8)
- e, c  $x1, x1, x1$  (8)
- $1/4+x1, 3/4+x1, 1/2+x1$  (8)

## ORIGIN CHOICE 2

- e, b  $5/8+x1, 5/8+x1, 5/8+x1$  (8)  
 $7/8+x1, 3/8+x1, 7/8+x1$  (8)
- e, a  $7/8+x1, 7/8+x1, 7/8+x1$  (8)  
 $1/8+x1, 5/8+x1, 5/8+x1$  (8)
- d, c  $1/2, 1/2, 1/2$  (32)  
 $3/4, 1/4, 0$  (16)
- d, b  $1/8, 1/8, 1/8$  (8)
- d, a  $3/8, 3/8, 3/8$  (8)
- c, b  $5/8, 5/8, 5/8$  (8)
- c, a  $7/8, 7/8, 7/8$  (8)
- b, a  $1/4, 1/4, 1/4$  (8)  
 $1/2, 0, 0$  (16)