

$$N = 155 = 5 \cdot 31$$

By the Ibukiyama-Kitayama dimension formula,
 $\dim(S_4(K(155))) = 53$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of $S_4(K(155))^+$ is 26
the nonlift dimension of $S_4(K(155))^+$ is heuristically 22
 $\dim(S_4(K(155))^+)$ thus is heuristically 48
 $\dim(S_4(K(155))^-)$ is heuristically 5

The heuristic dimensions are correct by the spanning results to follow

$\dim(J_{\{2,155\}}^{\{\text{cusp}\}}) = 2$ (Skoruppa-Zagier), so need to span to within 1 dimension

$q = 7$ for TraceDown

After TD($\text{Grit}(J_{\{4,1085\}}^{\{\text{cusp}\}})$) and $(\text{Grit}(J_{\{2,155\}}^{\{\text{cusp}\}}))^2$,
spanned rank in $S_4(K(155))^+$ is 48
spanned rank in $S_4(K(155))^-$ is 0

After Borcherds products,
spanned rank in $S_4(K(155))^-$ is 5

Final spanned rank in $S_4(K(155))^+$ is 48

Final spanned rank in $S_4(K(155))^-$ is 5

$S_2(K(155))$ is determined by Jacobi restriction and the $H4Ndd(2,+)$ test
($H_4(155,2,2)^+ = 0$)

So $S_2(K(155)) = \text{Grit}(J_{\{2,155\}}^{\{\text{cusp}\}})$ (dimension 2)