

| J^P | L | Amplitude |
|---------|-----|---|
| 0^- | 1 | $\text{BW}(m_{123})[\mathbf{t}_3 \cdot \mathbf{p}_3]$ |
| $1^+ S$ | 0 | $\text{BW}(m_{123})[\mathbf{t}_3 \cdot \mathbf{q}_4]$ |
| $1^+ D$ | 2 | $\text{BW}(m_{123})[\mathbf{p}_3(\mathbf{t}_3 \cdot \mathbf{p}_3) - \frac{1}{3}(\mathbf{p}_3 \cdot \mathbf{p}_3)\mathbf{t}_3] \cdot \mathbf{q}_4$ |
| 1^- | 1 | $\text{BW}(m_{123})[(\mathbf{t}_3 \times \mathbf{p}_3) \cdot \mathbf{q}_4]$ |
| $2^- P$ | 1 | $\text{BW}(m_{123})[\frac{1}{2}(t_3^i p_3^j + t_3^j p_3^i) - \frac{1}{3}(\mathbf{t}_3 \cdot \mathbf{p}_3)\delta^{ij}] \cdot [q_4^i q_4^j - \frac{1}{3} q_4 ^2 \delta^{ij}]$ |
| $2^- F$ | 3 | $\text{BW}(m_{123})[(\mathbf{t}_3 \cdot \mathbf{p}_3)(p_3^i p_3^j - \frac{1}{3} p_3 ^2 \delta^{ij})] \cdot [q_4^i q_4^j - \frac{1}{3} q_4 ^2 \delta^{ij}]$ |
| 2^+ | 2 | $\text{BW}(m_{123})[\frac{1}{2}[(\mathbf{t}_3 \times \mathbf{p}_3)^i p_3^j + p_3^i (\mathbf{t}_3 \times \mathbf{p}_3)^j] - \frac{1}{3}[(\mathbf{t}_3 \times \mathbf{p}_3) \cdot \mathbf{p}_3]\delta^{ij}] \cdot [q_4^i q_4^j - \frac{1}{3} q_4 ^2 \delta^{ij}]$ |
| 3^- | 3 | $\text{BW}(m_{123})[(\mathbf{t}_3 \times \mathbf{p}_3)^i p_3^j p_3^k + (\mathbf{t}_3 \times \mathbf{p}_3)^k p_3^i p_3^j + (\mathbf{t}_3 \times \mathbf{p}_3)^j p_3^i p_3^k] - \frac{1}{5}[\delta^{ij}(\mathbf{t}_3 \times \mathbf{p}_3)^k + \delta^{ik}(\mathbf{t}_3 \times \mathbf{p}_3)^j + \delta^{jk}(\mathbf{t}_3 \times \mathbf{p}_3)^i] p_3 ^2] \cdot \frac{1}{5}[(p_4^i p_4^j p_4^k + p_4^k p_4^i p_4^j + p_4^j p_4^i p_4^k) - p_4^2(\delta^{ij} p_4^k + \delta^{ik} p_4^j + \delta^{jk} p_4^i)]$ |