



# **STUDY REPORT**

**SR 225 (2010)**

## **Residential Kitchen Local Fire Protection - Experiments**

### **Appendix D**

**A.P. Robbins**



The work reported here was jointly funded by BRANZ from the Building Research Levy and the New Zealand Fire Service Commission Contestable Research Fund.

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ISSN: 1179-6197

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# APPENDIX A DETAILS OF KITCHEN FIRE RESULTS

## A.1 Test 1

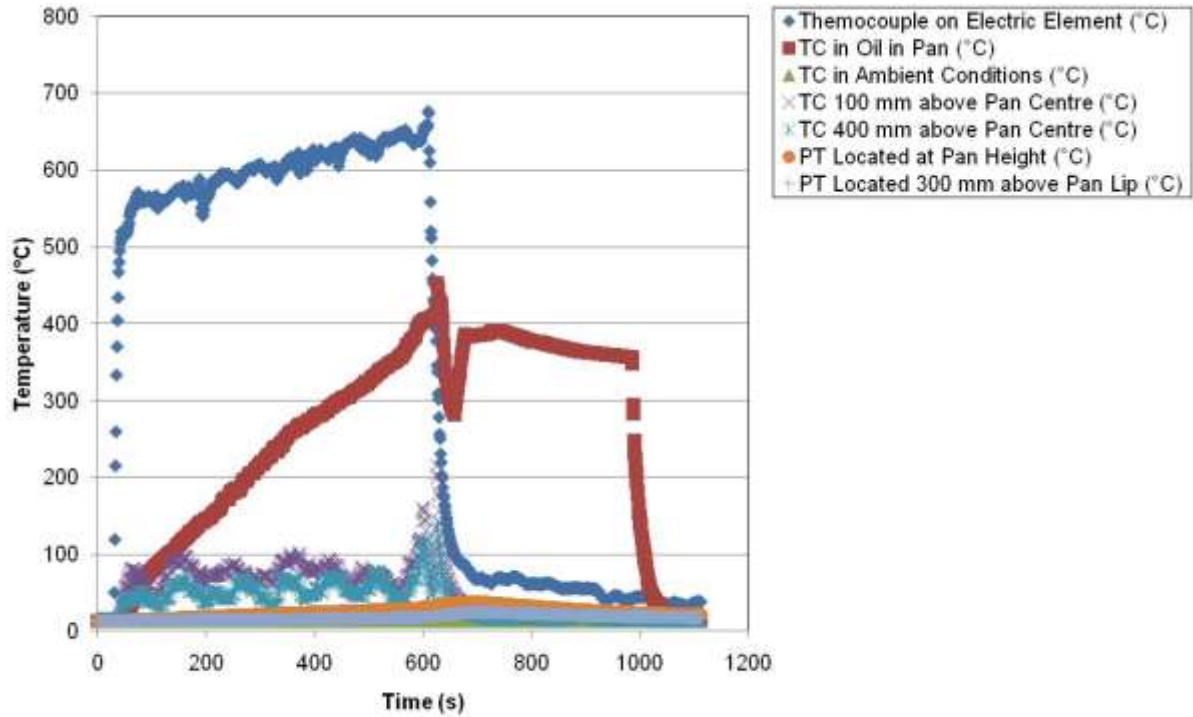


Figure 1: Measured temperatures of the thermocouples and plate thermometers for Test 1.

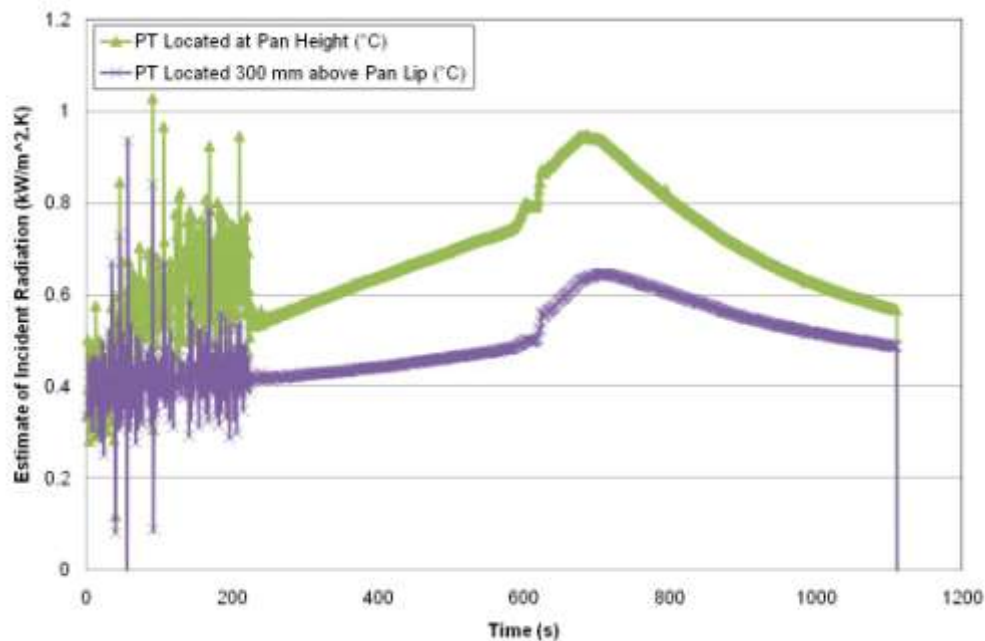


Figure 2: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the stove-top for Test 1.

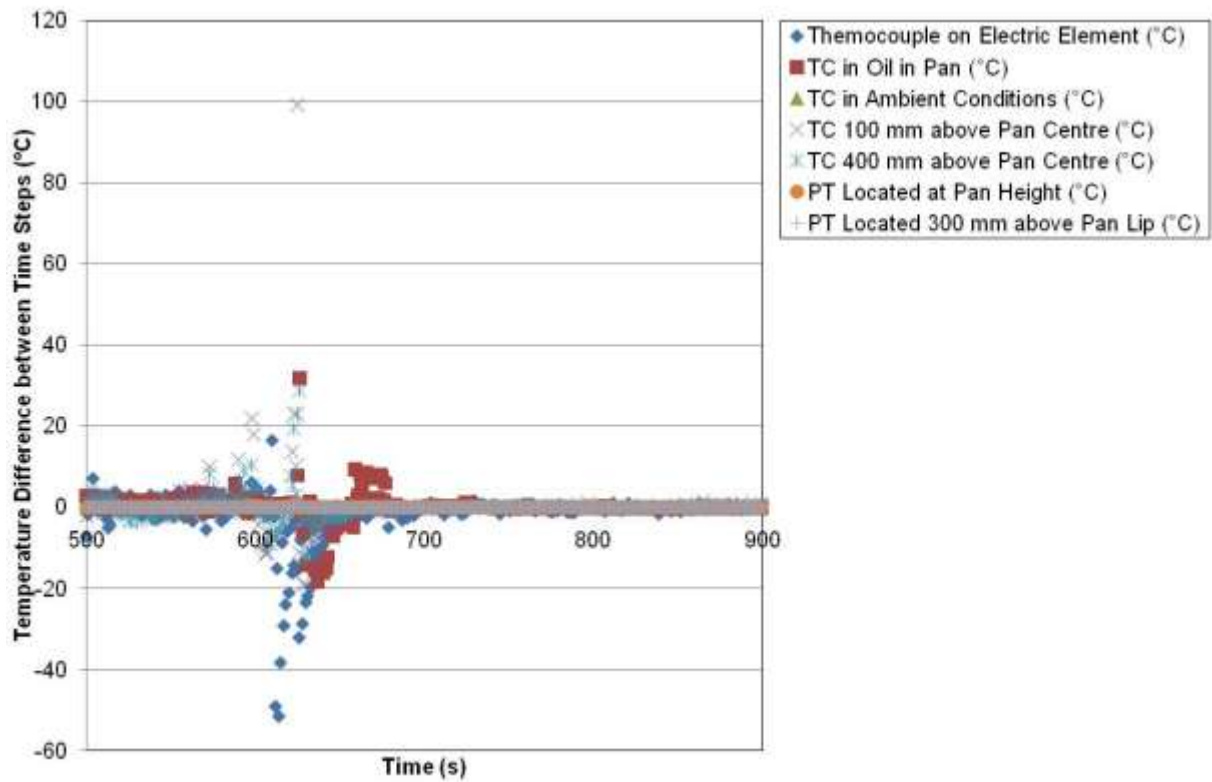


Figure 3: Differences of each of the variable temperatures to between sequential time steps for Test 1.

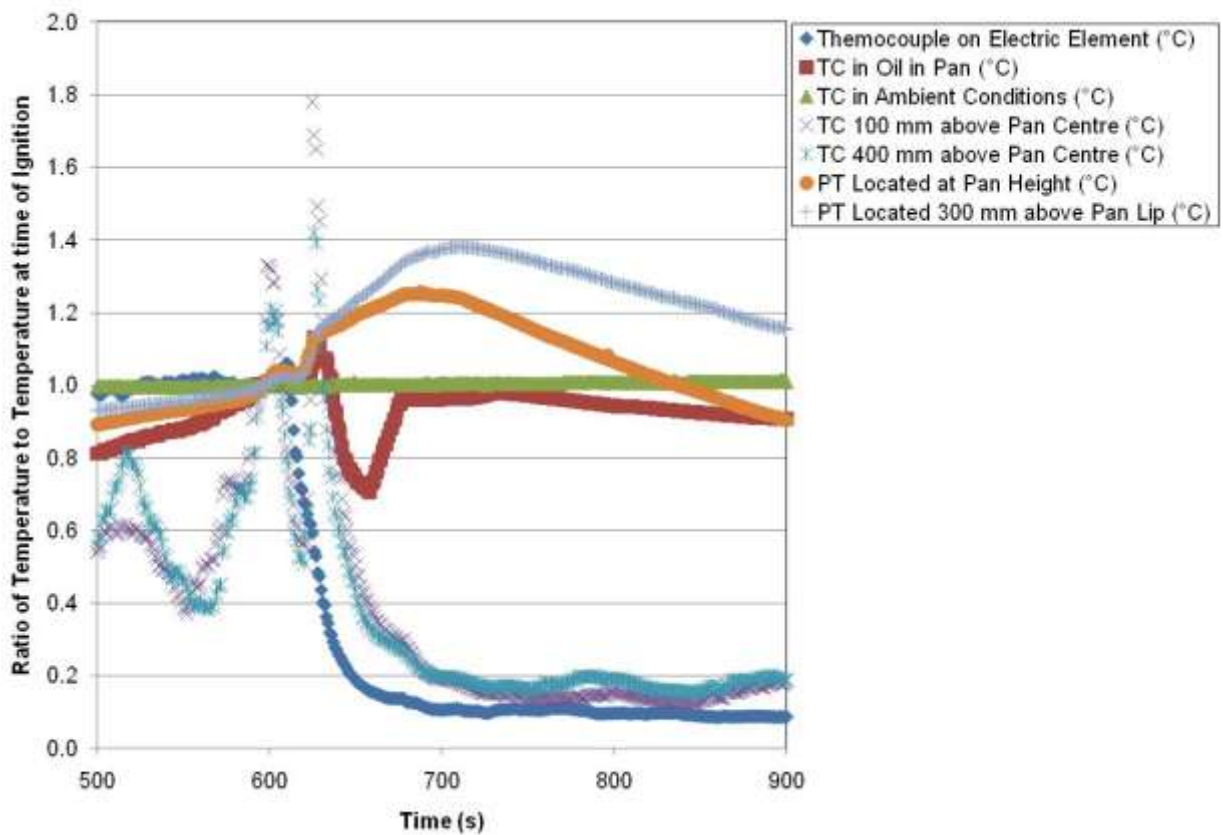


Figure 4: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 1.

## A.2 Test 2

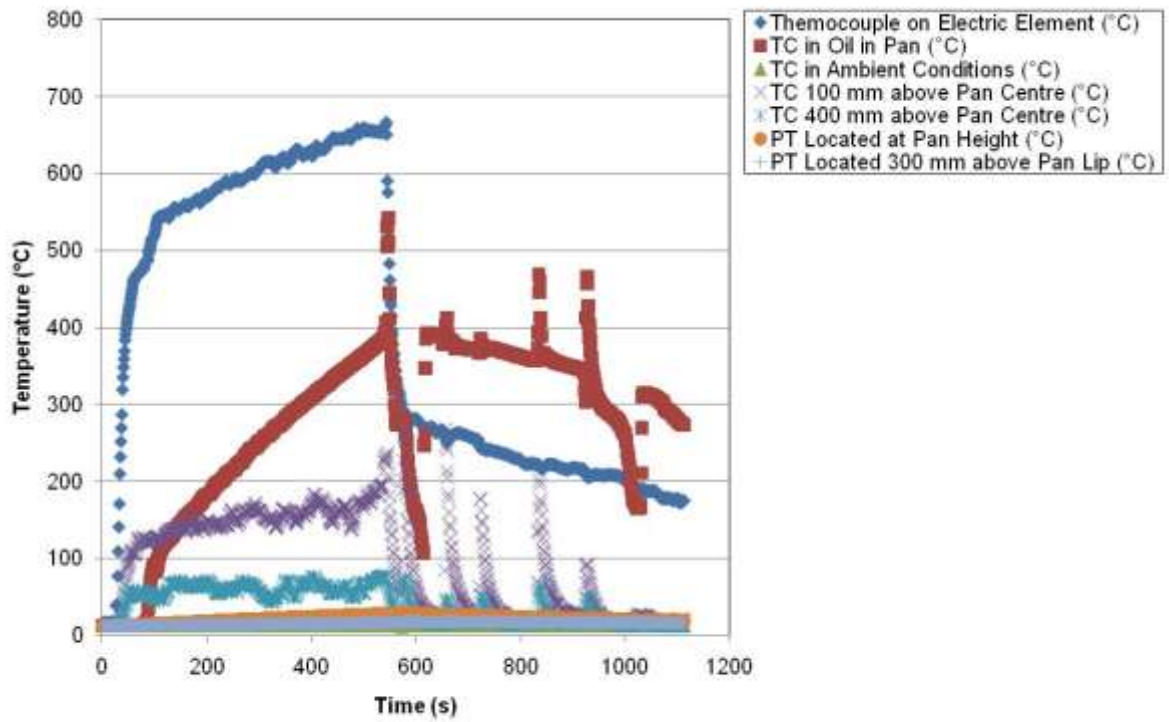


Figure 5: Measured temperatures of the thermocouples and plate thermometers for Test 2.

