

WEPD – Type I [84, 42, 14]

This is a database of known weight enumerator parameters for singly-even binary self-dual [84, 42, 14] codes.

The possible weight enumerators of a singly-even binary self-dual [84, 42, 14] code are given in [1, 3] as

$$\begin{aligned}W_{84,1} &= 1 + (4080 - \alpha)x^{14} + 39524x^{16} \\ &\quad + (247264 + 14\alpha)x^{18} + \dots, \\W_{84,2} &= 1 + (4080 - \alpha)x^{14} + (28644 + 64\beta)x^{16} \\ &\quad + (390368 + 14\alpha - 384\beta)x^{18} + \dots, \\W_{84,3} &= 1 + (4080 - \alpha)x^{14} + (28644 + 64\beta)x^{16} \\ &\quad + (394464 + 14\alpha - 384\beta)x^{18} + \dots,\end{aligned}$$

where $\alpha, \beta \in \mathbb{Z}$.

See the links below for lists of known values of (α, β) for $W_{84,1}$, $W_{84,2}$ and $W_{84,3}$.

- [W_{84,1} known parameters](#) (from [2, 3])
- [W_{84,2} known parameters](#) (from [3])
- [W_{84,3} known parameters](#) (from [1])

References

- [1] J. Gildea, A. Korban, and A. M. Roberts. New binary self-dual codes of lengths 80, 84 and 96 from composite matrices. *Des. Codes Cryptogr.*, 90(2):317–342, 2022. doi: [10.1007/s10623-021-00976-3](https://doi.org/10.1007/s10623-021-00976-3).
- [2] T. A. Gulliver and M. Harada. Classification of extremal double circulant self-dual codes of lengths 74–88. *Discrete Math.*, 306(17):2064–2072, 2006. doi: [10.1016/j.disc.2006.05.004](https://doi.org/10.1016/j.disc.2006.05.004).
- [3] N. Yankov, D. Anev, and M. Gürel. Self-dual codes with an automorphism of order 13. *Adv. Math. Commun.*, 11(3):635–645, 2017. doi: [10.3934/amc.2017047](https://doi.org/10.3934/amc.2017047).