

$$N = 235 = 5 \cdot 47$$

By the Ibukiyama-Kitayama dimension formula,
 $\dim(S_4(K(235))) = 125$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of $S_4(K(235))^+$ is 44
the nonlift dimension of $S_4(K(235))^+$ is heuristically 70
 $\dim(S_4(K(235))^+)$ thus is heuristically 114
 $\dim(S_4(K(235))^-)$ is heuristically 11

$\dim(J_{\{2,235\}}^{\{\text{cusp}\}}) = 6$ (Skoruppa-Zagier), so need to span to within 5 dimensions

$q = 7$ for TraceDown

After TD($\text{Grit}(J_{\{4,1645\}}^{\{\text{cusp}\}})$) and $(\text{Grit}(J_{\{2,235\}}^{\{\text{cusp}\}}))^2$,
spanned rank in $S_4(K(235))^+$ is 114
spanned rank in $S_4(K(235))^-$ is 0

After Borcherds products,
spanned rank in $S_4(K(235))^-$ is 7

Final spanned rank in $S_4(K(235))^+$ is 114

Final spanned rank in $S_4(K(235))^-$ is 7

 $S_2(K(235))^+$ is determined by Jacobi restriction and the $H4Ndl(3,+)$ test
($\dim(H_4(235,3,1))^+ \leq 4$ and this is less than $\dim(J_{\{2,235\}}^{\{\text{cusp}\}})+1 = 7$)
 $S_2(K(235))^- = 0$ by Jacobi restriction and the $H4Ndl(1,-)$ test
($\dim(H_4(235,1,1))^- \leq 4$ and this is less than $\dim(J_{\{2,235\}}^{\{\text{cusp}\}}) = 6$)

So $S_2(K(235)) = \text{Grit}(J_{\{2,235\}}^{\{\text{cusp}\}})$ (dimension 6)