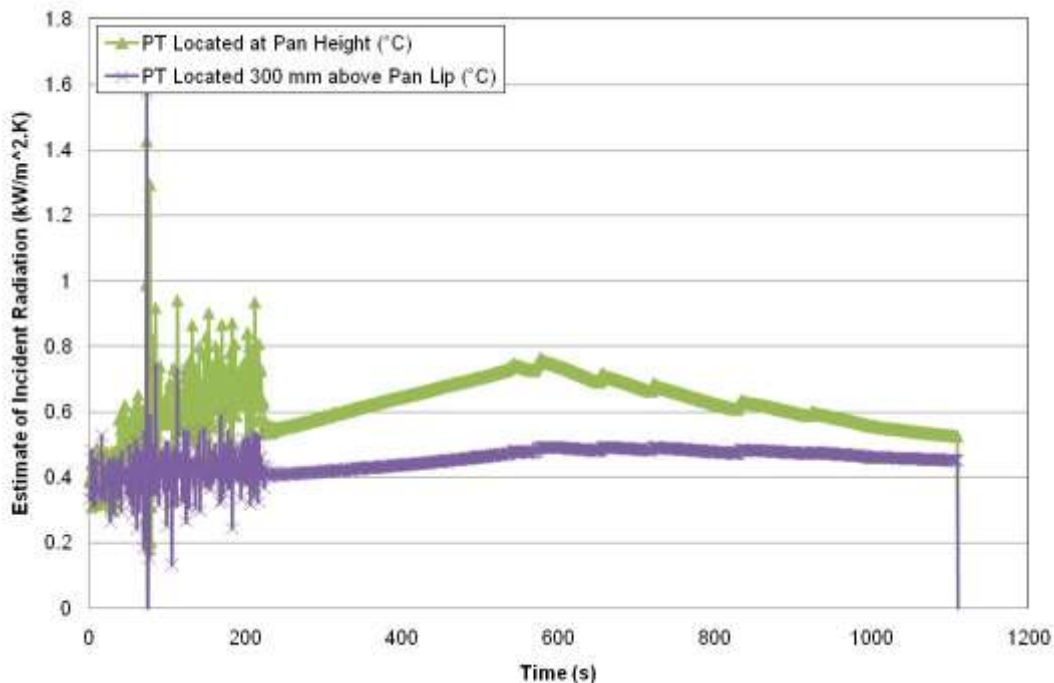


Figure 6: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the stove-top for Test 2.

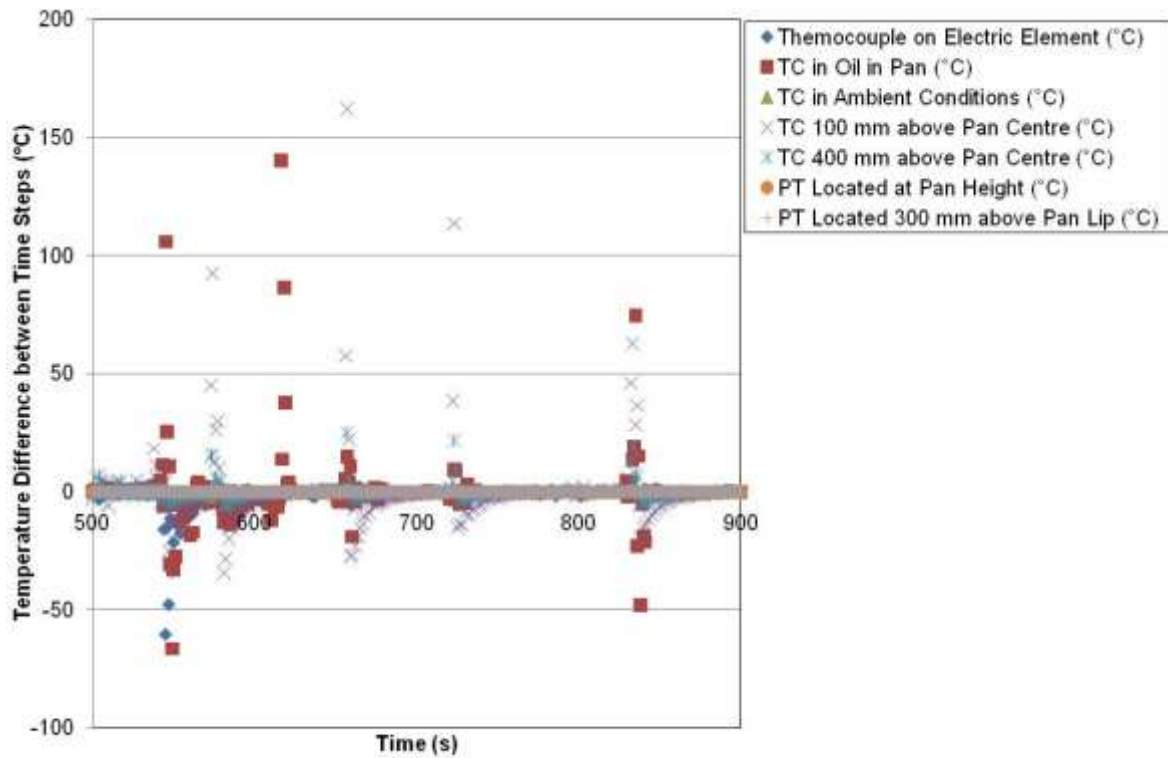


Figure 7: Differences of each of the variable temperatures to between sequential time steps for Test 2.

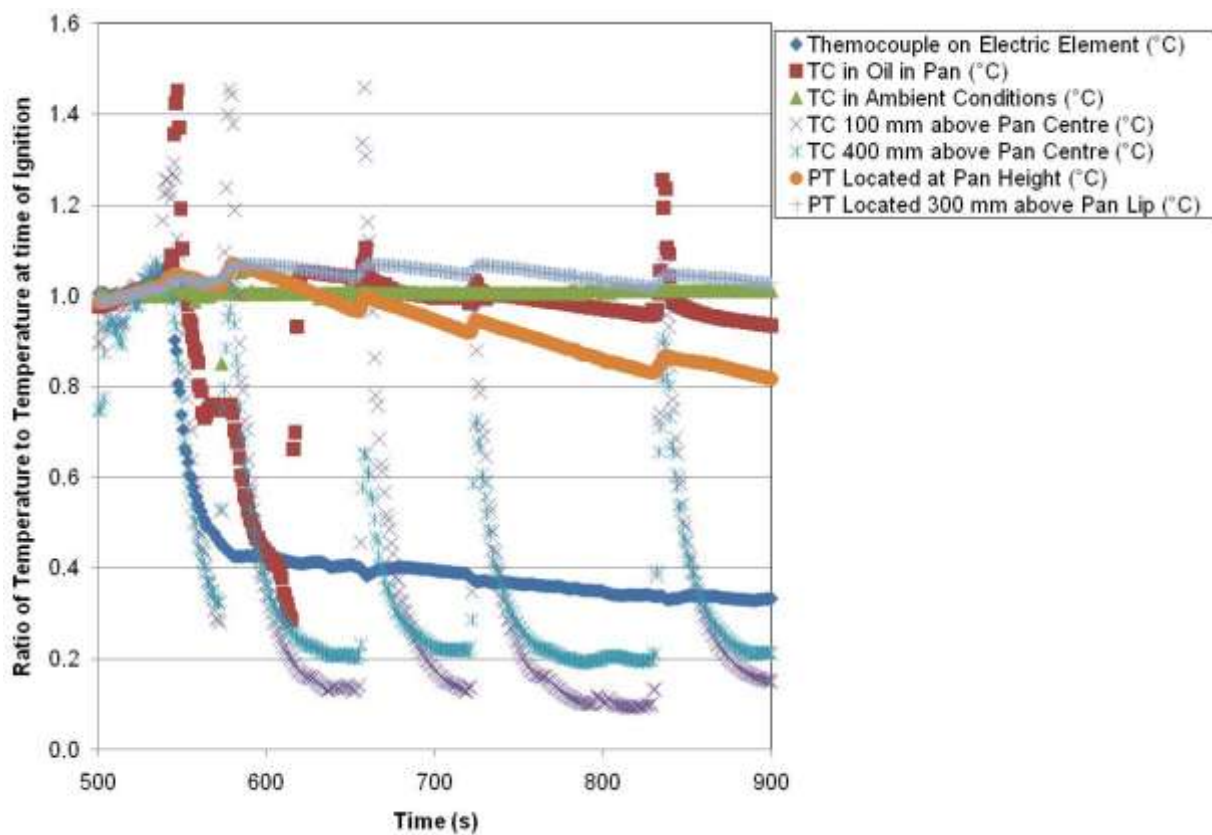


Figure 8: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 2.



### A.3 Test 3

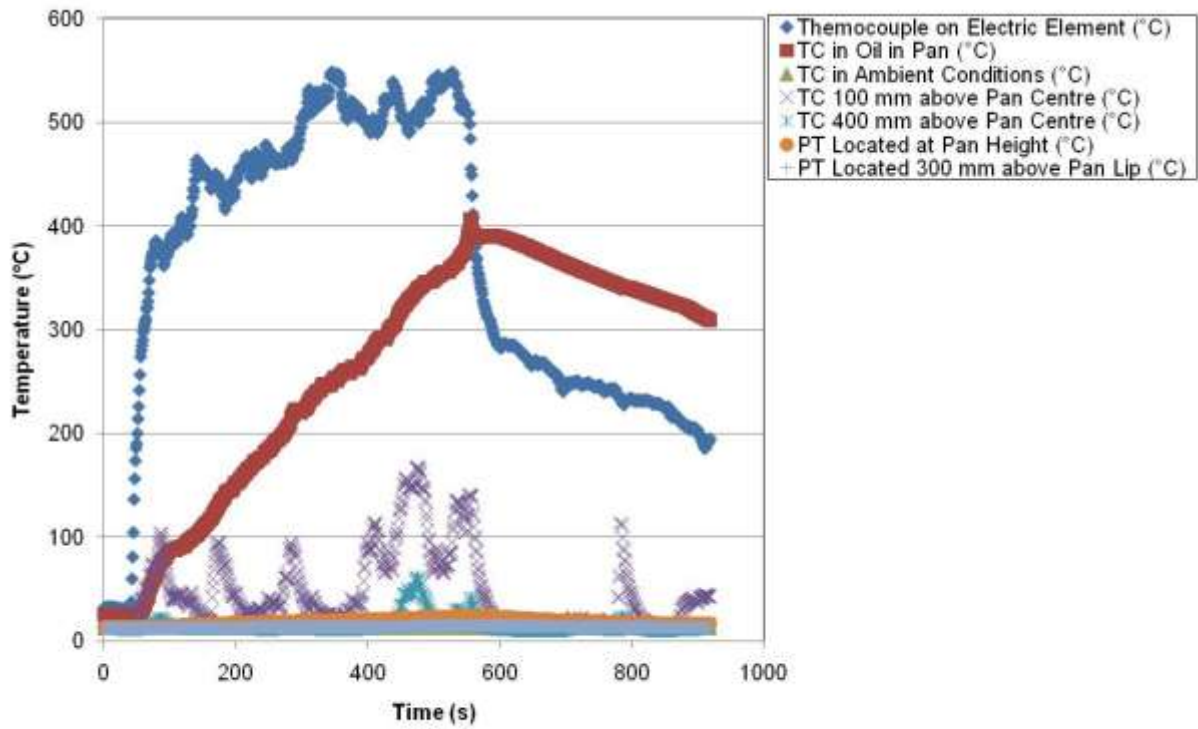


Figure 9: Measured temperatures of the thermocouples and plate thermometers for Test 3.

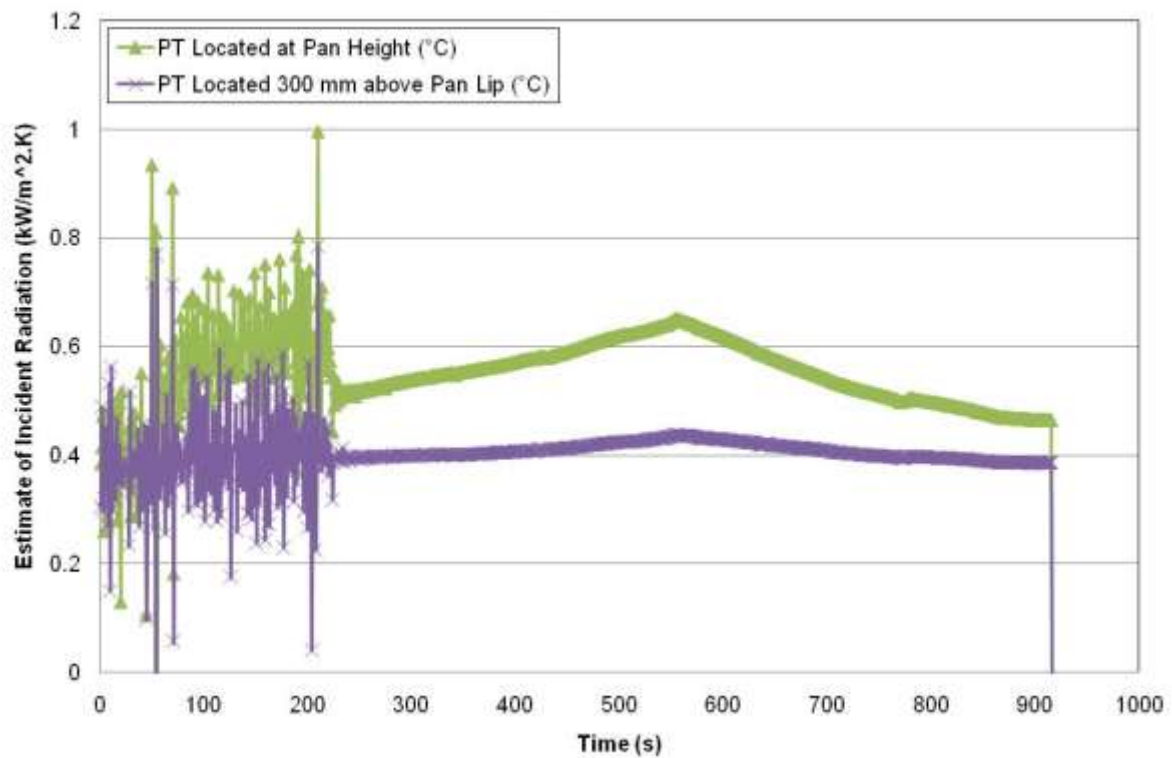


Figure 10: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the stove-top for Test 3.

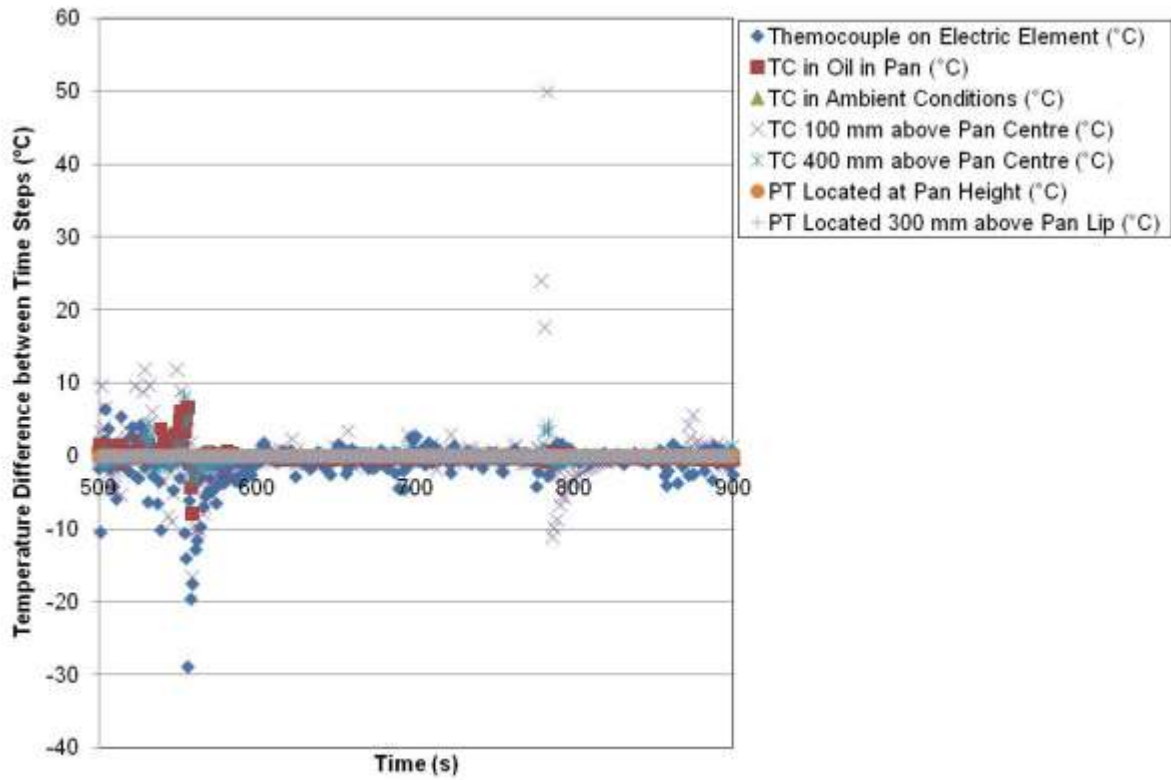


Figure 11: Differences of each of the variable temperatures to between sequential time steps for Test 3.

