The group G is isomorphic to the group labelled by [32, 22] in the Small Groups library.
Ordinary character table of $G \cong C2 \times ((C4 \times C2) : C2)$:

	1a	4a	2a	2b	2c	2d	4b	4c	4d	2e	2f	2g	2h	2i	4e	4f	4g	2j	2k	4h
χ_1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
χ_2	1	−1	−1	−1	1	1	1	1	1	−1	−1	−1	−1	1	1	1	1	1	−1	−1
χ_3	1	−1	−1	1	1	1	1	1	−1	−1	−1	1	1	1	−1	−1	1	1	−1	1
χ_4	1	−1	−1	1	1	1	1	1	−1	1	1	−1	−1	1	−1	−1	1	1	1	−1
χ_5	1	−1	1	1	1	1	−1	−1	1	1	1	1	1	1	−1	−1	−1	−1	−1	1
χ_6	1	1	1	−1	1	1	−1	−1	−1	1	1	−1	−1	1	−1	−1	−1	−1	1	−1
χ_7	1	1	−1	−1	1	1	−1	−1	1	−1	−1	1	1	1	1	1	−1	−1	−1	−1
χ_8	1	1	1	1	1	1	−1	−1	−1	−1	−1	−1	−1	1	1	1	−1	−1	1	1
χ_9	1	−E(4)	−1	−1	1	1	E(4)	E(4)	E(4)	1	1	−1	−1	−1	−E(4)	−E(4)	−1	1	E(4)
χ_{10}	1	E(4)	−1	1	1	1	E(4)	−E(4)	−E(4)	−E(4)	1	1	1	1	−1	E(4)	E(4)	E(4)	−1	1	−E(4)
χ_{11}	1	−E(4)	1	1	1	1	E(4)	−E(4)	E(4)	1	1	1	1	−1	E(4)	E(4)	−E(4)	−1	1	−E(4)
χ_{12}	1	E(4)	1	1	1	1	E(4)	E(4)	−E(4)	−1	−1	1	1	−1	−E(4)	−E(4)	−E(4)	−1	1	E(4)
χ_{13}	1	E(4)	1	1	1	1	−E(4)	E(4)	E(4)	−1	−1	−1	−1	−1	E(4)	E(4)	−E(4)	1	−1	E(4)
χ_{14}	1	E(4)	−1	1	1	1	E(4)	−E(4)	−E(4)	−1	−1	1	−1	−1	−E(4)	−E(4)	E(4)	1	1	E(4)
χ_{15}	1	−E(4)	1	1	1	1	−E(4)	−E(4)	−E(4)	1	1	−1	−1	−1	−E(4)	−E(4)	E(4)	1	−1	−E(4)
χ_{16}	1	E(4)	1	1	1	1	E(4)	−E(4)	1	1	1	−1	−1	−1	E(4)	E(4)	−E(4)	−1	−1	−E(4)
χ_{17}	2			−2	−2	−2	0						0	0	2	2		0	0	−2
χ_{18}	2	0	0	−2	−2	2	0						0	0	−2	−2		0	0	2
χ_{19}	2	0	0	2	−2	−2	0						0	0	0	0		0	2	
χ_{20}	2	0	0	2	−2	−2	0						0	0	−2	2		0	0	−2

Trivial source character table of $G \cong C2 \times ((C4 \times C2) : C2)$ at $p = 2$:

[Large trivial source character table with columns $N_1 \ldots N_{66}$, $P_1 \ldots P_{66}$, representatives $n_j \leq N_j$ and rows of representations, containing numeric entries.]

$P_1 = Group([()]) \cong 1$
$P_2 = Group([(1,6)(2,10)(3,13)(4,15)(5,16)(7,19)(8,21)(9,22)(11,24)(12,25)(14,26)(17,28)(18,29)(20,30)(23,31)(27,32)]) \cong C2$
$P_3 = Group([(1,5)(2,9)(3,12)(4,14)(6,16)(7,18)(8,20)(10,22)(11,23)(13,25)(15,26)(17,27)(19,29)(21,30)(24,31)(28,32)]) \cong C2$
$P_4 = Group([(1,16)(2,22)(3,25)(4,26)(5,6)(7,29)(8,30)(9,10)(11,31)(12,13)(14,15)(17,32)(18,19)(20,21)(23,24)(27,28)]) \cong C2$

[Additional subgroup definitions P_5 through P_{66} and normaliser definitions N_1 through N_{66} follow, each describing a group generated by permutation cycles and its isomorphism type.]