

$S_8(2) \pmod{5}$

	blocks	defect	matrix		blocks	defect	matrix
$G :$	1	2	20×14		18	0	$10200_1 = \chi_{40}, \varphi_{39}$
	2	1	5×4		19	0	$11900_1 = \chi_{41}, \varphi_{42}$
	3	1	5×4		20	0	$11900_2 = \chi_{42}, \varphi_{41}$
	4	1	5×4		21	0	$13600_1 = \chi_{44}, \varphi_{44}$
	5	1	5×4		22	0	$17850_1 = \chi_{53}, \varphi_{50}$
	6	1	5×4		23	0	$17850_2 = \chi_{54}, \varphi_{49}$
	7	0	$1275_1 = \chi_{13}, \varphi_{14}$		24	0	$23800_1 = \chi_{57}, \varphi_{54}$
	8	1	5×4		25	0	$23800_2 = \chi_{58}, \varphi_{53}$
	9	0	$2975_1 = \chi_{20}, \varphi_{22}$		26	0	$26775_1 = \chi_{59}, \varphi_{55}$
	10	0	$2975_2 = \chi_{21}, \varphi_{21}$		27	0	$26775_2 = \chi_{60}, \varphi_{56}$
	11	0	$3400_1 = \chi_{24}, \varphi_{24}$		28	0	$34425_1 = \chi_{67}, \varphi_{62}$
	12	1	5×4		29	0	$34425_2 = \chi_{68}, \varphi_{61}$
	13	0	$4200_1 = \chi_{29}, \varphi_{28}$		30	0	$42525_1 = \chi_{72}, \varphi_{64}$
	14	0	$5950_1 = \chi_{32}, \varphi_{31}$		31	0	$42525_2 = \chi_{73}, \varphi_{65}$
	15	0	$5950_2 = \chi_{33}, \varphi_{32}$		32	0	$47600_1 = \chi_{75}, \varphi_{66}$
	16	0	$8925_1 = \chi_{36}, \varphi_{37}$		33	0	$53550_1 = \chi_{78}, \varphi_{67}$
	17	0	$8925_2 = \chi_{37}, \varphi_{36}$		34	0	$68850_1 = \chi_{81}, \varphi_{68}$

Block 1:	φ_1	φ_3	φ_5	φ_7	φ_{11}	φ_{13}	φ_{17}	φ_{19}	φ_{20}	φ_{23}	φ_{29}	φ_{35}	φ_{52}	φ_{57}
$1_1 = \chi_1$	1	.	.	.	.	.	.	.	.	.	.	.	.	.
$51_1 = \chi_3$	.	1	.	.	.	.	.	.	.	.	.	.	.	.
$119_1 = \chi_5$	1	.	1	.	.	.	.	.	.	.	.	.	.	.
$238_1 = \chi_7$	.	.	.	1	.	.	.	.	.	.	.	.	.	.
$918_1 = \chi_{11}$	1	1	.	.	1	.	.	.	.	.	.	.	.	.
$1512_1 = \chi_{14}$	.	.	.	1	.	1	.	.	.	.	.	.	.	.
$2856_1 = \chi_{18}$	.	.	1	.	.	.	.	.	1	.	.	.	.	.
$2856_2 = \chi_{19}$	.	1	.	.	1	.	1	.	.	.	.	.	.	.
$3213_1 = \chi_{22}$	.	.	.	.	.	.	.	.	.	1	.	.	.	.
$3213_2 = \chi_{23}$	.	.	.	.	.	1	1	.	.	.	.	.	.	.
$3808_1 = \chi_{28}$	.	.	.	.	.	1	.	1	.	.	.	.	.	.
$5712_1 = \chi_{31}$	1	.	1	.	1	.	.	.	.	.	1	.	.	.
$9639_1 = \chi_{39}$	.	.	.	.	.	.	.	1	.	.	.	1	.	.
$13056_1 = \chi_{43}$	.	.	.	.	.	.	.	.	1	1	.	1	.	.
$14688_1 = \chi_{47}$	.	.	1	.	.	.	.	.	1	.	1	1	.	.
$28917_1 = \chi_{62}$	.	.	.	1	.	1	1	1	.	.	.	.	1	.
$30464_1 = \chi_{63}$	.	.	.	.	1	.	1	.	.	.	1	.	1	.
$38556_1 = \chi_{71}$	.	.	.	.	.	.	.	.	.	1	.	1	.	1
$51408_1 = \chi_{77}$	.	.	.	1	.	.	.	.	.	.	.	.	1	1
$65536_1 = \chi_{80}$	.	.	.	.	.	.	.	1	.	.	1	1	1	1

$$\begin{array}{ll}
\varphi_1 = 1_1 & \varphi_{19} = 2534_1 \\
\varphi_3 = 51_1 & \varphi_{20} = 2738_1 \\
\varphi_5 = 118_1 & \varphi_{23} = 3213_1 \\
\varphi_7 = 238_1 & \varphi_{29} = 4727_1 \\
\varphi_{11} = 866_1 & \varphi_{35} = 7105_2 \\
\varphi_{13} = 1274_1 & \varphi_{52} = 22932_1 \\
\varphi_{17} = 1939_1 & \varphi_{57} = 28238_1
\end{array}$$