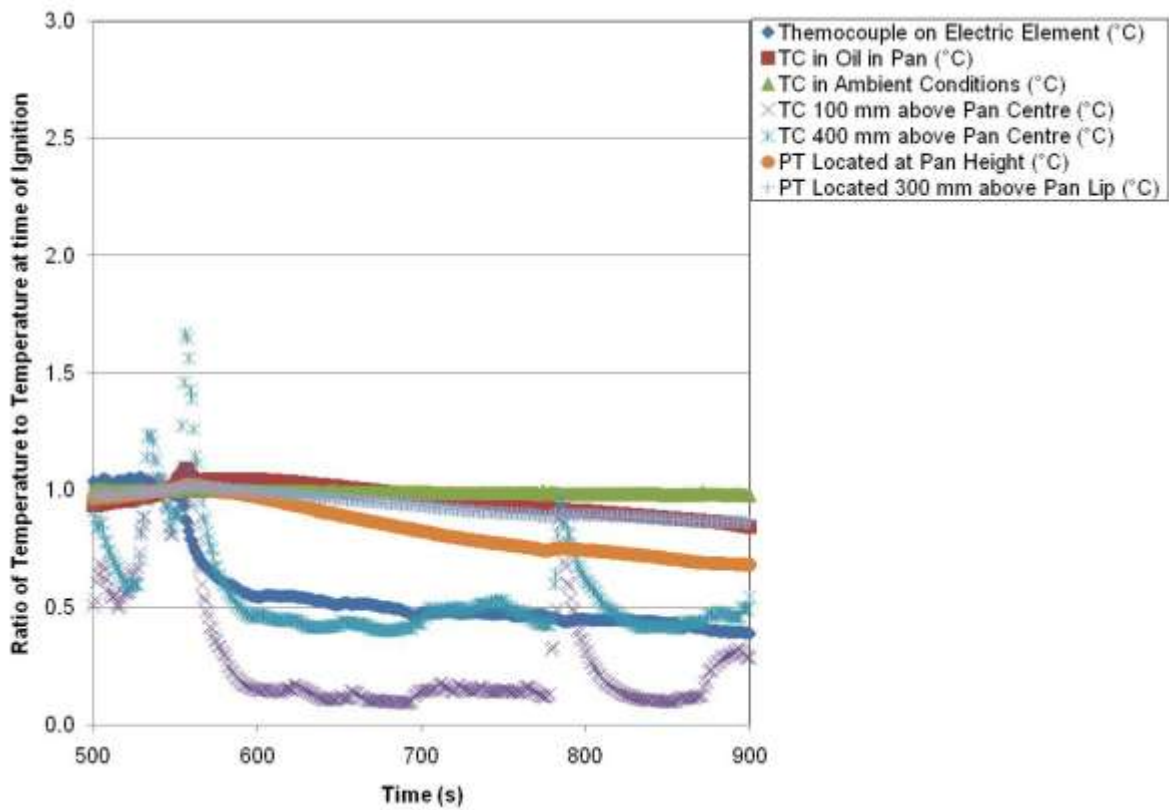


Figure 12: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 3.

## A4 Test 4

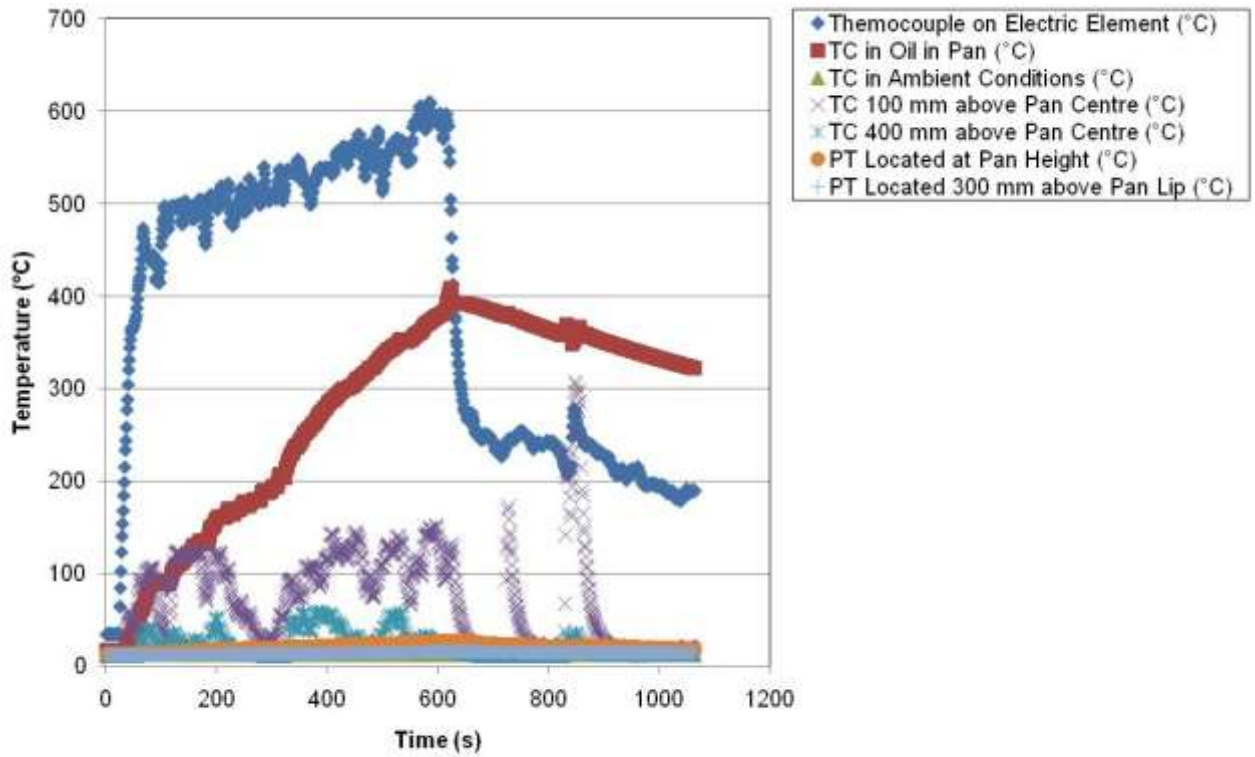


Figure 13: Measured temperatures of the thermocouples and plate thermometers for Test 4.

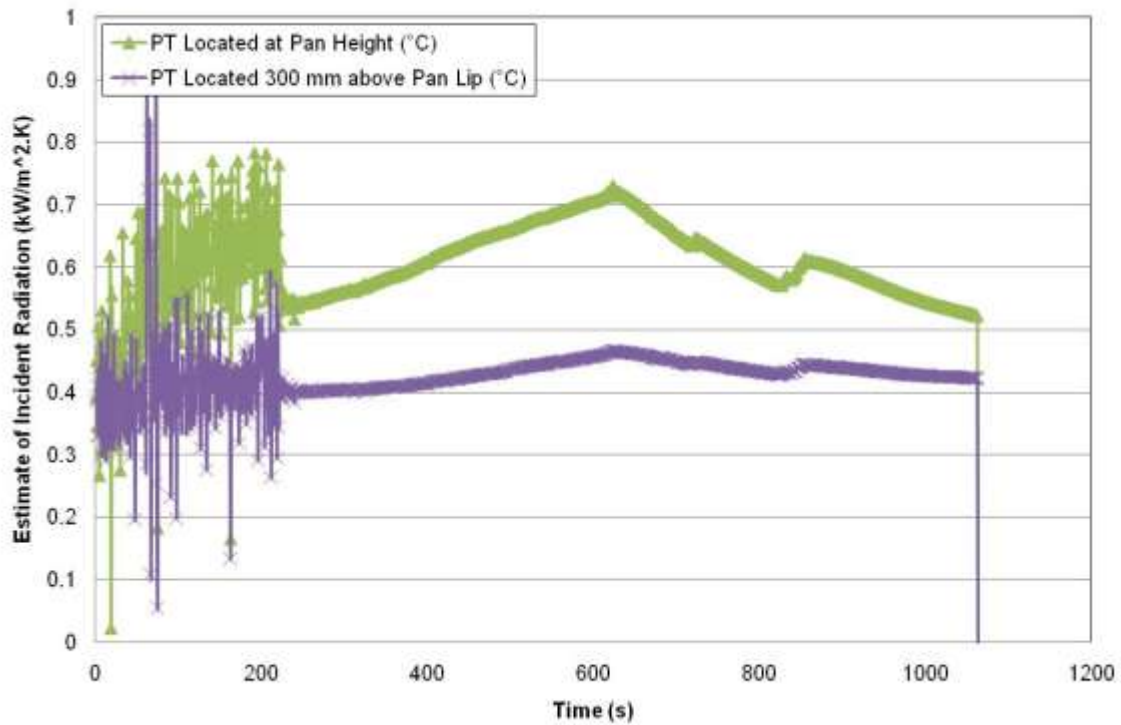


Figure 14: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the stove-top for Test 4.

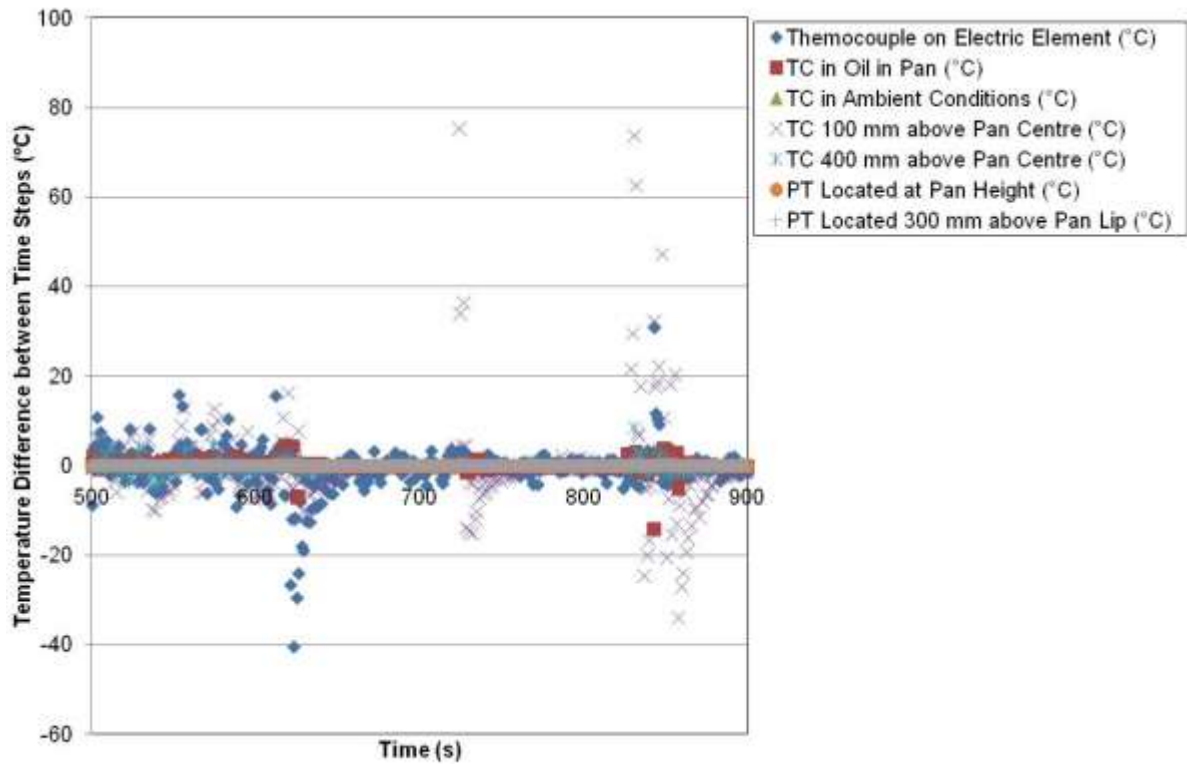


Figure 15: Differences of each of the variable temperatures to between sequential time steps for Test 4.

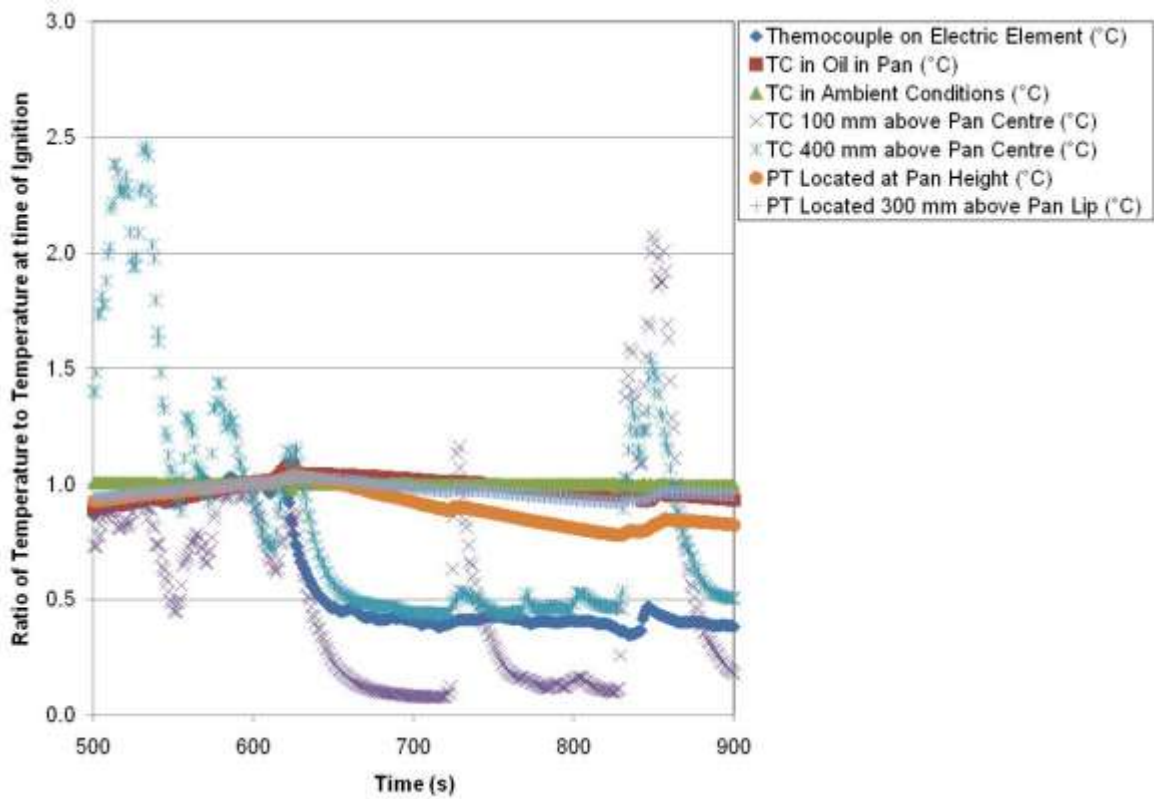


Figure 16: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 4.

