

$$L_4(3) \pmod{2}$$

|       | blocks             | defect | matrix        |
|-------|--------------------|--------|---------------|
| 2.G : | 1                  | 8      | $35 \times 7$ |
|       | 2                  | 3      | $8 \times 1$  |
|       | 3                  | 1      | $2 \times 1$  |
|       | $4 = \overline{3}$ | 1      | $2 \times 1$  |
|       | 5                  | 1      | $2 \times 1$  |
|       | $6 = \overline{5}$ | 1      | $2 \times 1$  |

| <b>Block 1:</b>      | $\varphi_1$ | $\varphi_2$ | $\varphi_3$ | $\varphi_4$ | $\varphi_5$ | $\varphi_6$ | $\varphi_7$ |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| $1_1 = \chi_1$       | 1           | .           | .           | .           | .           | .           | .           |
| $26_1 = \chi_2$      | .           | 1           | .           | .           | .           | .           | .           |
| $26_2 = \chi_3$      | .           | .           | 1           | .           | .           | .           | .           |
| $39_1 = \chi_4$      | 1           | .           | .           | 1           | .           | .           | .           |
| $52_1 = \chi_5$      | .           | 1           | 1           | .           | .           | .           | .           |
| $65_1 = \chi_6$      | 1           | 1           | .           | 1           | .           | .           | .           |
| $65_2 = \chi_7$      | 1           | .           | 1           | 1           | .           | .           | .           |
| $90_1 = \chi_8$      | .           | 1           | 1           | 1           | .           | .           | .           |
| $234_1 = \chi_9$     | .           | .           | 1           | .           | .           | 1           | .           |
| $234_2 = \chi_{10}$  | .           | 1           | .           | .           | 1           | .           | .           |
| $260_1 = \chi_{11}$  | .           | 1           | 1           | .           | .           | 1           | .           |
| $260_2 = \chi_{12}$  | .           | 1           | 1           | .           | 1           | .           | .           |
| $260_3 = \chi_{13}$  | .           | .           | .           | .           | .           | .           | 1           |
| $351_1 = \chi_{14}$  | 1           | 1           | 1           | 1           | .           | .           | 1           |
| $390_1 = \chi_{15}$  | 2           | 1           | 1           | 2           | .           | .           | 1           |
| $468_1 = \chi_{20}$  | .           | 1           | 1           | .           | 1           | 1           | .           |
| $585_1 = \chi_{21}$  | 1           | 2           | 1           | 1           | 1           | .           | 1           |
| $585_2 = \chi_{22}$  | 1           | 1           | 2           | 1           | .           | 1           | 1           |
| $729_1 = \chi_{27}$  | 1           | 1           | 1           | .           | 1           | 1           | 1           |
| $780_1 = \chi_{28}$  | .           | 2           | 2           | .           | 1           | 1           | 1           |
| $1040_1 = \chi_{29}$ | .           | 2           | 2           | .           | 1           | 1           | 2           |
| $40_1 = \chi_{30}$   | 2           | .           | .           | 1           | .           | .           | .           |
| $208_1 = \chi_{31}$  | .           | .           | .           | .           | 1           | .           | .           |
| $208_2 = \chi_{32}$  | .           | .           | .           | .           | 1           | .           | .           |
| $208_3 = \chi_{33}$  | .           | .           | .           | .           | .           | 1           | .           |
| $208_4 = \chi_{34}$  | .           | .           | .           | .           | .           | 1           | .           |
| $260_4 = \chi_{35}$  | .           | .           | .           | .           | .           | .           | 1           |
| $260_5 = \chi_{36}$  | .           | .           | .           | .           | .           | .           | 1           |
| $480_1 = \chi_{41}$  | 2           | 2           | 2           | 3           | .           | .           | 1           |
| $520_1 = \chi_{42}$  | .           | 2           | 2           | .           | 1           | 1           | .           |
| $520_2 = \chi_{43}$  | .           | 2           | .           | .           | 1           | .           | 1           |
| $520_3 = \chi_{44}$  | .           | .           | 2           | .           | .           | 1           | 1           |
| $780_2 = \chi_{49}$  | .           | 2           | 2           | .           | 1           | 1           | 1           |
| $780_3 = \chi_{50}$  | .           | 2           | 2           | .           | 1           | 1           | 1           |
| $1080_1 = \chi_{51}$ | 2           | 2           | 2           | 1           | 1           | 1           | 2           |

$$\begin{aligned}
\varphi_1 &= 1_1 \\
\varphi_2 &= 26_1 \\
\varphi_3 &= 26_2 \\
\varphi_4 &= 38_1 \\
\varphi_5 &= 208_1 \\
\varphi_6 &= 208_2 \\
\varphi_7 &= 260_1
\end{aligned}$$

| <b>Block 2:</b>     | $\varphi_8$ |
|---------------------|-------------|
| $416_1 = \chi_{16}$ | 1           |
| $416_2 = \chi_{17}$ | 1           |
| $416_3 = \chi_{18}$ | 1           |
| $416_4 = \chi_{19}$ | 1           |
| $416_5 = \chi_{37}$ | 1           |
| $416_6 = \chi_{38}$ | 1           |
| $416_7 = \chi_{39}$ | 1           |
| $416_8 = \chi_{40}$ | 1           |

$$\varphi_8 = 416_1$$

| <b>Block 3:</b>     | $\varphi_9$ |
|---------------------|-------------|
| $640_1 = \chi_{23}$ | 1           |
| $640_5 = \chi_{45}$ | 1           |

$$\varphi_9 = 640_1$$

| <b>Block 4:</b>     | $\varphi_{10}$ |
|---------------------|----------------|
| $640_2 = \chi_{24}$ | 1              |
| $640_6 = \chi_{46}$ | 1              |

$$\varphi_{10} = 640_2$$

| <b>Block 5:</b>     | $\varphi_{11}$ |
|---------------------|----------------|
| $640_3 = \chi_{25}$ | 1              |
| $640_7 = \chi_{47}$ | 1              |

$$\varphi_{11} = 640_3$$

| <b>Block 6:</b>     | $\varphi_{12}$ |
|---------------------|----------------|
| $640_4 = \chi_{26}$ | 1              |
| $640_8 = \chi_{48}$ | 1              |

$$\varphi_{12} = 640_4$$