

## $L_2(81) \pmod{41}$

	blocks	defect	matrix
$G :$	1	1	$22 \times 2$
	2	0	$41_1 = \chi_2, \varphi_2$
	3	0	$41_2 = \chi_3, \varphi_3$
	4	0	$82_1 = \chi_{25}, \varphi_5$
	5	0	$82_2 = \chi_{26}, \varphi_6$
	6	0	$82_3 = \chi_{27}, \varphi_7$
	7	0	$82_4 = \chi_{28}, \varphi_8$
	8	0	$82_5 = \chi_{29}, \varphi_9$
	9	0	$82_6 = \chi_{30}, \varphi_{10}$
	10	0	$82_7 = \chi_{31}, \varphi_{11}$
	11	0	$82_8 = \chi_{32}, \varphi_{12}$
	12	0	$82_9 = \chi_{33}, \varphi_{13}$
	13	0	$82_{10} = \chi_{34}, \varphi_{14}$
	14	0	$82_{11} = \chi_{35}, \varphi_{15}$
	15	0	$82_{12} = \chi_{36}, \varphi_{16}$
	16	0	$82_{13} = \chi_{37}, \varphi_{17}$
	17	0	$82_{14} = \chi_{38}, \varphi_{18}$
	18	0	$82_{15} = \chi_{39}, \varphi_{19}$
	19	0	$82_{16} = \chi_{40}, \varphi_{20}$
	20	0	$82_{17} = \chi_{41}, \varphi_{21}$
	21	0	$82_{18} = \chi_{42}, \varphi_{22}$
	22	0	$82_{19} = \chi_{43}, \varphi_{23}$

	blocks	defect	matrix
$2.G :$	23	1	$22 \times 2$
	24	0	$82_{20} = \chi_{66}, \varphi_{26}$
	25	0	$82_{21} = \chi_{67}, \varphi_{27}$
	26	0	$82_{22} = \chi_{68}, \varphi_{28}$
	27	0	$82_{23} = \chi_{69}, \varphi_{29}$
	28	0	$82_{24} = \chi_{70}, \varphi_{30}$
	29	0	$82_{25} = \chi_{71}, \varphi_{31}$
	30	0	$82_{26} = \chi_{72}, \varphi_{32}$
	31	0	$82_{27} = \chi_{73}, \varphi_{33}$
	32	0	$82_{28} = \chi_{74}, \varphi_{35}$
	33	0	$82_{29} = \chi_{75}, \varphi_{34}$
	34	0	$82_{30} = \chi_{76}, \varphi_{37}$
	35	0	$82_{31} = \chi_{77}, \varphi_{36}$
	36	0	$82_{32} = \chi_{78}, \varphi_{38}$
	37	0	$82_{33} = \chi_{79}, \varphi_{39}$
	38	0	$82_{34} = \chi_{80}, \varphi_{40}$
	39	0	$82_{35} = \chi_{81}, \varphi_{41}$
	40	0	$82_{36} = \chi_{82}, \varphi_{43}$
	41	0	$82_{37} = \chi_{83}, \varphi_{42}$
	42	0	$82_{38} = \chi_{84}, \varphi_{45}$
	43	0	$82_{39} = \chi_{85}, \varphi_{44}$

<b>Block 1:</b>	$\varphi_1$	$\varphi_4$
$1_1 = \chi_1$	1	.
$80_1 = \chi_4$	.	1
$80_2 = \chi_5$	.	1
$80_3 = \chi_6$	.	1
$80_4 = \chi_7$	.	1
$80_5 = \chi_8$	.	1
$80_6 = \chi_9$	.	1
$80_7 = \chi_{10}$	.	1
$80_8 = \chi_{11}$	.	1
$80_9 = \chi_{12}$	.	1
$80_{10} = \chi_{13}$	.	1
$80_{11} = \chi_{14}$	.	1
$80_{12} = \chi_{15}$	.	1
$80_{13} = \chi_{16}$	.	1
$80_{14} = \chi_{17}$	.	1
$80_{15} = \chi_{18}$	.	1
$80_{16} = \chi_{19}$	.	1
$80_{17} = \chi_{20}$	.	1
$80_{18} = \chi_{21}$	.	1
$80_{19} = \chi_{22}$	.	1
$80_{20} = \chi_{23}$	.	1
$81_1 = \chi_{24}$	1	1

$$\begin{aligned} \varphi_1 &= 1_1 \\ \varphi_4 &= 80_1 \end{aligned}$$

<b>Block 23:</b>	$\varphi_{24}$	$\varphi_{25}$	
$40_1 = \chi_{44}$	1	.	
$40_2 = \chi_{45}$	.	1	
$80_{21} = \chi_{46}$	1	1	
$80_{22} = \chi_{47}$	1	1	
$80_{23} = \chi_{48}$	1	1	
$80_{24} = \chi_{49}$	1	1	
$80_{25} = \chi_{50}$	1	1	
$80_{26} = \chi_{51}$	1	1	
$80_{27} = \chi_{52}$	1	1	
$80_{28} = \chi_{53}$	1	1	$\varphi_{24} = 40_1$
$80_{29} = \chi_{54}$	1	1	$\varphi_{25} = 40_2$
$80_{30} = \chi_{55}$	1	1	
$80_{31} = \chi_{56}$	1	1	
$80_{32} = \chi_{57}$	1	1	
$80_{33} = \chi_{58}$	1	1	
$80_{34} = \chi_{59}$	1	1	
$80_{35} = \chi_{60}$	1	1	
$80_{36} = \chi_{61}$	1	1	
$80_{37} = \chi_{62}$	1	1	
$80_{38} = \chi_{63}$	1	1	
$80_{39} = \chi_{64}$	1	1	
$80_{40} = \chi_{65}$	1	1	