## A.5 Test 5

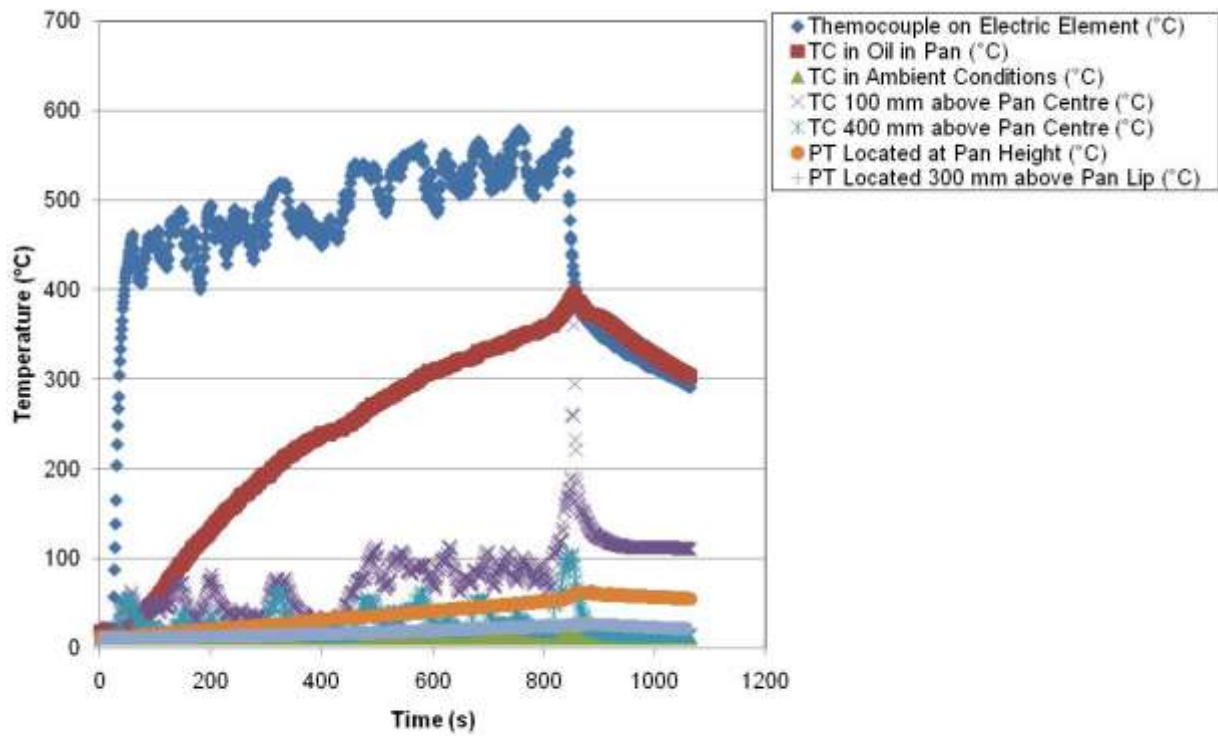


Figure 17: Measured temperatures of the thermocouples and plate thermometers for Test 5.

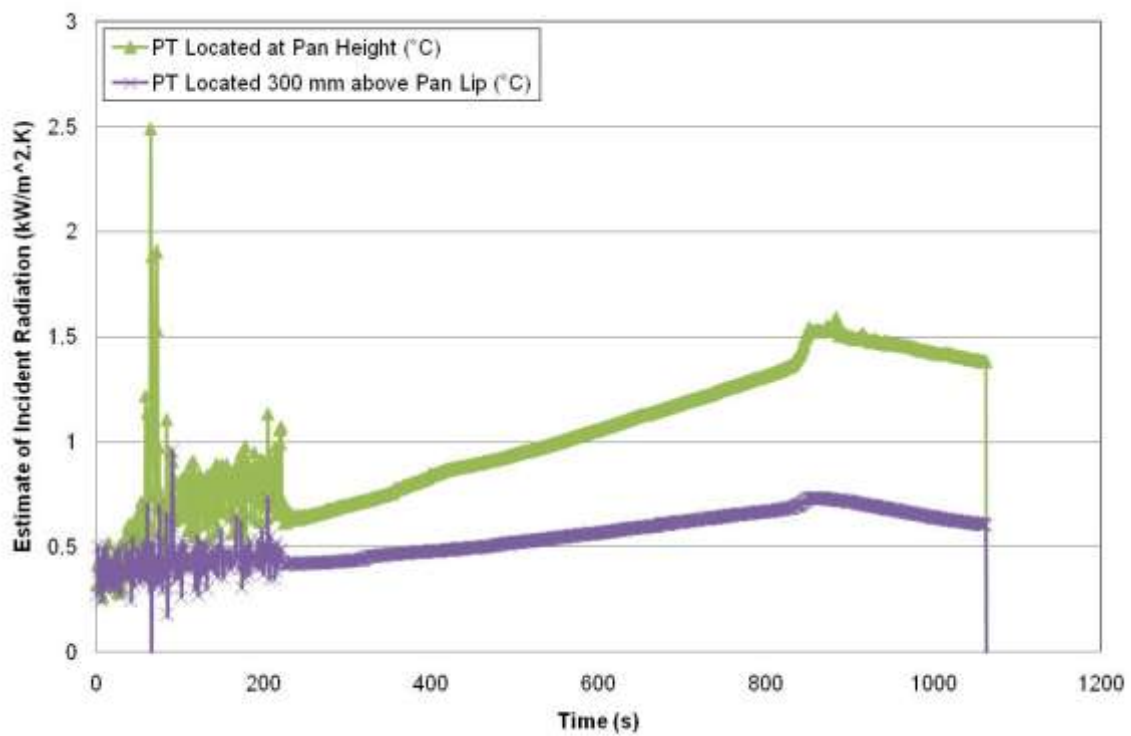


Figure 18: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the stove-top for Test 5.

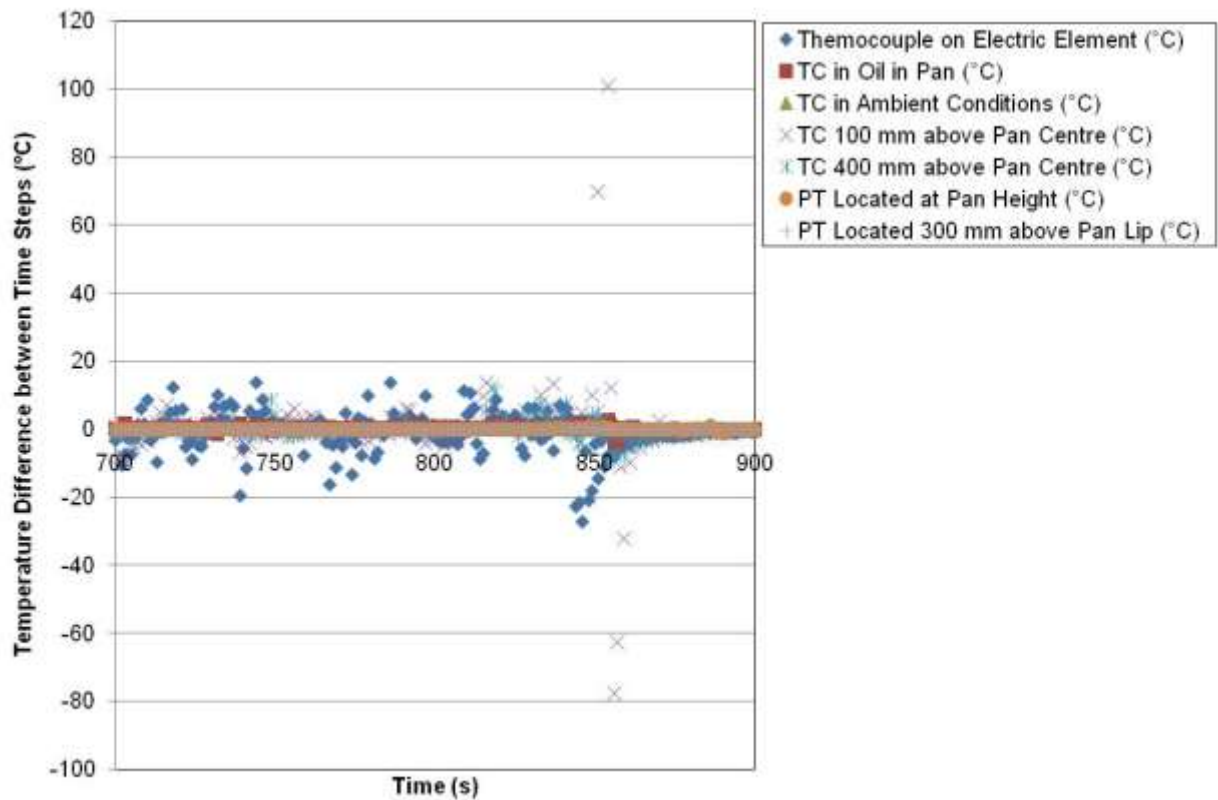


Figure 19: Differences of each of the variable temperatures to between sequential time steps for Test 5.

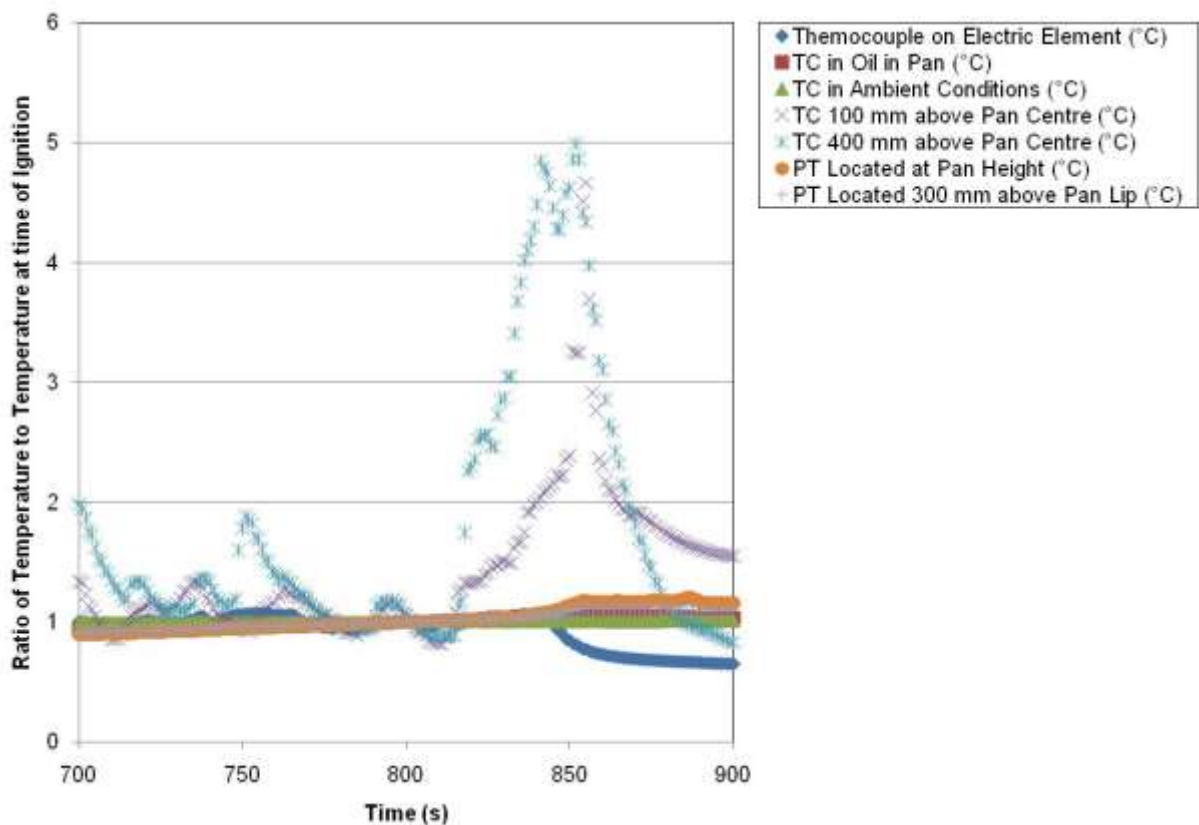


Figure 20: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 5.

## A.6 Test 6

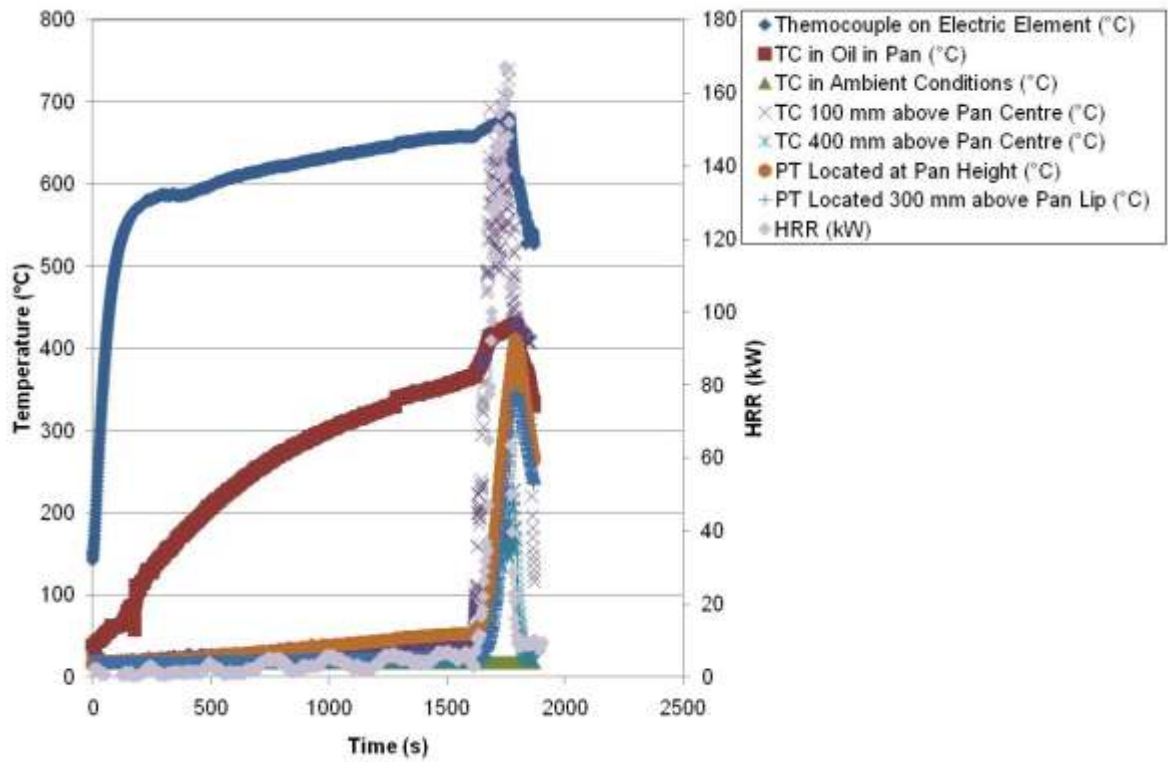


Figure 21: Measured temperatures of the thermocouples and plate thermometers for Test 6.

