$L_2(23).2$ (mod 23)

	blocks	defect	matrix
$G:$	1	1	23×22
	2	0	$23_1 = \chi_{9,0}, \varphi_{12,1}$
	3	0	$23_2 = \chi_{9,1}, \varphi_{12,0}$
$2.G:$	4	1	23×22

Block 1:	$\varphi_{1,0}$	$\varphi_{1,1}$	$\varphi_{2,0}$	$\varphi_{2,1}$	$\varphi_{3,0}$	$\varphi_{3,1}$	$\varphi_{4,0}$	$\varphi_{4,1}$	$\varphi_{5,0}$	$\varphi_{5,1}$	$\varphi_{6,0}$	$\varphi_{6,1}$	$\varphi_{7,0}$
$1_1 = \chi_{1,0}$	1	.	.	.	.	.	.	.	.	.	.	.	.
$1_2 = \chi_{1,1}$	.	1	.	.	.	.	.	.	.	.	.	.	.
$22_1 = \chi_{2+}$	.	.	.	.	.	.	.	.	.	.	1	1	.
$22_2 = \chi_{4,0}$	.	.	.	.	.	.	1	.	.	.	.	.	.
$22_3 = \chi_{4,1}$	.	.	.	.	.	.	.	1	.	.	.	.	.
$22_4 = \chi_{5,0}$	.	.	.	.	.	1	.	.	.	.	.	.	.
$22_5 = \chi_{5,1}$	.	.	.	.	1	.	.	.	.	.	.	.	.
$22_6 = \chi_{6,0}$	.	.	1	.	.	.	.	.	.	.	.	.	.
$22_7 = \chi_{6,1}$	.	.	.	1	.	.	.	.	.	.	.	.	.
$22_8 = \chi_{7,0}$	.	.	.	.	.	.	.	.	1	.	.	.	.
$22_9 = \chi_{7,1}$	.	.	.	.	.	.	.	.	.	1	.	.	1
$22_{10} = \chi_{8,0}$	.	1	.	.	.	.	.	.	.	.	.	.	.
$22_{11} = \chi_{8,1}$	1	.	.	.	.	.	.	.	.	.	.	.	.
$24_1 = \chi_{10,0}$	.	.	.	.	.	.	.	.	.	.	.	1	1
$24_2 = \chi_{10,1}$	.	.	.	.	.	.	.	.	.	.	1	.	.
$24_3 = \chi_{11,0}$	.	.	.	.	1	.	.	.	.	.	.	.	.
$24_4 = \chi_{11,1}$	.	.	.	.	.	1	.	.	.	.	.	.	.
$24_5 = \chi_{12,0}$	.	.	.	.	.	.	.	1	.	.	.	.	.
$24_6 = \chi_{12,1}$	.	.	.	.	.	.	1	.	.	.	.	.	.
$24_7 = \chi_{13,0}$	.	.	.	1	.	.	.	.	.	.	.	.	.
$24_8 = \chi_{13,1}$	.	.	1	.	.	.	.	.	.	.	.	.	.
$24_9 = \chi_{14,0}$	.	.	.	.	.	.	.	.	1	.	.	.	.
$24_{10} = \chi_{14,1}$	.	.	.	.	.	.	.	.	.	1	.	.	.

