

# $U_3(8).2 \pmod{3}$

|         | blocks | defect | matrix        |
|---------|--------|--------|---------------|
| $3.G :$ | 1      | 5      | $29 \times 7$ |
|         | 2      | 2      | $6 \times 2$  |
|         | 3      | 2      | $6 \times 2$  |
|         | 4      | 2      | $6 \times 2$  |
|         | 5      | 1      | $3 \times 1$  |
|         | 6      | 1      | $3 \times 1$  |
|         | 7      | 1      | $3 \times 1$  |

| Block 1:              | $\varphi_{1,0}$ | $\varphi_{1,1}$ | $\varphi_{2,0}$ | $\varphi_{2,1}$ | $\varphi_{3,0}$ | $\varphi_{3,1}$ | $\varphi_{4+}$ |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| $1_1 = \chi_{1,0}$    | 1               | .               | .               | .               | .               | .               | .              |
| $1_2 = \chi_{1,1}$    | .               | 1               | .               | .               | .               | .               | .              |
| $56_1 = \chi_{2,0}$   | .               | .               | 1               | .               | .               | .               | .              |
| $56_2 = \chi_{2,1}$   | .               | .               | .               | 1               | .               | .               | .              |
| $114_1 = \chi_{3+}$   | 1               | 1               | 1               | 1               | .               | .               | .              |
| $133_1 = \chi_{5,0}$  | .               | .               | .               | .               | 1               | .               | .              |
| $133_2 = \chi_{5,1}$  | .               | .               | .               | .               | .               | 1               | .              |
| $266_1 = \chi_{6+}$   | .               | .               | .               | .               | .               | .               | 1              |
| $399_1 = \chi_{8,0}$  | .               | .               | .               | .               | 1               | .               | 1              |
| $399_2 = \chi_{8,1}$  | .               | .               | .               | .               | .               | 1               | 1              |
| $399_3 = \chi_{9,0}$  | .               | .               | .               | .               | 1               | .               | 1              |
| $399_4 = \chi_{9,1}$  | .               | .               | .               | .               | .               | 1               | 1              |
| $399_5 = \chi_{10,0}$ | .               | .               | .               | .               | 1               | .               | 1              |
| $399_6 = \chi_{10,1}$ | .               | .               | .               | .               | .               | 1               | 1              |
| $912_1 = \chi_{11+}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2              |
| $512_1 = \chi_{13,0}$ | 1               | .               | 1               | 1               | 1               | .               | 1              |
| $512_2 = \chi_{13,1}$ | .               | 1               | 1               | 1               | .               | 1               | 1              |
| $114_2 = \chi_{29+}$  | 1               | 1               | 1               | 1               | .               | .               | .              |
| $114_3 = \chi_{30+}$  | 1               | 1               | 1               | 1               | .               | .               | .              |
| $114_4 = \chi_{31+}$  | 1               | 1               | 1               | 1               | .               | .               | .              |
| $378_1 = \chi_{32+}$  | .               | .               | 1               | 1               | 1               | 1               | .              |
| $378_2 = \chi_{33+}$  | .               | .               | 1               | 1               | .               | .               | 1              |
| $378_3 = \chi_{34+}$  | .               | .               | 1               | 1               | .               | .               | 1              |
| $798_1 = \chi_{35+}$  | .               | .               | .               | .               | 1               | 1               | 2              |
| $798_2 = \chi_{36+}$  | .               | .               | .               | .               | 1               | 1               | 2              |
| $798_3 = \chi_{37+}$  | .               | .               | .               | .               | 1               | 1               | 2              |
| $912_2 = \chi_{38+}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2              |
| $912_3 = \chi_{39+}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2              |
| $912_4 = \chi_{40+}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2              |

$$\begin{aligned}
 \varphi_{1,0} &= 1_1 \\
 \varphi_{1,1} &= 1_2 \\
 \varphi_{2,0} &= 56_1 \\
 \varphi_{2,1} &= 56_2 \\
 \varphi_{3,0} &= 133_1 \\
 \varphi_{3,1} &= 133_2 \\
 \varphi_{4+} &= 266_1
 \end{aligned}$$

| <b>Block 2:</b>          | $\varphi_{6,0}$ | $\varphi_{6,1}$ |                         |  |
|--------------------------|-----------------|-----------------|-------------------------|--|
| $513_1 = \chi_{14,0}$    | 1               | .               |                         |  |
| $513_2 = \chi_{14,1}$    | .               | 1               |                         |  |
| $1026_1 = \chi_{17+}$    | 1               | 1               | $\varphi_{6,0} = 513_1$ |  |
|                          |                 |                 | $\varphi_{6,1} = 513_2$ |  |
| $1026_4 = \chi_{41+}$    | 1               | 1               |                         |  |
| $1026_9 = \chi_{46+}$    | 1               | 1               |                         |  |
| $1026_{11} = \chi_{48+}$ | 1               | 1               |                         |  |

| <b>Block 3:</b>          | $\varphi_{7,0}$ | $\varphi_{7,1}$ |                         |  |
|--------------------------|-----------------|-----------------|-------------------------|--|
| $513_3 = \chi_{15,0}$    | 1               | .               |                         |  |
| $513_4 = \chi_{15,1}$    | .               | 1               |                         |  |
| $1026_2 = \chi_{19+}$    | 1               | 1               | $\varphi_{7,0} = 513_3$ |  |
|                          |                 |                 | $\varphi_{7,1} = 513_4$ |  |
| $1026_5 = \chi_{42+}$    | 1               | 1               |                         |  |
| $1026_7 = \chi_{44+}$    | 1               | 1               |                         |  |
| $1026_{12} = \chi_{49+}$ | 1               | 1               |                         |  |

| <b>Block 4:</b>          | $\varphi_{8,0}$ | $\varphi_{8,1}$ |                         |  |
|--------------------------|-----------------|-----------------|-------------------------|--|
| $513_5 = \chi_{16,0}$    | 1               | .               |                         |  |
| $513_6 = \chi_{16,1}$    | .               | 1               |                         |  |
| $1026_3 = \chi_{21+}$    | 1               | 1               | $\varphi_{8,0} = 513_5$ |  |
|                          |                 |                 | $\varphi_{8,1} = 513_6$ |  |
| $1026_6 = \chi_{43+}$    | 1               | 1               |                         |  |
| $1026_8 = \chi_{45+}$    | 1               | 1               |                         |  |
| $1026_{10} = \chi_{47+}$ | 1               | 1               |                         |  |

| <b>Block 5:</b>       | $\varphi_{9+}$ |  |  |
|-----------------------|----------------|--|--|
| $1134_1 = \chi_{23+}$ | 1              |  |  |
| $1134_4 = \chi_{50+}$ | 1              |  |  |
| $1134_5 = \chi_{51+}$ | 1              |  |  |

$\varphi_{9+} = 1134_1$

| <b>Block 6:</b>       | $\varphi_{11+}$ |
|-----------------------|-----------------|
| $1134_2 = \chi_{25+}$ | 1               |
| $1134_6 = \chi_{52+}$ | 1               |
| $1134_7 = \chi_{53+}$ | 1               |

$$\varphi_{11+} = 1134_2$$

| <b>Block 7:</b>       | $\varphi_{13+}$ |
|-----------------------|-----------------|
| $1134_3 = \chi_{27+}$ | 1               |
| $1134_8 = \chi_{54+}$ | 1               |
| $1134_9 = \chi_{55+}$ | 1               |

$$\varphi_{13+} = 1134_3$$