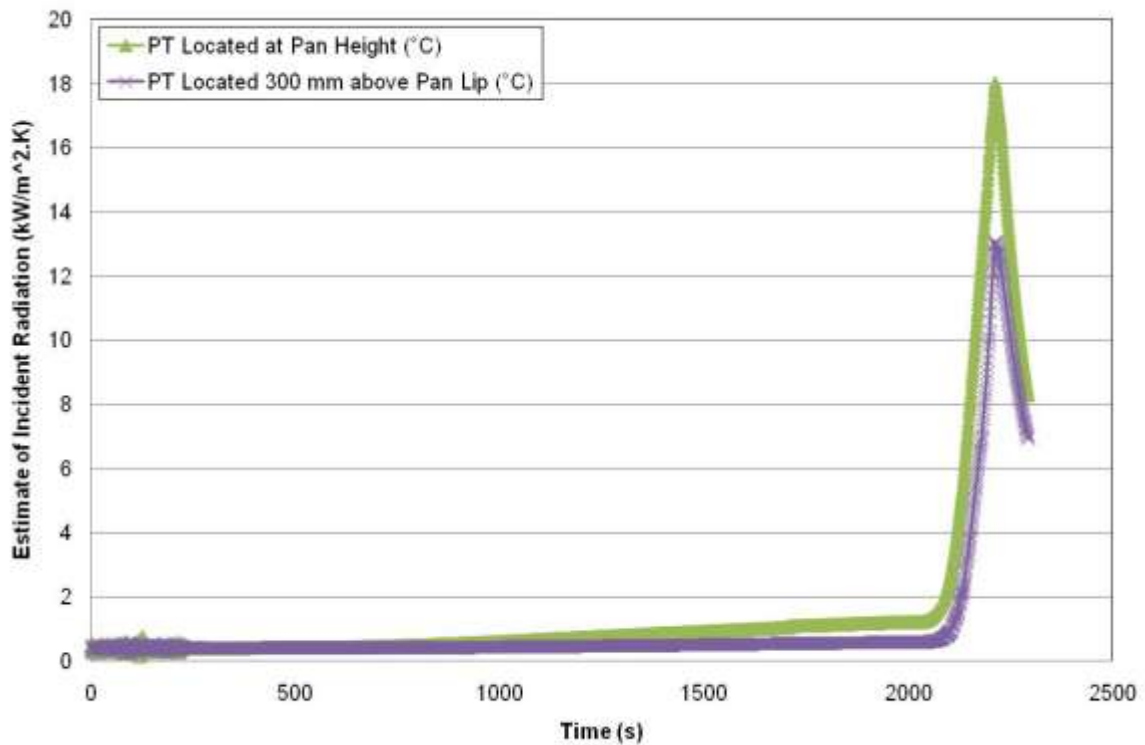


Figure 22: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 6.

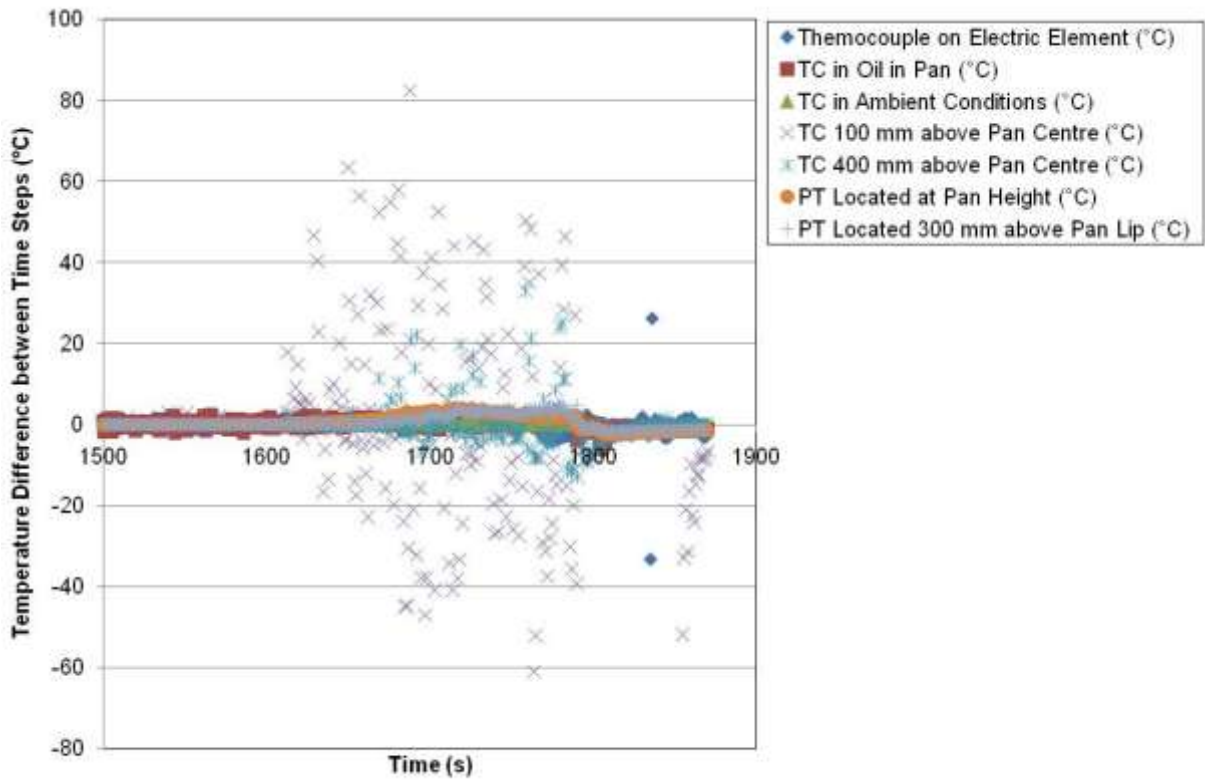


Figure 23: Differences of each of the variable temperatures to between sequential time steps for Test 6.

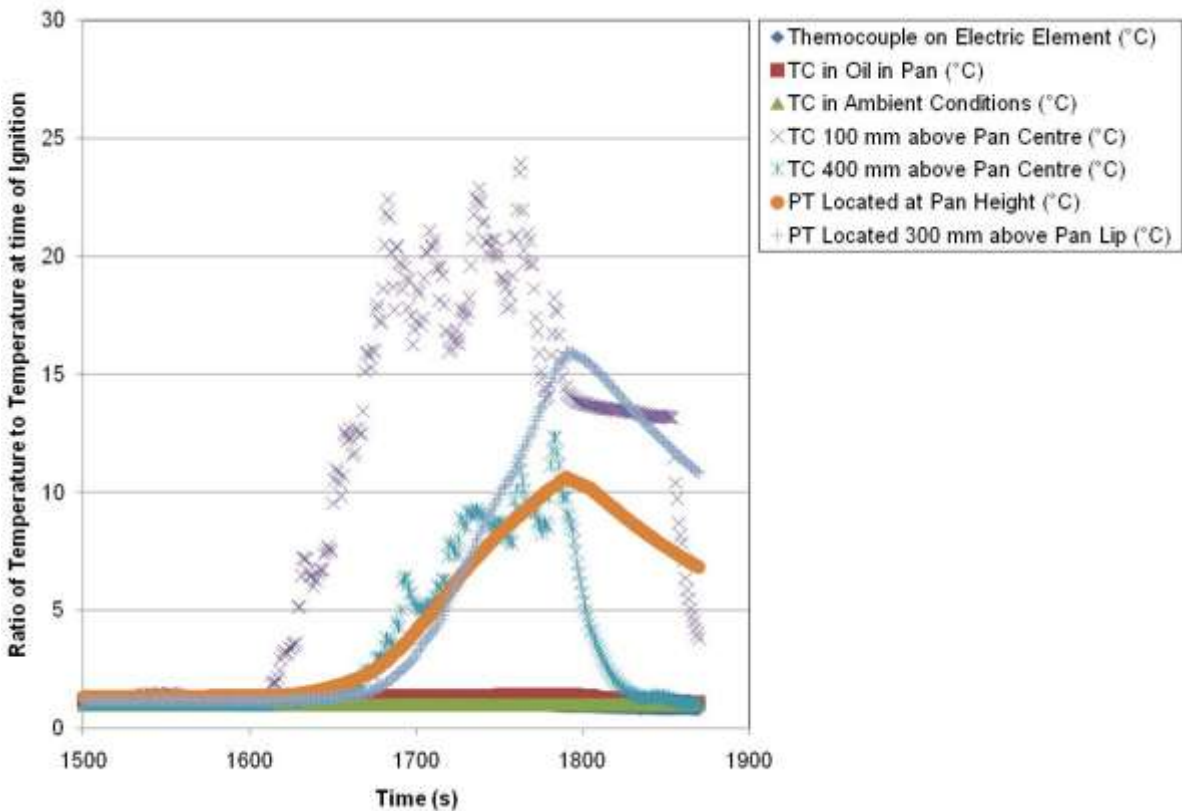




Figure 24: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 6.

## A.7 Test 7

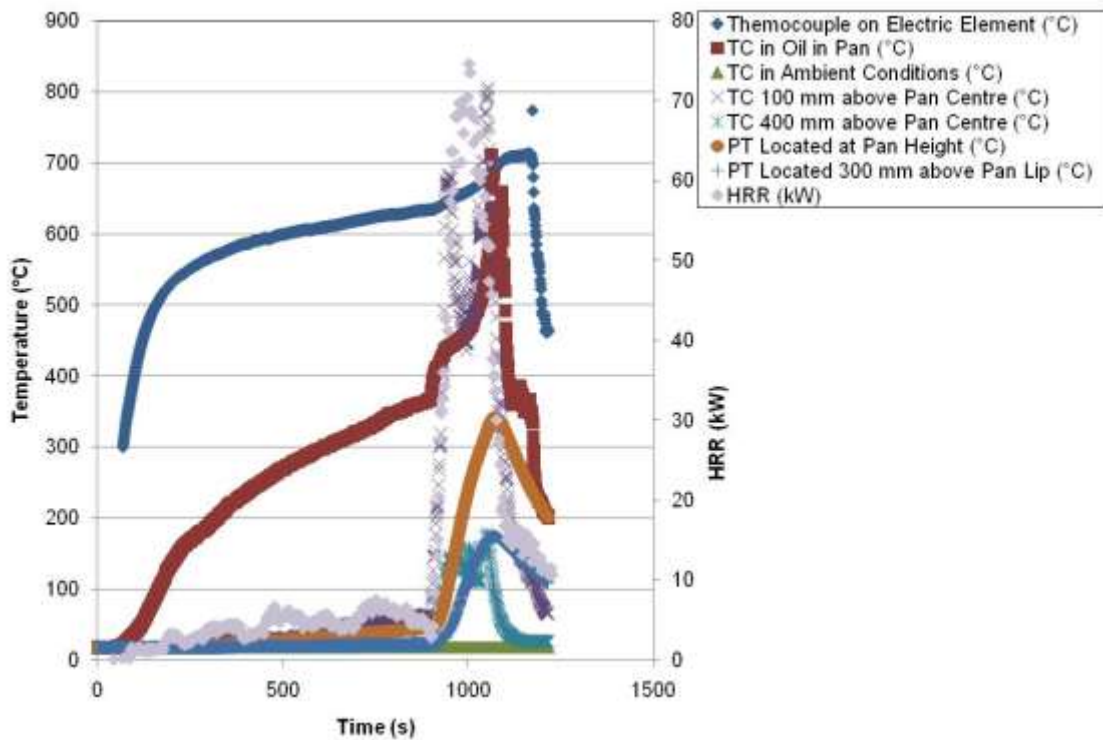


Figure 25: Measured temperatures of the thermocouples and plate thermometers for Test 7.

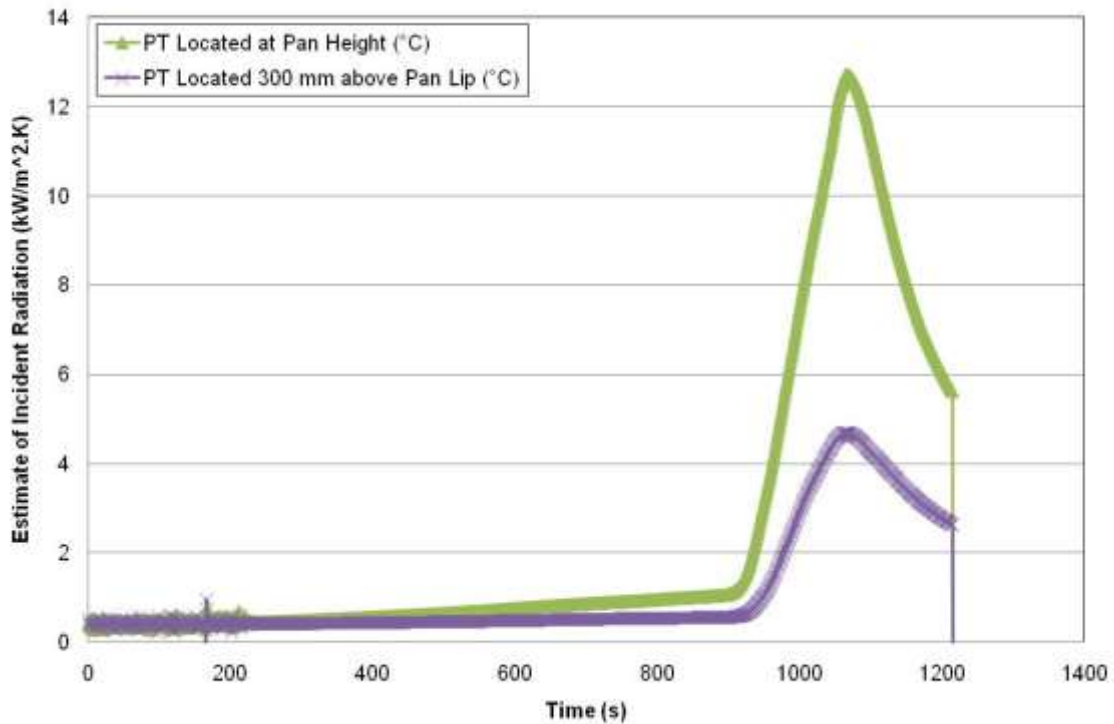


Figure 26: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 7.

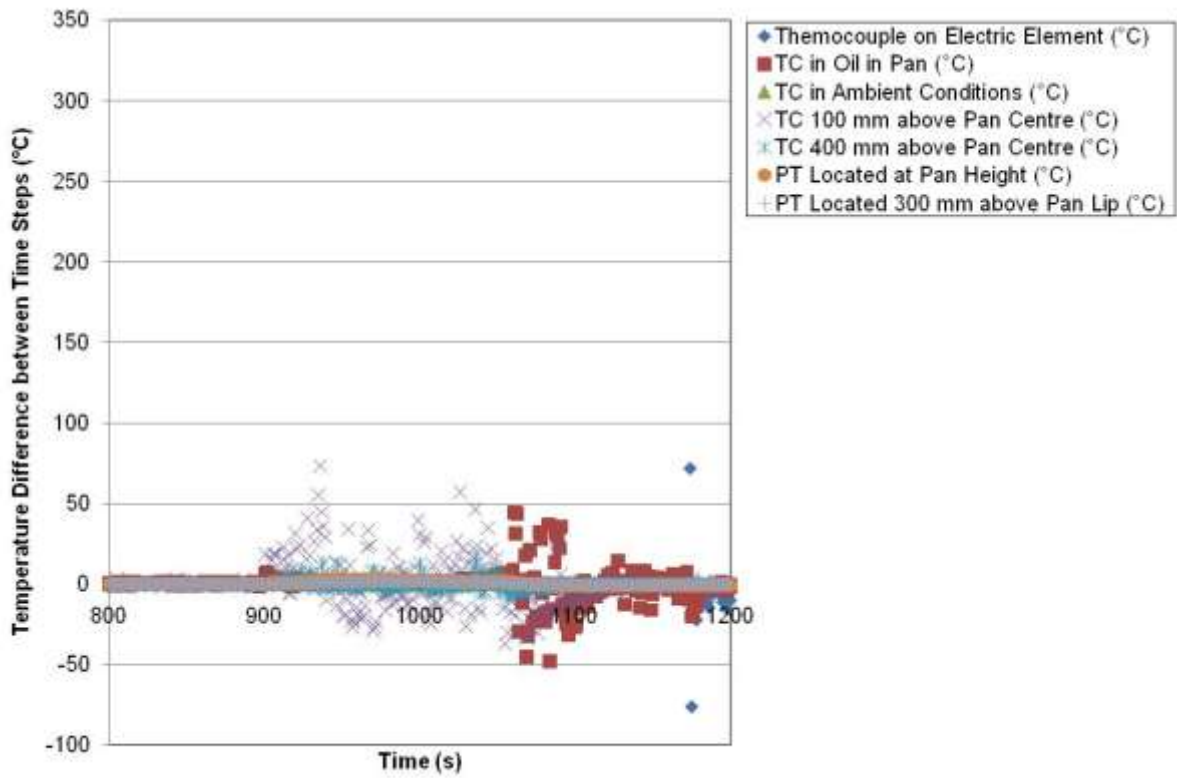


Figure 27: Differences of each of the variable temperatures to between sequential time steps for Test 7.