(**Block 1:**)	$\varphi_{7,1}$	$\varphi_{8,0}$	$\varphi_{8,1}$	$\varphi_{9,0}$	$\varphi_{9,1}$	$\varphi_{10,0}$	$\varphi_{10,1}$	$\varphi_{11,0}$	$\varphi_{11,1}$
$1_1 = \chi_{1,0}$	.	.	.	.	.	.	.	.	.
$1_2 = \chi_{1,1}$	.	.	.	.	.	.	.	.	.
$22_1 = \chi_{2+}$	.	.	.	.	.	.	.	.	.
$22_2 = \chi_{4,0}$	.	.	1	.	.	.	.	.	.
$22_3 = \chi_{4,1}$	.	1	.	.	.	.	.	.	.
$22_4 = \chi_{5,0}$	.	.	.	1	.	.	.	.	.
$22_5 = \chi_{5,1}$	.	.	.	.	1	.	.	.	.
$22_6 = \chi_{6,0}$	.	.	.	.	.	.	1	.	.
$22_7 = \chi_{6,1}$	.	.	.	.	.	1	.	.	.
$22_8 = \chi_{7,0}$	1	.	.	.	.	.	.	.	.
$22_9 = \chi_{7,1}$	.	.	.	.	.	.	.	.	.
$22_{10} = \chi_{8,0}$	.	.	.	.	.	.	.	1	.
$22_{11} = \chi_{8,1}$	.	.	.	.	.	.	.	.	1
$24_1 = \chi_{10,0}$	.	.	.	.	.	.	.	.	.
$24_2 = \chi_{10,1}$	1	.	.	.	.	.	.	.	.
$24_3 = \chi_{11,0}$	.	.	.	.	.	.	1	.	.
$24_4 = \chi_{11,1}$	.	.	.	.	.	1	.	.	.
$24_5 = \chi_{12,0}$	.	.	.	1	.	.	.	.	.
$24_6 = \chi_{12,1}$	.	.	.	.	1	.	.	.	.
$24_7 = \chi_{13,0}$	.	.	.	.	.	.	.	1	.
$24_8 = \chi_{13,1}$	.	.	.	.	.	.	.	.	1
$24_9 = \chi_{14,0}$	.	.	1	.	.	.	.	.	.
$24_{10} = \chi_{14,1}$	.	1	.	.	.	.	.	.	.

$$
\begin{aligned}
\varphi_{1,0} &= 1_1 & \varphi_{6,1} &= 11_2 \\
\varphi_{1,1} &= 1_2 & \varphi_{7,0} &= 13_1 \\
\varphi_{2,0} &= 3_1 & \varphi_{7,1} &= 13_2 \\
\varphi_{2,1} &= 3_2 & \varphi_{8,0} &= 15_1 \\
\varphi_{3,0} &= 5_1 & \varphi_{8,1} &= 15_2 \\
\varphi_{3,1} &= 5_2 & \varphi_{9,0} &= 17_1 \\
\varphi_{4,0} &= 7_1 & \varphi_{9,1} &= 17_2 \\
\varphi_{4,1} &= 7_2 & \varphi_{10,0} &= 19_1 \\
\varphi_{5,0} &= 9_1 & \varphi_{10,1} &= 19_2 \\
\varphi_{5,1} &= 9_2 & \varphi_{11,0} &= 21_1 \\
\varphi_{6,0} &= 11_1 & \varphi_{11,1} &= 21_2 \\
\end{aligned}
$$

Block 4:	$\varphi_{13,0}$	$\varphi_{13,1}$	$\varphi_{14,0}$	$\varphi_{14,1}$	$\varphi_{15,0}$	$\varphi_{15,1}$	$\varphi_{16,0}$	$\varphi_{16,1}$	$\varphi_{17,0}$	$\varphi_{17,1}$	$\varphi_{18,0}$
$24_{11} = \chi_{15+}$	.	.	.	.	.	.	.	.	.	.	1
$22_{12} = \chi_{17,0}$	1	.	.	.	.	.	.	.	.	.	.
$22_{13} = \chi_{17,1}$	.	1	.	.	.	.	.	.	.	.	.
$22_{14} = \chi_{18,0}$	.	.	.	.	.	.	.	1	.	.	.
$22_{15} = \chi_{18,1}$	.	.	.	.	.	.	1	.	.	.	.
$22_{16} = \chi_{19,0}$	.	.	.	.	.	.	.	.	.	.	.
$22_{17} = \chi_{19,1}$	.	.	.	.	.	.	.	.	.	.	.
$22_{18} = \chi_{20,0}$	.	.	.	.	.	1	.	.	.	.	.
$22_{19} = \chi_{20,1}$	.	.	.	.	1	.	.	.	.	.	.
$22_{20} = \chi_{21,0}$	.	.	.	.	.	.	.	.	1	.	.
$22_{21} = \chi_{21,1}$	.	.	.	.	.	.	.	.	.	1	1
$22_{22} = \chi_{22,0}$	.	.	1	.	.	.	.	.	.	.	.
$22_{23} = \chi_{22,1}$	.	.	.	1	.	.	.	.	.	.	.
$24_{12} = \chi_{23,0}$	1	.	.	.	.	.	.	.	.	.	.
$24_{13} = \chi_{23,1}$	.	1	.	.	.	.	.	.	.	.	.
$24_{14} = \chi_{24,0}$	.	.	.	.	.	.	1	.	.	.	.
$24_{15} = \chi_{24,1}$	.	.	.	.	.	.	.	1	.	.	.
$24_{16} = \chi_{25,0}$	.	.	.	.	1	.	.	.	.	.	.
$24_{17} = \chi_{25,1}$	.	.	.	.	.	1	.	.	.	.	.
$24_{18} = \chi_{26,0}$	.	.	.	.	.	.	.	.	1	.	.
$24_{19} = \chi_{26,1}$	.	.	.	.	.	.	.	.	.	1	.
$24_{20} = \chi_{27,0}$	.	.	.	1	.	.	.	.	.	.	.
$24_{21} = \chi_{27,1}$	.	.	1	.	.	.	.	.	.	.	.

