

## $O_8^+(2).2 \pmod{7}$

	blocks	defect	matrix
$G :$	1	1	$7 \times 6$
	2	1	$7 \times 6$
	3	0	$28_1 = \chi_{2,0}, \varphi_{2,0}$
	4	0	$28_2 = \chi_{2,1}, \varphi_{2,1}$
	5	0	$35_1 = \chi_{3,0}, \varphi_{3,0}$
	6	0	$35_2 = \chi_{3,1}, \varphi_{3,1}$
	7	0	$70_1 = \chi_{4+}, \varphi_{4+}$
	8	0	$84_1 = \chi_{7,0}, \varphi_{7,0}$
	9	0	$84_2 = \chi_{7,1}, \varphi_{7,1}$
	10	0	$168_1 = \chi_{8+}, \varphi_{8+}$
	11	0	$175_1 = \chi_{10,0}, \varphi_{10,0}$
	12	0	$175_2 = \chi_{10,1}, \varphi_{10,1}$
	13	0	$210_1 = \chi_{11,0}, \varphi_{11,0}$
	14	0	$210_2 = \chi_{11,1}, \varphi_{11,1}$
	15	0	$420_1 = \chi_{12+}, \varphi_{12+}$
	16	0	$350_1 = \chi_{15,0}, \varphi_{15,0}$
	17	0	$350_2 = \chi_{15,1}, \varphi_{15,1}$
	18	0	$525_1 = \chi_{16,0}, \varphi_{16,0}$
	19	0	$525_2 = \chi_{16,1}, \varphi_{16,1}$
	20	0	$567_1 = \chi_{17,0}, \varphi_{17,0}$
	21	0	$567_2 = \chi_{17,1}, \varphi_{17,1}$
	22	0	$1134_1 = \chi_{18+}, \varphi_{18+}$
	23	0	$700_1 = \chi_{20,0}, \varphi_{20,0}$
	24	0	$700_2 = \chi_{20,1}, \varphi_{20,1}$
	25	0	$700_3 = \chi_{21,0}, \varphi_{21,0}$
	26	0	$700_4 = \chi_{21,1}, \varphi_{21,1}$
	27	0	$1400_1 = \chi_{22+}, \varphi_{22+}$
	28	0	$840_1 = \chi_{24,0}, \varphi_{24,0}$
	29	0	$840_2 = \chi_{24,1}, \varphi_{24,1}$
	30	0	$1680_1 = \chi_{25+}, \varphi_{25+}$
	31	0	$1050_1 = \chi_{28,0}, \varphi_{28,0}$
	32	0	$1050_2 = \chi_{28,1}, \varphi_{28,1}$
	33	0	$2100_1 = \chi_{29+}, \varphi_{29+}$
	34	0	$1344_1 = \chi_{31,0}, \varphi_{31,0}$
	35	0	$1344_2 = \chi_{31,1}, \varphi_{31,1}$
	36	0	$2688_1 = \chi_{32+}, \varphi_{32+}$
	37	0	$1400_2 = \chi_{34,0}, \varphi_{34,0}$
	38	0	$1400_3 = \chi_{34,1}, \varphi_{34,1}$
	39	0	$1575_1 = \chi_{35,0}, \varphi_{35,0}$
	40	0	$1575_2 = \chi_{35,1}, \varphi_{35,1}$

	blocks	defect	matrix
	41	0	$3150_1 = \chi_{36+}, \varphi_{36+}$
	42	0	$2100_2 = \chi_{38,0}, \varphi_{38,0}$
	43	0	$2100_3 = \chi_{38,1}, \varphi_{38,1}$
	44	0	$4200_1 = \chi_{39+}, \varphi_{39+}$
	45	0	$2240_1 = \chi_{41,0}, \varphi_{41,0}$
	46	0	$2240_2 = \chi_{41,1}, \varphi_{41,1}$
	47	0	$4480_1 = \chi_{42+}, \varphi_{42+}$
	48	0	$2268_1 = \chi_{44,0}, \varphi_{44,0}$
	49	0	$2268_2 = \chi_{44,1}, \varphi_{44,1}$
	50	0	$4536_1 = \chi_{45+}, \varphi_{45+}$
	51	0	$2835_1 = \chi_{47,0}, \varphi_{48,0}$
	52	0	$2835_2 = \chi_{47,1}, \varphi_{48,1}$
	53	0	$5670_1 = \chi_{48+}, \varphi_{49+}$
	54	0	$4200_2 = \chi_{52,0}, \varphi_{52,0}$
	55	0	$4200_3 = \chi_{52,1}, \varphi_{52,1}$
$2.G :$	56	1	$7 \times 6$
	57	1	$7 \times 6$
	58	0	$56_1 = \chi_{55,0}, \varphi_{54,0}$
	59	0	$56_2 = \chi_{55,1}, \varphi_{54,1}$
	60	0	$112_1 = \chi_{56,0}, \varphi_{55,0}$
	61	0	$112_2 = \chi_{56,1}, \varphi_{55,1}$
	62	0	$448_1 = \chi_{58+}, \varphi_{57+}$
	63	0	$448_2 = \chi_{61,0}, \varphi_{60,0}$
	64	0	$448_3 = \chi_{61,1}, \varphi_{60,1}$
	65	0	$560_1 = \chi_{62,0}, \varphi_{61,0}$
	66	0	$560_2 = \chi_{62,1}, \varphi_{61,1}$
	67	0	$1344_3 = \chi_{63+}, \varphi_{62+}$
	68	0	$840_3 = \chi_{65,0}, \varphi_{64,0}$
	69	0	$840_4 = \chi_{65,1}, \varphi_{64,1}$
	70	0	$1008_1 = \chi_{66,0}, \varphi_{65,0}$
71	0	$1008_2 = \chi_{66,1}, \varphi_{65,1}$	
72	0	$2016_1 = \chi_{67+}, \varphi_{66+}$	
73	0	$1400_4 = \chi_{70,0}, \varphi_{70,0}$	
74	0	$1400_5 = \chi_{70,1}, \varphi_{70,1}$	
75	0	$1400_6 = \chi_{71,0}, \varphi_{71,0}$	
76	0	$1400_7 = \chi_{71,1}, \varphi_{71,1}$	
77	0	$2800_1 = \chi_{73,0}, \varphi_{72,0}$	
78	0	$2800_2 = \chi_{73,1}, \varphi_{72,1}$	
79	0	$5600_1 = \chi_{74+}, \varphi_{73+}$	
80	0	$3360_1 = \chi_{77,0}, \varphi_{76,0}$	