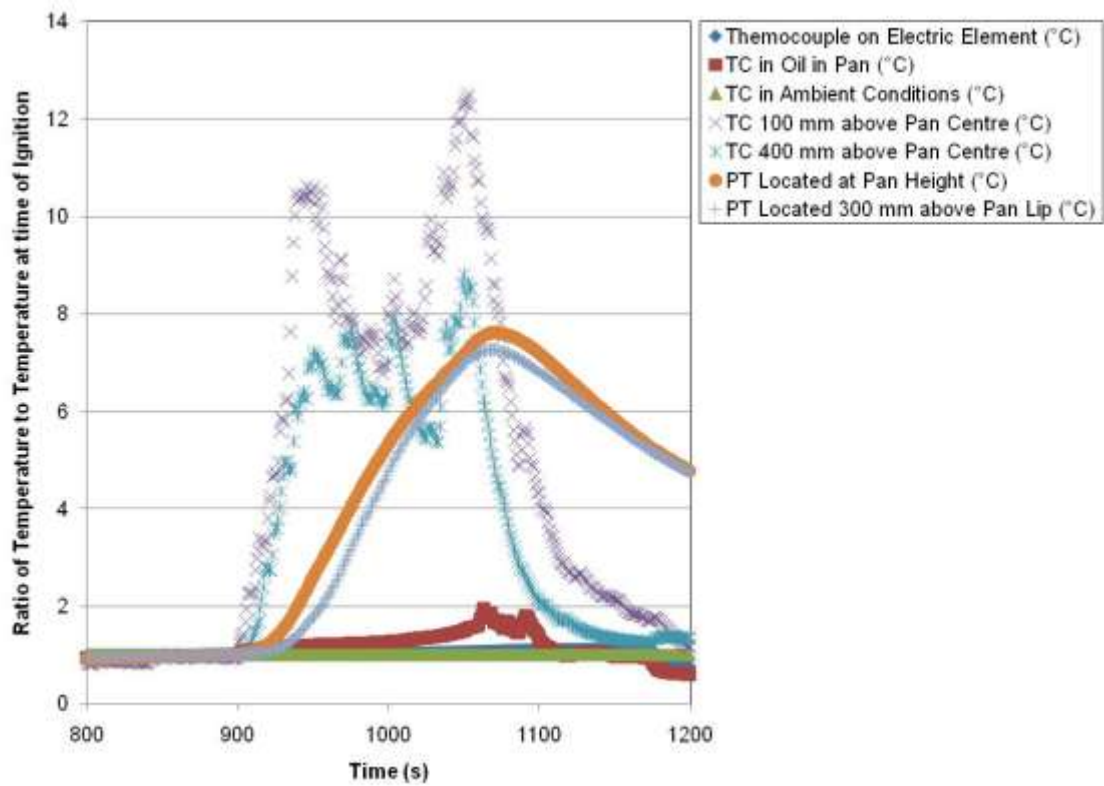


Figure 28: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 7.

## A.8 Test 8

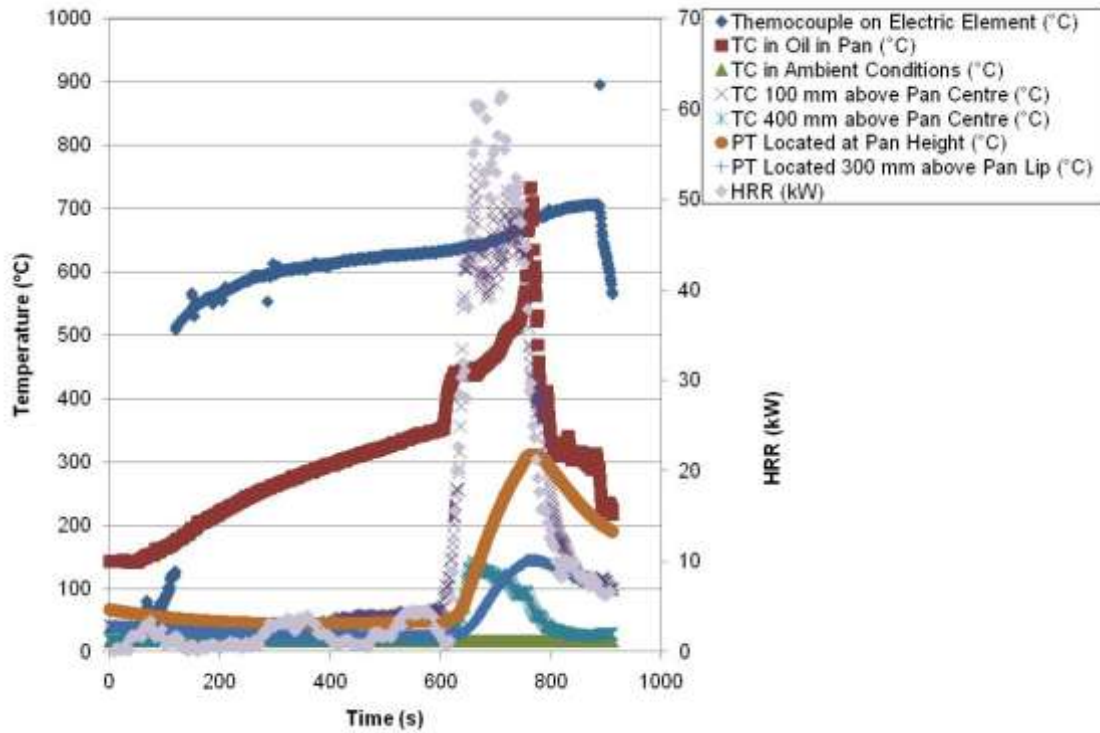


Figure 29: Measured temperatures of the thermocouples and plate thermometers for Test 8.

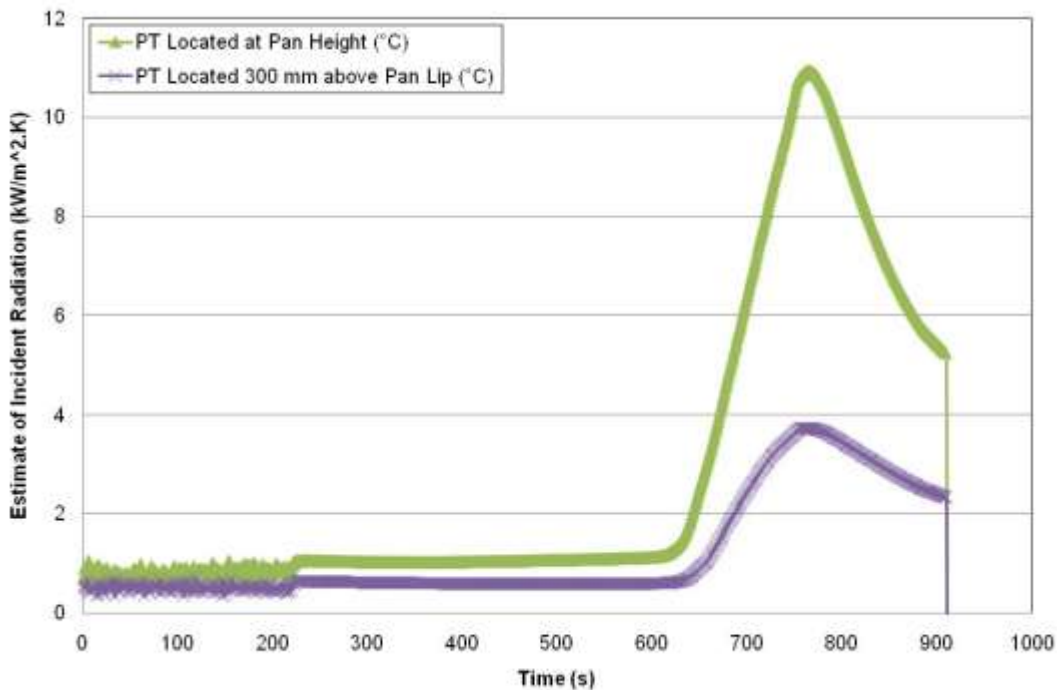


Figure 30: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 8.

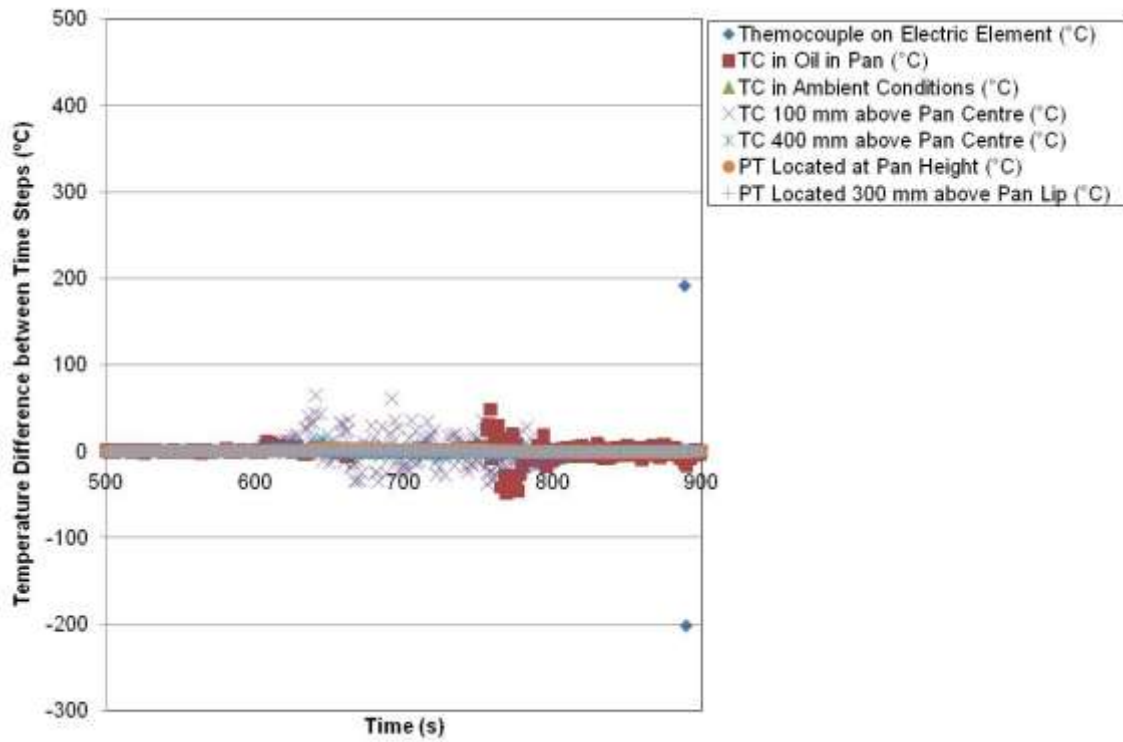


Figure 31: Differences of each of the variable temperatures to between sequential time steps for Test 8.

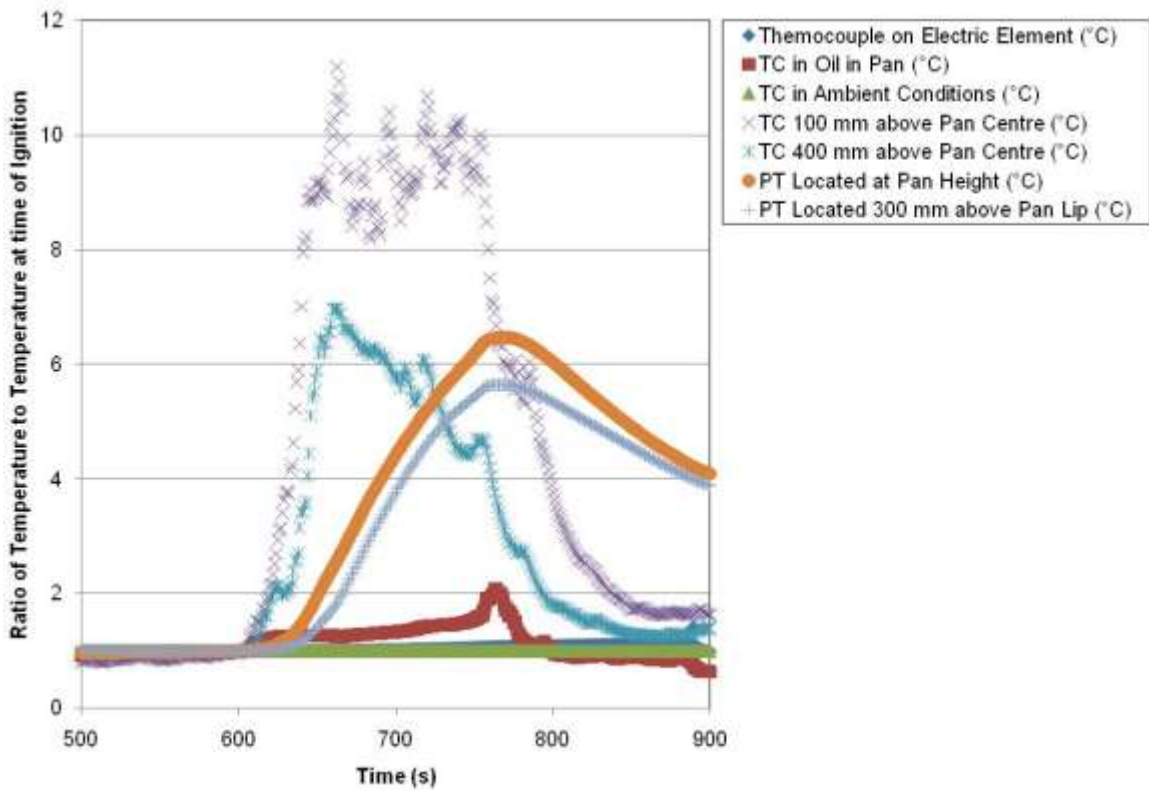


Figure 32: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 8.

