

Character Tables of Multiplicity-Free Endomorphism Rings

$$G = (6.Fi_{22}.2)^* \quad (\text{no. } 3)$$

$$H = O_8^+(2) : S_3 \rightarrow ((2.Fi_{22}.2)^*, 3), (3.Fi_{22}.2, 4)$$

rank: 16

degree: 741312

	O_1	O_2	O_3	O_4	O_5	O_6	O_7	O_8	O_9	O_{10}	O_{11}
$1a^+$	1	1	2	2	2	2	2	3150	3150	6300	6300
$1001a^+$	1	1	2	2	-2	-2	-2	-450	450	900	-900
$3080a^+$	1	1	2	2	2	2	2	342	342	684	684
$10725a^-$	1	1	2	2	-2	-2	-2	126	-126	-252	252
$13650a^+$	1	1	2	2	2	2	2	-18	-18	-36	-36
$45045a^+$	1	1	2	2	2	2	2	-18	-18	-36	-36
$50050a^-$	1	1	2	2	-2	-2	-2	-18	18	36	-36
$13728ab$	1	-1	-2	2	0	0	0	0	0	0	0
$48048bc$	1	-1	-2	2	0	0	0	0	0	0	0
$351ab$	1	1	-1	-1	2	-1	-1	750	750	-750	-750
$7722ab$	1	1	-1	-1	-2	1	1	-210	210	-210	210
$19305ab$	1	1	-1	-1	2	-1	-1	78	78	-78	-78
$42120ab$	1	1	-1	-1	2	-1	-1	-42	-42	42	42
$54054ab$	1	1	-1	-1	-2	1	1	30	-30	30	-30
$61776ad$	1	-1	1	-1	0	$1+2z3^{**}$	$1+2z3$	0	0	0	0
$61776bc$	1	-1	1	-1	0	$1+2z3$	$1+2z3^{**}$	0	0	0	0

	O_{12}	O_{13}	O_{14}	O_{15}	O_{16}
$1a^+$	67200	67200	134400	151200	302400
$1001a^+$	2400	2400	-4800	0	0
$3080a^+$	-192	-192	-384	-432	-864
$10725a^-$	672	672	-1344	0	0
$13650a^+$	672	672	1344	-864	-1728
$45045a^+$	-192	-192	-384	288	576
$50050a^-$	-192	-192	384	0	0
$13728ab$	840	-840	0	0	0
$48048bc$	-240	240	0	0	0
$351ab$	0	0	0	7200	-7200
$7722ab$	0	0	0	0	0
$19305ab$	0	0	0	-864	864
$42120ab$	0	0	0	336	-336
$54054ab$	0	0	0	0	0
$61776ad$	0	0	0	0	0
$61776bc$	0	0	0	0	0

$$z3 = (-1 + \sqrt{-3})/2$$

$$z3^{**} = (-1 - \sqrt{-3})/2$$

References

- [Mül08] J. Müller. On the multiplicity-free actions of the sporadic simple groups. *J. Algebra*, 320:910–926, 2008.