The group G is isomorphic to the group labelled by [32, 2] in the Small Groups library.
Ordinary character table of $G \cong$ (C4 x C2) : C4:

	1a	4a	4b	2a	2b	2c	4c	4d	4e	4f	4g	2d	2e	2f	4h	4i	4j	4k	2g	4l
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	−E(4)	1	1	−1	E(4)	−1	1	−E(4)	E(4)	1	−1	−1	E(4)	−E(4)	1	E(4)	−1	−E(4)
χ_6	1	−1	E(4)	1	1	−1	−E(4)	−1	1	E(4)	−E(4)	1	−1	−1	−E(4)	E(4)	1	−E(4)	−1	E(4)
χ_7	1	−E(4)	−1	1	−1	−1	−E(4)	1	−1	−E(4)	−E(4)	−1	1	−1	E(4)	E(4)	−1	E(4)	1	−E(4)
χ_8	1	E(4)	1	1	−1	−1	E(4)	−E(4)	−E(4)	1	−1	−1	1	−1	−E(4)	E(4)	−1	1	−1	E(4)
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)	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)	−1	−1	−E(4)
χ_{13}	1	−E(4)	−E(4)	1	−1	−1	1	E(4)	E(4)	E(4)	1	−1	1	1	−1	−E(4)	−E(4)	1	−1
χ_{14}	1	E(4)	E(4)	1	−1	−1	1	−E(4)	−E(4)	−E(4)	1	−1	1	1	1	−1	E(4)	E(4)	1	−1
χ_{15}	1	−E(4)	E(4)	1	−1	−1	1	E(4)	E(4)	−E(4)	−E(4)	−1	1	1	−1	−1	−E(4)	E(4)	1	−1
χ_{16}	1	E(4)	−E(4)	1	−1	−1	1	−E(4)	E(4)	E(4)	−1	1	1	−1	−1	−E(4)	E(4)	1	1
χ_{17}	2	0	0	−2	−2	2	0	0	0	0	0	2	2	2	0	0	0	0	−2	0
χ_{18}	2	0	0	−2	−2	−2	0	0	0	0	0	2	−2	−2	0	0	0	0	2	0
χ_{19}	2	0	0	−2	2	−2	0	0	0	0	0	−2	−2	2	0	0	0	0	2	0
χ_{20}	2	0	0	−2	2	2	0	0	0	0	0	−2	−2	2	0	0	0	0	−2	0

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

[Large trivial-source character table with normalisers $N_1 \ldots N_{38}$, p-subgroups $P_1 \ldots P_{10}$, and representatives $n_j \in N_i$; data matrix not reliably transcribable at this resolution.]

$P_1 = Group([[]]) \cong 1$
$P_2 = Group([(1,5)(2,9)(3,12)(4,14)(6,16)(7,18)(8,20)(10,22)(11,23)(13,25)(15,26)(17,27)(19,29)(21,30)(24,31)(28,32)]) \cong C2$
$P_3 = Group([(1,4)(2,8)(3,11)(5,14)(6,15)(7,17)(9,20)(10,21)(12,23)(13,24)(16,26)(18,27)(19,28)(22,30)(25,31)(29,32)]) \cong C2$
$P_4 = Group([(1,14)(2,20)(3,23)(4,5)(6,26)(7,27)(8,9)(10,30)(11,12)(13,31)(15,16)(17,18)(19,32)(21,22)(24,25)(28,29)]) \cong C2$
$P_5 = Group([(1,6)(2,10)(3,13)(4,15)(5,16)(7,19)(8,21)(9,22)(11,24)(12,25)(14,26)(17,28)(18,29)(20,30)(23,31)(27,32)]) \cong C2$
$P_6 = Group([(1,16)(2,22)(3,25)(4,26)(5,6)(7,29)(8,30)(9,10)(11,31)(12,13)(14,15)(17,32)(18,19)(20,21)(23,24)(27,28)]) \cong C2$
$P_7 = Group([(1,15)(2,21)(3,24)(4,6)(5,26)(7,28)(8,10)(9,30)(11,13)(12,31)(14,16)(17,19)(18,32)(20,22)(23,25)(27,29)]) \cong C2$
$P_8 = Group([(1,26)(2,30)(3,31)(4,16)(5,15)(6,14)(7,32)(8,22)(9,21)(10,20)(11,25)(12,24)(13,23)(17,29)(18,28)(19,27)]) \cong C2$

[Further $P_9 \ldots P_{38}$ and $N_1 \ldots N_{38}$ group definitions follow; each given as explicit permutation generators with isomorphism type, not reliably transcribable at this resolution.]