## A.9 Test 9

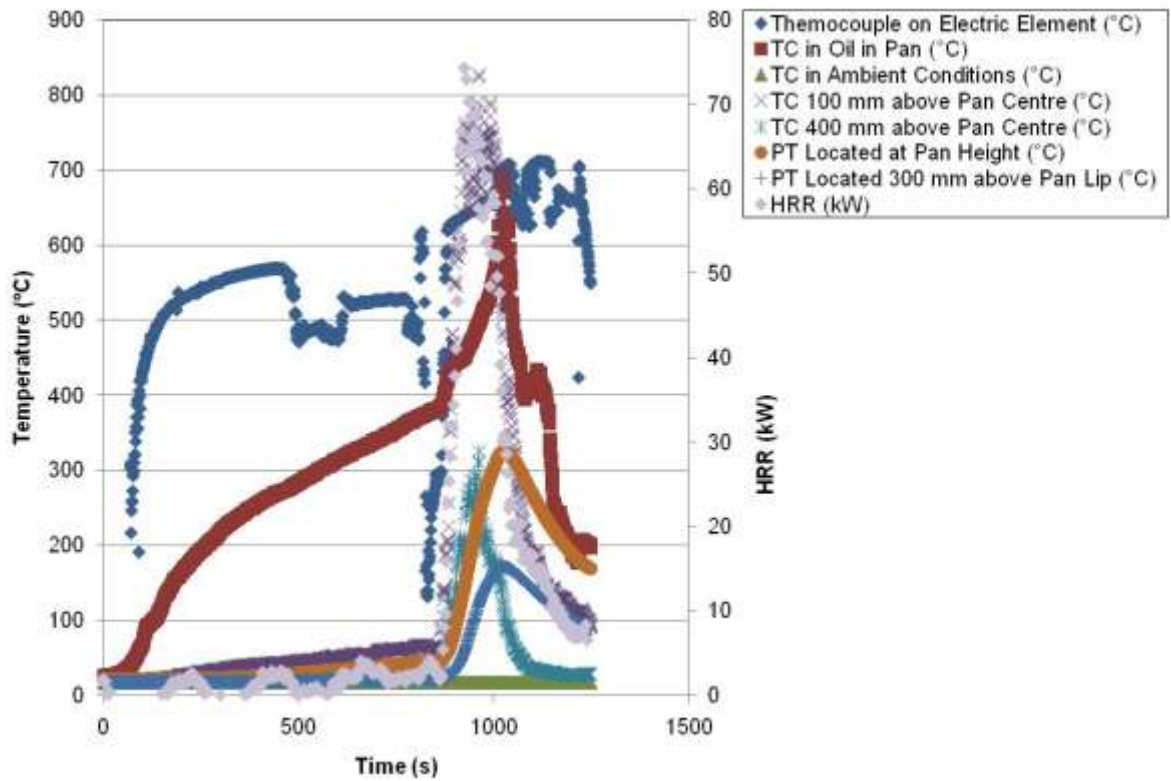


Figure 33: Measured temperatures of the thermocouples and plate thermometers for Test 9.

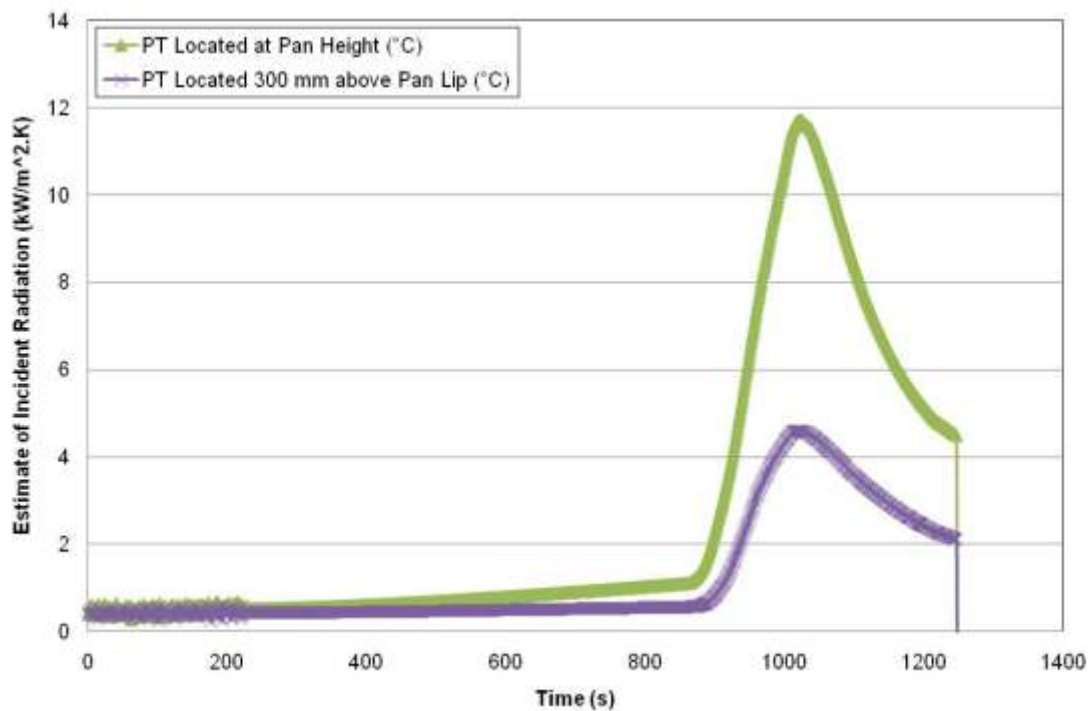


Figure 34: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 9.

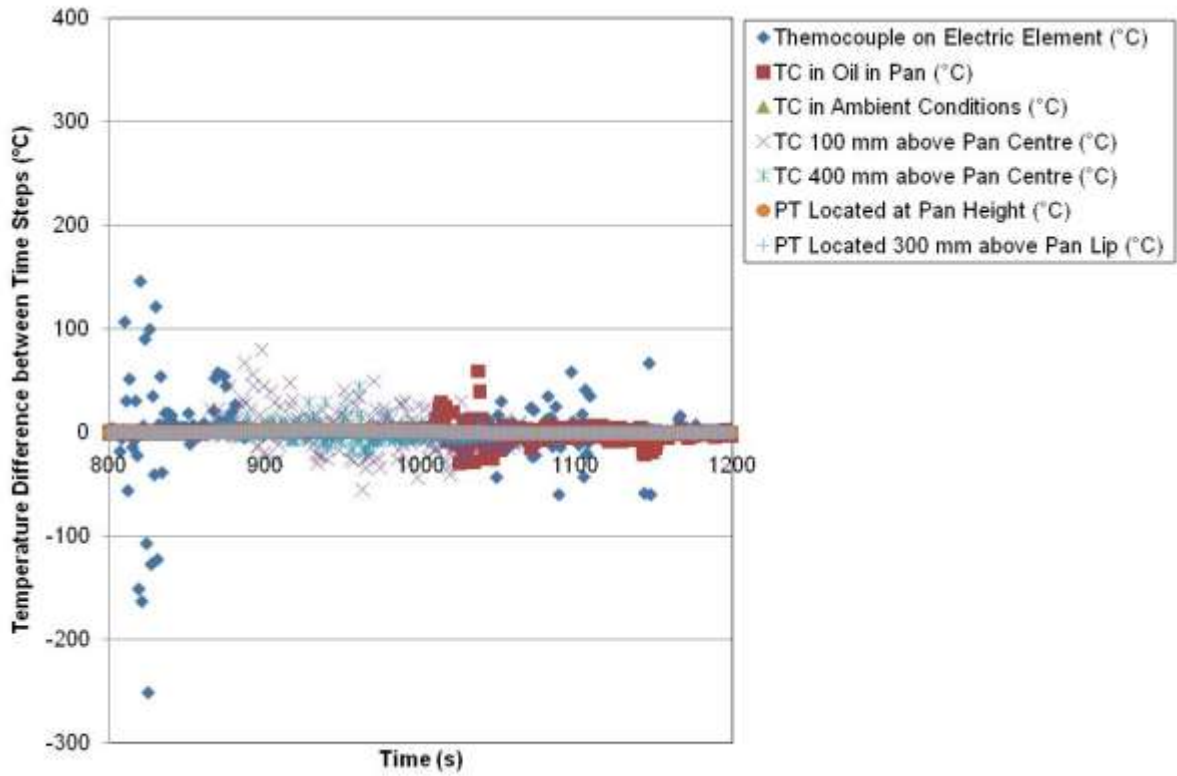


Figure 35: Differences of each of the variable temperatures to between sequential time steps for Test 9.

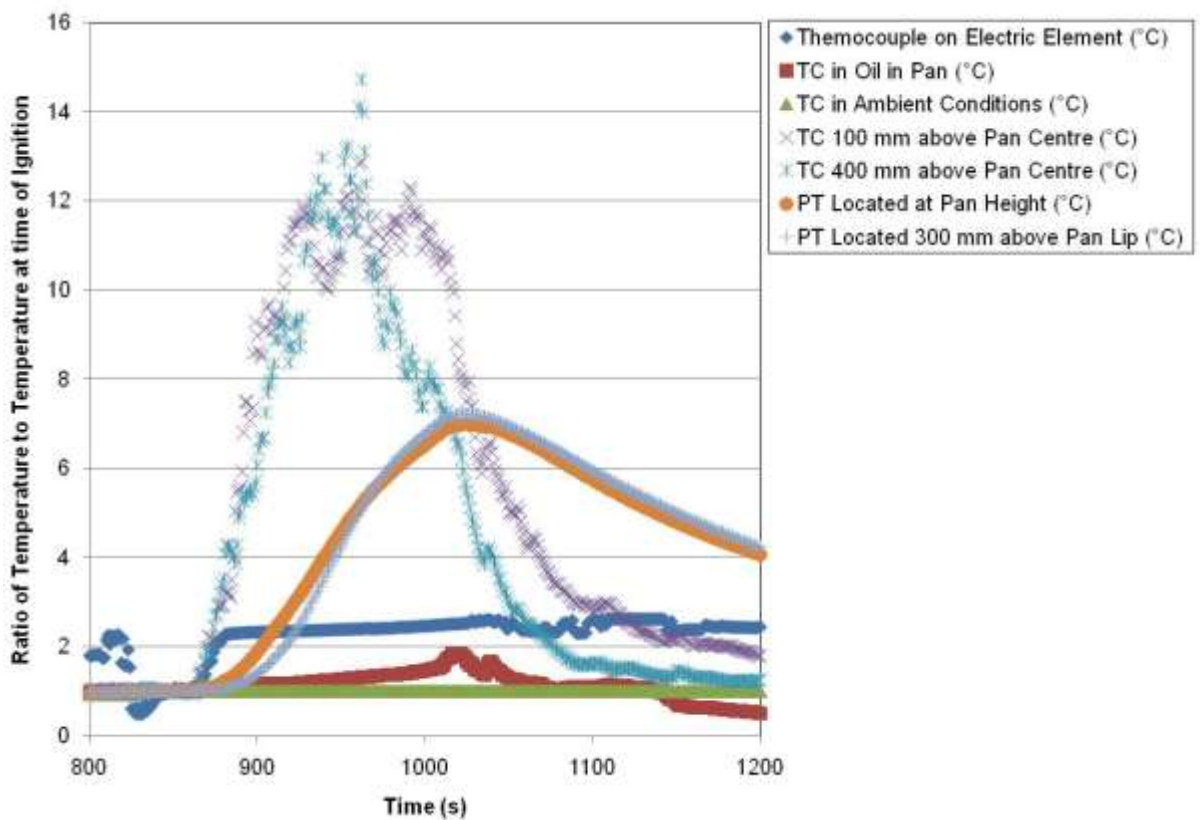


Figure 36: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 9.

## A.10 Test 10

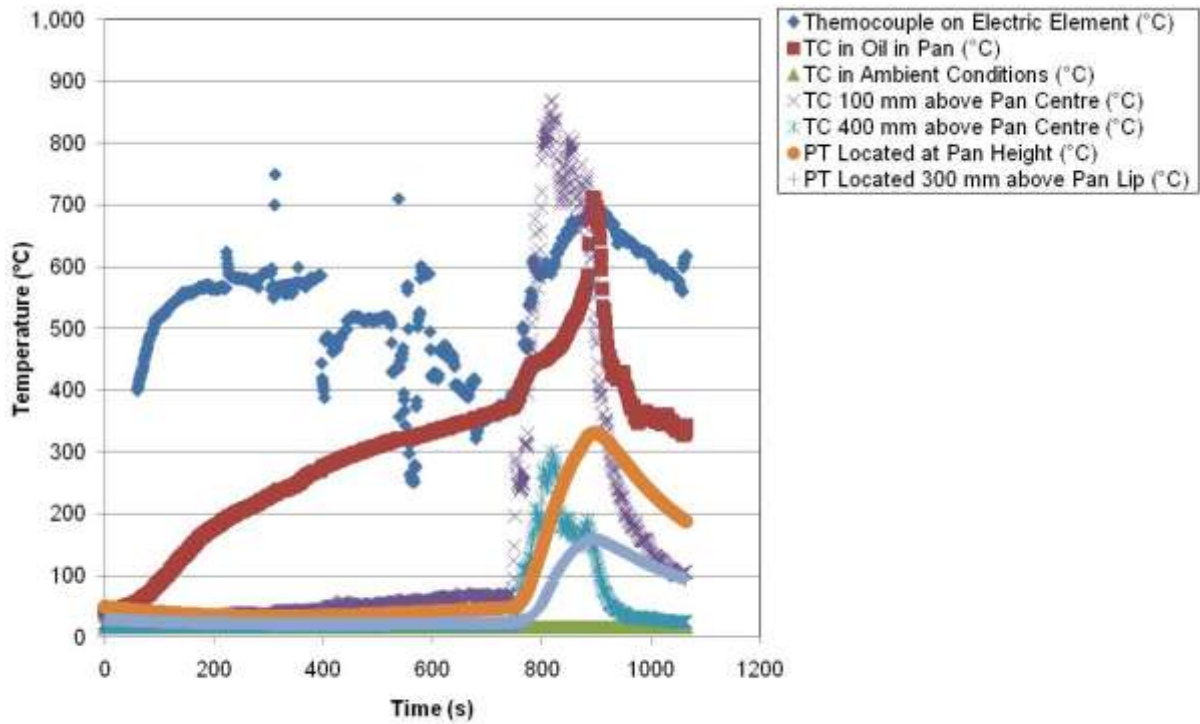


Figure 37: Measured temperatures of the thermocouples and plate thermometers for Test 10.

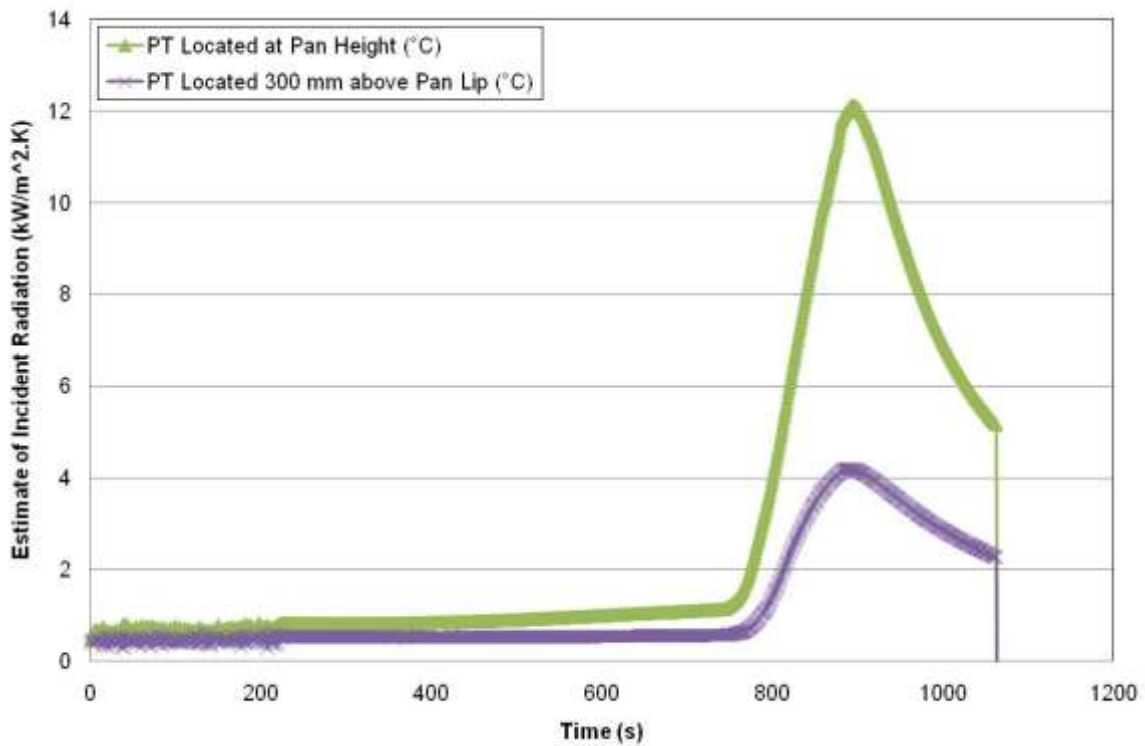


Figure 38: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 10.

