N = 262 = 2*131

By the Ibukiyama-Kitayama dimension formula,
dim(S_4(K(262))) = 173

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of S_4(K(262))^+ is 48
the nonlift dimension of S_4(K(262))^+ is heuristically 96
dim(S_4(K(262))^+) thus is heuristically 144
dim(S_4(K(262))^-) is heuristically 29

dim(J_{2,262}^{cusp}) = 5 (Skoruppa-Zagier), so need to span to within 4 dimensions

q = 7 for TraceDown
After TD(Grit(J_{4,1834}^{cusp})) and (Grit(J_{2,262}^{cusp}))^2,
spanned rank in S_4(K(262))^+ is 141
spanned rank in S_4(K(262))^- is 0

Hecke operators applied: {{{2, 2}}, {{2, 2}, {2, 1}}}
After Hecke spreading,
spanned rank in S_4(K(262))^- is 16

After Borcherds products,
spanned rank in S_4(K(262))^- is 28

Final spanned rank in S_4(K(262))^+ is 141
Final spanned rank in S_4(K(262))^- is 28

S_2(K(262))^+ is determined by Jacobi restriction and the H4Nd1(3,+) test
(dim(H_4(262,3,1)^+) <= 4 and this is less than dim(J_{2,262}^{cusp})+1 = 6)
S_2(K(262))^- = 0 by Jacobi restriction and the H4Nd1(2,-) test
(dim(H_4(262,2,1)^-) <= 4 and this is less than dim(J_{2,262}^{cusp}) = 5)

So S_2(K(262)) = Grit(J_{2,262}^{cusp}) (dimension 5)