WEPD – Type I [96, 48, 16]

This is a database of known weight enumerator parameters for singly-even binary self-dual $[96, 48, 16]$ codes.

The possible weight enumerators of a singly-even binary self-dual $[96, 48, 16]$ code are given in [3] as

$$
\begin{aligned}
W_{96,1}^{\mathrm{I}} = 1 &+ (\alpha - 5814)x^{16} + (97280 + 64\beta)x^{18} \\
&+ (1784320 - 16\alpha - 384\beta)x^{20} \\
&+ (17626112 + 192\beta)x^{22} + \cdots, \\
W_{96,2}^{\mathrm{I}} = 1 &+ (\alpha - 5814)x^{16} + (97280 + 64\beta)x^{18} \\
&+ (1694208 - 16\alpha - 384\beta + 4096\gamma)x^{20} \\
&+ (18969600 + 192\beta - 49152\gamma)x^{22} + \cdots,
\end{aligned}
$$

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

See the links below for lists of known values of (α, β, γ) for $W_{96,1}^{\mathrm{I}}$ and $W_{96,2}^{\mathrm{I}}$.

- $W_{96,1}^{\mathrm{I}}$ known parameters (from [4])
- $W_{96,2}^{\mathrm{I}}$ known parameters (from [1–3])

References

[1] J. Gildea, A. Kaya, A. M. Roberts, R. Taylor, and A. Tylyshchak. New self-dual codes from 2×2 block circulant matrices, group rings and neighbours of neighbours. *Adv. Math. Commun.*, 2021. doi: 10.3934/amc.2021039.

[2] 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.

[3] T. A. Gulliver and M. Harada. On extremal double circulant self-dual codes of lengths 90–96. *Appl. Algebra Engrg. Comm. Comput.*, 30(5):403–415, 2019. doi: 10.1007/s00200-019-00381-3.

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