	blocks	defect	matrix
	81	0	$3360_2 = \chi_{77,1}, \varphi_{76,1}$
	82	0	$7168_1 = \chi_{78+}, \varphi_{77+}$
	83	0	$4200_4 = \chi_{81,0}, \varphi_{79,0}$
	84	0	$4200_5 = \chi_{81,1}, \varphi_{79,1}$
	85	0	$4536_2 = \chi_{82,0}, \varphi_{80,0}$
	86	0	$4536_3 = \chi_{82,1}, \varphi_{80,1}$
	87	0	$5600_2 = \chi_{83,0}, \varphi_{81,0}$
	88	0	$5600_3 = \chi_{83,1}, \varphi_{81,1}$

<b>Block 1:</b>	$\varphi_{1,0}$	$\varphi_{6,1}$	$\varphi_{14,0}$	$\varphi_{27,1}$	$\varphi_{47,1}$	$\varphi_{51,0}$	
$1_1 = \chi_{1,0}$	1	.	.	.	.	.	$\varphi_{1,0} = 1_1$
$50_2 = \chi_{6,1}$	.	1	.	.	.	.	$\varphi_{6,1} = 50_2$
$300_1 = \chi_{14,0}$	1	.	1	.	.	.	$\varphi_{14,0} = 299_1$
$972_2 = \chi_{27,1}$	.	1	.	1	.	.	$\varphi_{27,1} = 922_2$
$3200_2 = \chi_{50,1}$	.	.	.	1	1	.	$\varphi_{47,1} = 2278_2$
$4096_1 = \chi_{51,0}$	.	.	1	.	.	1	$\varphi_{51,0} = 3797_1$
$6075_1 = \chi_{53,0}$	.	.	.	.	1	1	

<b>Block 2:</b>	$\varphi_{1,1}$	$\varphi_{6,0}$	$\varphi_{14,1}$	$\varphi_{27,0}$	$\varphi_{47,0}$	$\varphi_{51,1}$	
$1_2 = \chi_{1,1}$	1	.	.	.	.	.	$\varphi_{1,1} = 1_2$
$50_1 = \chi_{6,0}$	.	1	.	.	.	.	$\varphi_{6,0} = 50_1$
$300_2 = \chi_{14,1}$	1	.	1	.	.	.	$\varphi_{14,1} = 299_2$
$972_1 = \chi_{27,0}$	.	1	.	1	.	.	$\varphi_{27,0} = 922_1$
$3200_1 = \chi_{50,0}$	.	.	.	1	1	.	$\varphi_{47,0} = 2278_1$
$4096_2 = \chi_{51,1}$	.	.	1	.	.	1	$\varphi_{51,1} = 3797_2$
$6075_2 = \chi_{53,1}$	.	.	.	.	1	1	

<b>Block 56:</b>	$\varphi_{53,0}$	$\varphi_{56,0}$	$\varphi_{59,1}$	$\varphi_{68,0}$	$\varphi_{69,1}$	$\varphi_{75,1}$	
$8_1 = \chi_{54,0}$	1	.	.	.	.	.	$\varphi_{53,0} = 8_1$
$160_1 = \chi_{57,0}$	1	1	.	.	.	.	$\varphi_{56,0} = 152_1$
$400_2 = \chi_{60,1}$	.	.	1	.	.	.	$\varphi_{59,1} = 400_2$
$1296_1 = \chi_{69,0}$	.	1	.	1	.	.	$\varphi_{68,0} = 1144_1$
$2400_1 = \chi_{72,0}$	.	.	.	1	1	.	$\varphi_{69,1} = 1256_2$
$3240_2 = \chi_{76,1}$	.	.	1	.	.	1	$\varphi_{75,1} = 2840_2$
$4096_4 = \chi_{80,1}$	.	.	.	.	1	1	

<b>Block 57:</b>	$\varphi_{53,1}$	$\varphi_{56,1}$	$\varphi_{59,0}$	$\varphi_{68,1}$	$\varphi_{69,0}$	$\varphi_{75,0}$
$8_2 = \chi_{54,1}$	1	.	.	.	.	.
$160_2 = \chi_{57,1}$	1	1	.	.	.	.
$400_1 = \chi_{60,0}$	.	.	1	.	.	.
$1296_2 = \chi_{69,1}$	.	1	.	1	.	.
$2400_2 = \chi_{72,1}$	.	.	.	1	1	.
$3240_1 = \chi_{76,0}$	.	.	1	.	.	1
$4096_3 = \chi_{80,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{53,1} &= 8_2 \\ \varphi_{56,1} &= 152_2 \\ \varphi_{59,0} &= 400_1 \\ \varphi_{68,1} &= 1144_2 \\ \varphi_{69,0} &= 1256_1 \\ \varphi_{75,0} &= 2840_1 \end{aligned}$$