The group G is isomorphic to the group labelled by [8, 2] in the Small Groups library.
Ordinary character table of $G \cong$ C4 x C2:

	$1a$	$4a$	$2a$	$4b$	$2b$	$4c$	$2c$	$4d$
χ_1	1	1	1	1	1	1	1	1
χ_2	1	-1	1	-1	-1	1	-1	1
χ_3	1	-1	1	-1	1	-1	1	-1
χ_4	1	1	1	1	-1	-1	-1	-1
χ_5	1	$-E(4)$	-1	$E(4)$	-1	$E(4)$	1	$-E(4)$
χ_6	1	$E(4)$	-1	$-E(4)$	-1	$-E(4)$	1	$E(4)$
χ_7	1	$-E(4)$	-1	$E(4)$	1	$-E(4)$	-1	$E(4)$
χ_8	1	$E(4)$	-1	$-E(4)$	1	$E(4)$	-1	$-E(4)$

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

Normalisers N_i	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8
p-subgroups of G up to conjugacy in G	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8
Representatives $n_j \in N_i$	$1a$	$1a$	$1a$	$1a$	$1a$	$1a$	$1a$	$1a$
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8$	8	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	4	4	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8$	4	0	4	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	4	0	0	4	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	2	2	0	0	2	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	2	2	2	2	0	2	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	2	2	0	0	0	0	2	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8$	1	1	1	1	1	1	1	1

$P_1 = Group([()]) \cong 1$
$P_2 = Group([(3,5)(4,6)]) \cong$ C2
$P_3 = Group([(1,2)]) \cong$ C2
$P_4 = Group([(1,2)(3,5)(4,6)]) \cong$ C2
$P_5 = Group([(3,5)(4,6),(3,4,5,6)]) \cong$ C4
$P_6 = Group([(3,5)(4,6),(1,2)]) \cong$ C2 x C2
$P_7 = Group([(3,5)(4,6),(1,2)(3,4,5,6)]) \cong$ C4
$P_8 = Group([(3,5)(4,6),(3,4,5,6),(1,2)]) \cong$ C4 x C2

$N_1 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_2 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_3 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_4 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_5 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_6 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_7 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2
$N_8 = Group([(1,2),(3,4,5,6)]) \cong$ C4 x C2