MAIN MENU

WEPD – Type I $[82, 41, 14]$

This is a database of known weight enumerator parameters for singly-even binary self-dual $[82, 41, 14]$ codes.

The possible weight enumerators of a singly-even binary self-dual $[82, 41, 14]$ code are given in [3] as

$$\begin{aligned} W_{82,1} &= 1 + 560x^{14} + 60724x^{16} + 233545x^{18} + \cdots, \\ W_{82,2} &= 1 + (3280 + 2\alpha)x^{14} + (36244 - 2\alpha + 128\beta)x^{16} \\ &\quad + (506153 - 26\alpha - 896\beta)x^{18} + \cdots, \\ W_{82,3} &= 1 + (3280 + 2\alpha)x^{14} + (36244 - 2\alpha + 128\beta)x^{16} \\ &\quad + (514345 - 26\alpha - 896\beta)x^{18} + \cdots, \end{aligned}$$

where $\alpha, \beta \in \mathbb{Z}$. A code with weight enumerator $W_{82,1}$ is given in [3, 4].

See the links below for lists of known values of (α, β) for $W_{82,2}$ and $W_{82,3}$.

- $W_{82,2}$ known parameters (from [2, 3])
- $W_{82,3}$ known parameters (from [1–4])

References

[1] S. T. Dougherty, T. A. Gulliver, and M. Harada. Extremal binary self-dual codes. *IEEE Trans. Inform. Theory*, 43(6):2036–2047, 1997. doi: 10.1109/18.641574.

[2] J. Gildea, A. Korban, A. M. Roberts, and A. Tylyshchak. Binary self-dual codes of various lengths with new weight enumerators from a modified bordered construction and neighbours. *Adv. Math. Commun.*, 2022. doi: 10.3934/amc.2022021.

[3] M. Harada. Singly even self-dual codes of length $24k+10$ and minimum weight $4k+2$. *Cryptogr. Commun.*, 11(4):597–608, 2019. doi: 10.1007/s12095-018-0303-8.

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