Block 2:	φ_2	φ_8	φ_{48}	φ_{51}	
$35_1 = \chi_2$	1	.	.	.	$\varphi_2 = 35_1$
$510_1 = \chi_8$	.	1	.	.	$\varphi_8 = 510_1$
$16065_3 = \chi_{50}$	1	.	1	.	$\varphi_{48} = 16030_1$
$19040_1 = \chi_{56}$	.	1	.	1	$\varphi_{51} = 18530_1$
$34560_1 = \chi_{69}$	.	.	1	1	

Block 3:	φ_4	φ_{30}	φ_{33}	φ_{40}	
$85_1 = \chi_4$	1	.	.	.	$\varphi_4 = 85_1$
$4760_1 = \chi_{30}$	.	1	.	.	$\varphi_{30} = 4760_1$
$7140_1 = \chi_{34}$	1	.	1	.	$\varphi_{33} = 7055_1$
$16065_1 = \chi_{48}$	.	1	.	1	$\varphi_{40} = 11305_1$
$18360_1 = \chi_{55}$	.	.	1	1	

Block 4:	φ_6	φ_{12}	φ_{34}	φ_{38}	
$135_1 = \chi_6$	1	.	.	.	$\varphi_6 = 135_1$
$1190_1 = \chi_{12}$	1	1	.	.	$\varphi_{12} = 1055_1$
$8160_1 = \chi_{35}$	.	1	1	.	$\varphi_{34} = 7105_1$
$8960_1 = \chi_{38}$	.	.	.	1	$\varphi_{38} = 8960_1$
$16065_4 = \chi_{51}$	.	.	1	1	

Block 5:	φ_{10}	φ_{18}	φ_{43}	φ_{60}	
$595_1 = \chi_9$	1	.	.	.	$\varphi_{10} = 595_2$
$2295_1 = \chi_{17}$	.	1	.	.	$\varphi_{18} = 2295_1$
$14280_2 = \chi_{46}$	.	1	1	.	$\varphi_{43} = 11985_1$
$32130_2 = \chi_{65}$	1	.	.	1	$\varphi_{60} = 31535_1$
$43520_1 = \chi_{74}$	.	.	1	1	

Block 6:	φ_9	φ_{26}	φ_{45}	φ_{63}
$595_2 = \chi_{10}$	1	.	.	.
$3570_1 = \chi_{25}$	.	1	.	.
$14280_1 = \chi_{45}$	1	.	1	.
$38080_1 = \chi_{70}$	.	1	.	1
$48195_1 = \chi_{76}$	.	.	1	1

$$\begin{aligned}
\varphi_9 &= 595_1 \\
\varphi_{26} &= 3570_2 \\
\varphi_{45} &= 13685_1 \\
\varphi_{63} &= 34510_1
\end{aligned}$$

Block 8:	φ_{15}	φ_{16}	φ_{46}	φ_{47}
$1785_1 = \chi_{15}$	1	.	.	.
$1785_2 = \chi_{16}$	.	1	.	.
$16065_2 = \chi_{49}$	.	1	.	1
$16065_5 = \chi_{52}$	1	.	1	.
$28560_1 = \chi_{61}$	.	.	1	1

$$\begin{aligned}
\varphi_{15} &= 1785_1 \\
\varphi_{16} &= 1785_2 \\
\varphi_{46} &= 14280_1 \\
\varphi_{47} &= 14280_2
\end{aligned}$$

Block 12:	φ_{25}	φ_{27}	φ_{58}	φ_{59}
$3570_2 = \chi_{26}$	.	1	.	.
$3570_3 = \chi_{27}$	1	.	.	.
$32130_1 = \chi_{64}$	.	1	.	1
$32130_3 = \chi_{66}$	1	.	1	.
$57120_1 = \chi_{79}$	.	.	1	1

$$\begin{aligned}
\varphi_{25} &= 3570_1 \\
\varphi_{27} &= 3570_3 \\
\varphi_{58} &= 28560_1 \\
\varphi_{59} &= 28560_2
\end{aligned}$$