(**Block 4:**)	$\varphi_{18,1}$	$\varphi_{19,0}$	$\varphi_{19,1}$	$\varphi_{20,0}$	$\varphi_{20,1}$	$\varphi_{21,0}$	$\varphi_{21,1}$	$\varphi_{22,0}$	$\varphi_{22,1}$	$\varphi_{23,0}$	$\varphi_{23,1}$
$24_{11} = \chi_{15+}$	1	.	.	.	.	.	.	.	.	.	.
$22_{12} = \chi_{17,0}$	.	.	.	.	.	.	.	.	1	.	.
$22_{13} = \chi_{17,1}$	.	.	.	.	.	.	.	1	.	.	.
$22_{14} = \chi_{18,0}$	.	1	.	.	.	.	.	.	.	.	.
$22_{15} = \chi_{18,1}$	.	.	1	.	.	.	.	.	.	.	.
$22_{16} = \chi_{19,0}$	.	.	.	.	.	.	.	.	.	.	1
$22_{17} = \chi_{19,1}$	.	.	.	.	.	.	.	.	.	1	.
$22_{18} = \chi_{20,0}$	.	.	.	1	.	.	.	.	.	.	.
$22_{19} = \chi_{20,1}$	.	.	.	.	1	.	.	.	.	.	.
$22_{20} = \chi_{21,0}$	1	.	.	.	.	.	.	.	.	.	.
$22_{21} = \chi_{21,1}$	.	.	.	.	.	.	.	.	.	.	.
$22_{22} = \chi_{22,0}$	.	.	.	.	.	.	1	.	.	.	.
$22_{23} = \chi_{22,1}$	.	.	.	.	.	1	.	.	.	.	.
$24_{12} = \chi_{23,0}$	.	.	.	.	.	.	.	.	.	.	1
$24_{13} = \chi_{23,1}$	.	.	.	.	.	.	.	.	.	1	.
$24_{14} = \chi_{24,0}$	.	.	.	.	1	.	.	.	.	.	.
$24_{15} = \chi_{24,1}$	.	.	.	1	.	.	.	.	.	.	.
$24_{16} = \chi_{25,0}$	.	.	.	.	.	.	1	.	.	.	.
$24_{17} = \chi_{25,1}$	.	.	.	.	.	1	.	.	.	.	.
$24_{18} = \chi_{26,0}$	.	.	1	.	.	.	.	.	.	.	.
$24_{19} = \chi_{26,1}$	.	1	.	.	.	.	.	.	.	.	.
$24_{20} = \chi_{27,0}$	.	.	.	.	.	.	.	1	.	.	.
$24_{21} = \chi_{27,1}$	.	.	.	.	.	.	.	.	1	.	.

$$
\begin{aligned}
\varphi_{13,0} &= 2_1 & \varphi_{18,1} &= 12_2 \\
\varphi_{13,1} &= 2_2 & \varphi_{19,0} &= 14_1 \\
\varphi_{14,0} &= 4_1 & \varphi_{19,1} &= 14_2 \\
\varphi_{14,1} &= 4_2 & \varphi_{20,0} &= 16_1 \\
\varphi_{15,0} &= 6_1 & \varphi_{20,1} &= 16_2 \\
\varphi_{15,1} &= 6_2 & \varphi_{21,0} &= 18_1 \\
\varphi_{16,0} &= 8_1 & \varphi_{21,1} &= 18_2 \\
\varphi_{16,1} &= 8_2 & \varphi_{22,0} &= 20_1 \\
\varphi_{17,0} &= 10_1 & \varphi_{22,1} &= 20_2 \\
\varphi_{17,1} &= 10_2 & \varphi_{23,0} &= 22_1 \\
\varphi_{18,0} &= 12_1 & \varphi_{23,1} &= 22_2
\end{aligned}
$$