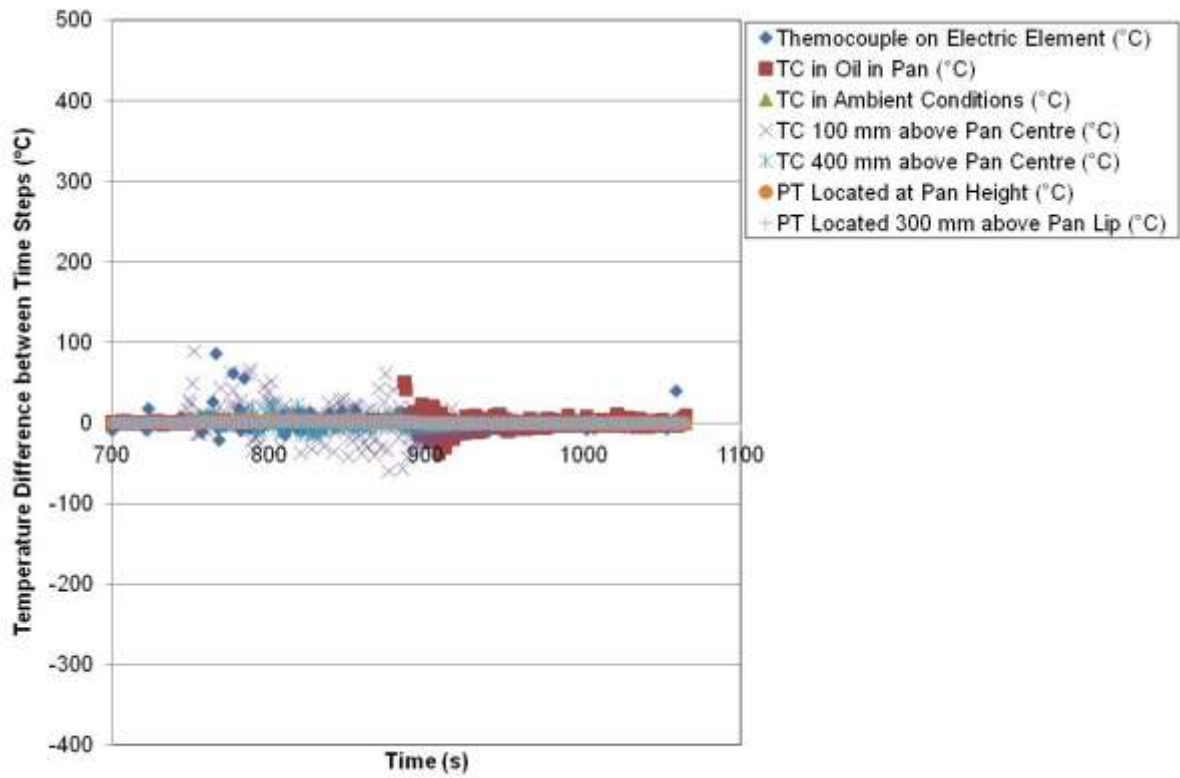


Figure 39: Differences of each of the variable temperatures to between sequential time steps for Test 10.

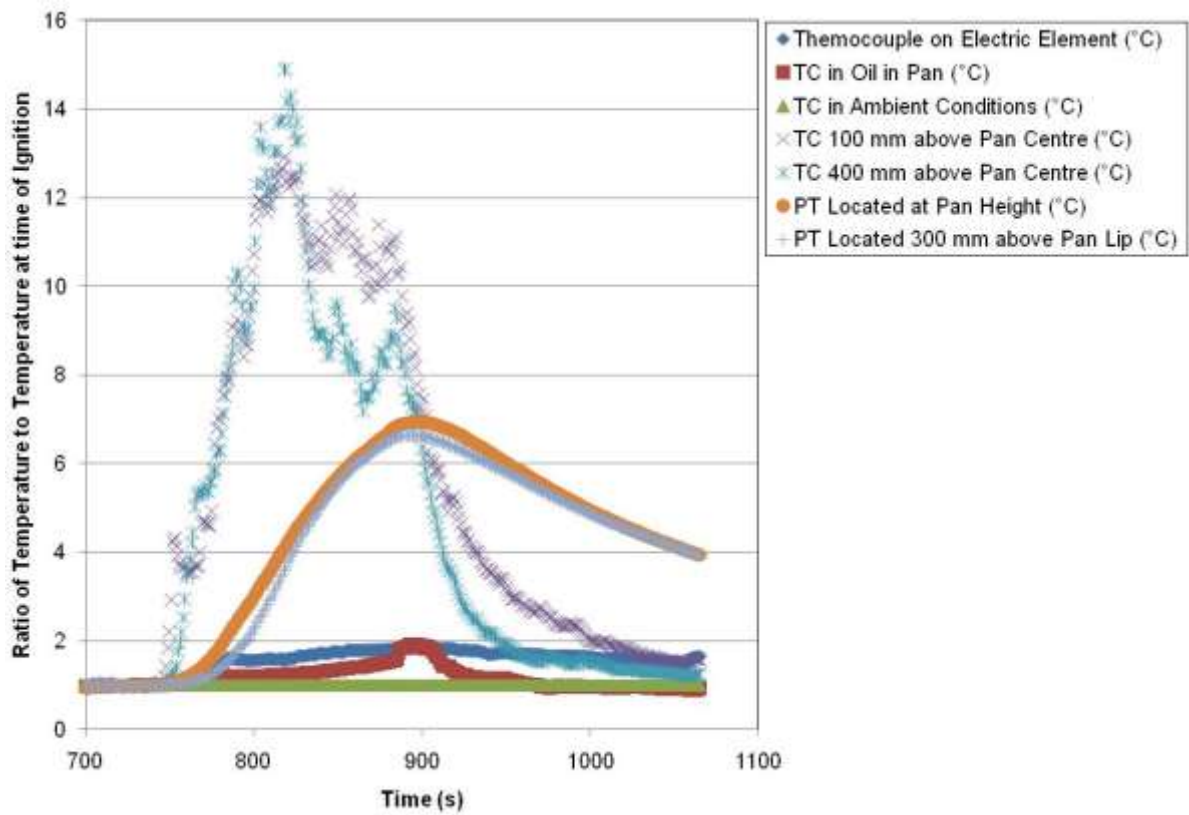


Figure 40: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 10.



## A.11 Test 11

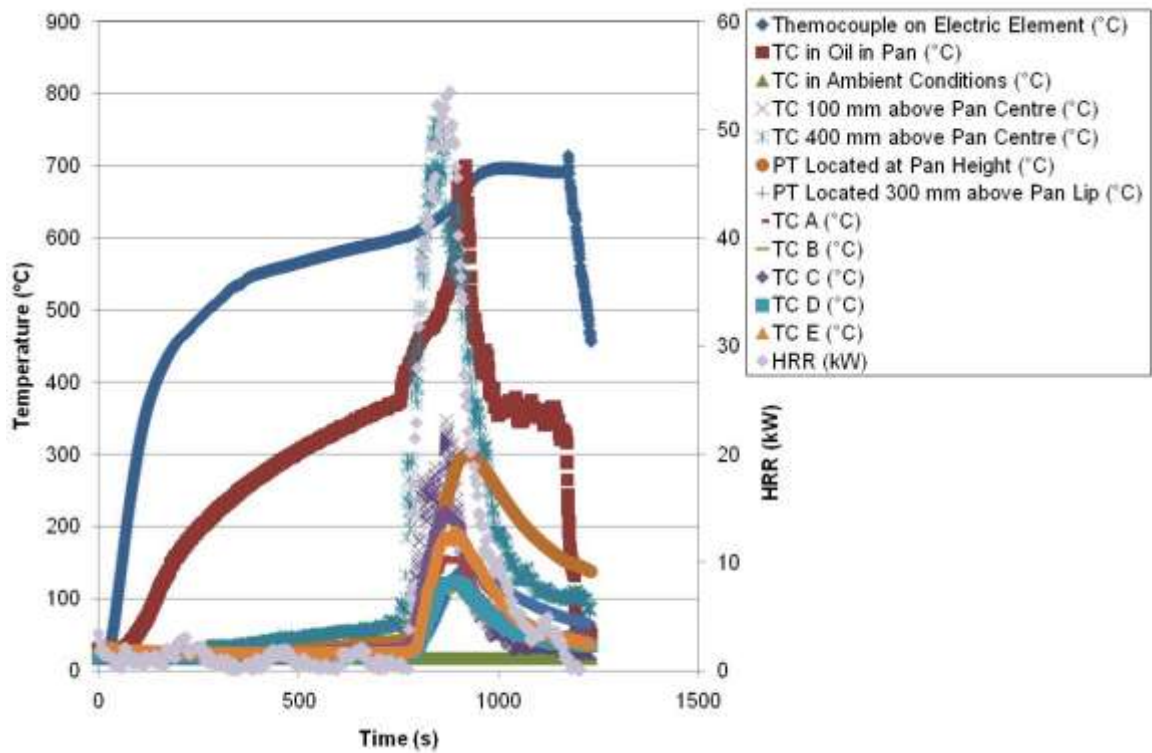


Figure 41: Measured temperatures of the thermocouples and plate thermometers for Test 11.

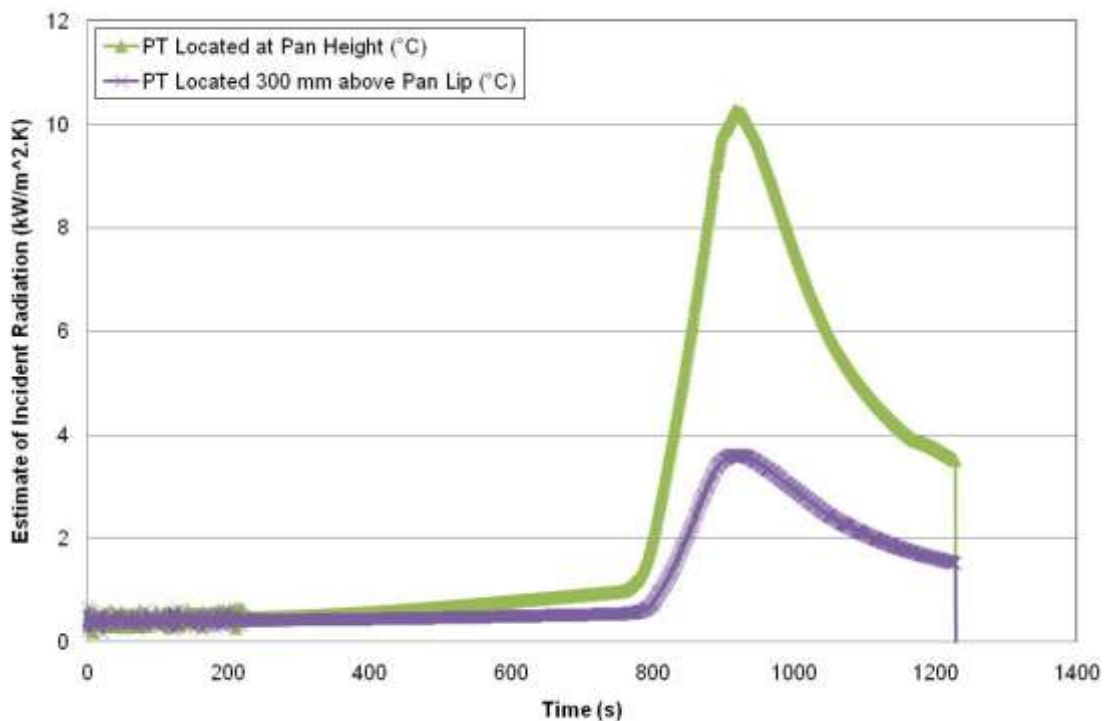


Figure 42: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 11.

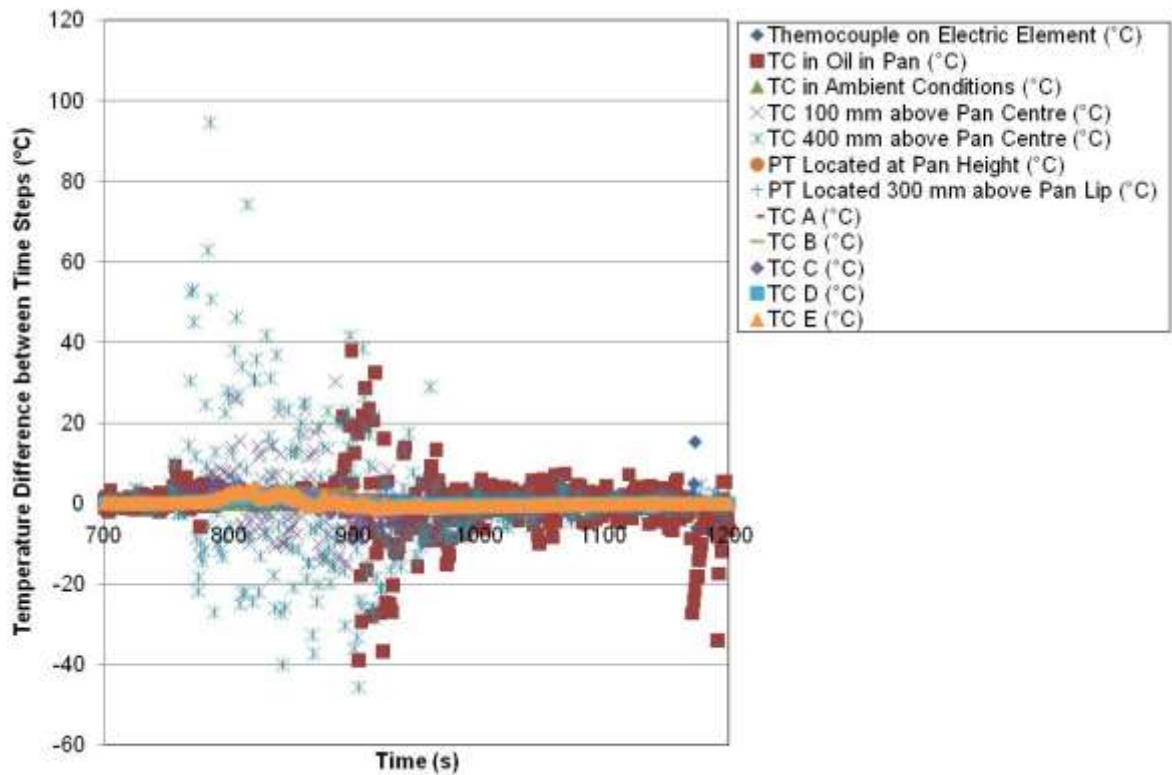


Figure 43: Differences of each of the variable temperatures to between sequential time steps for Test 11.

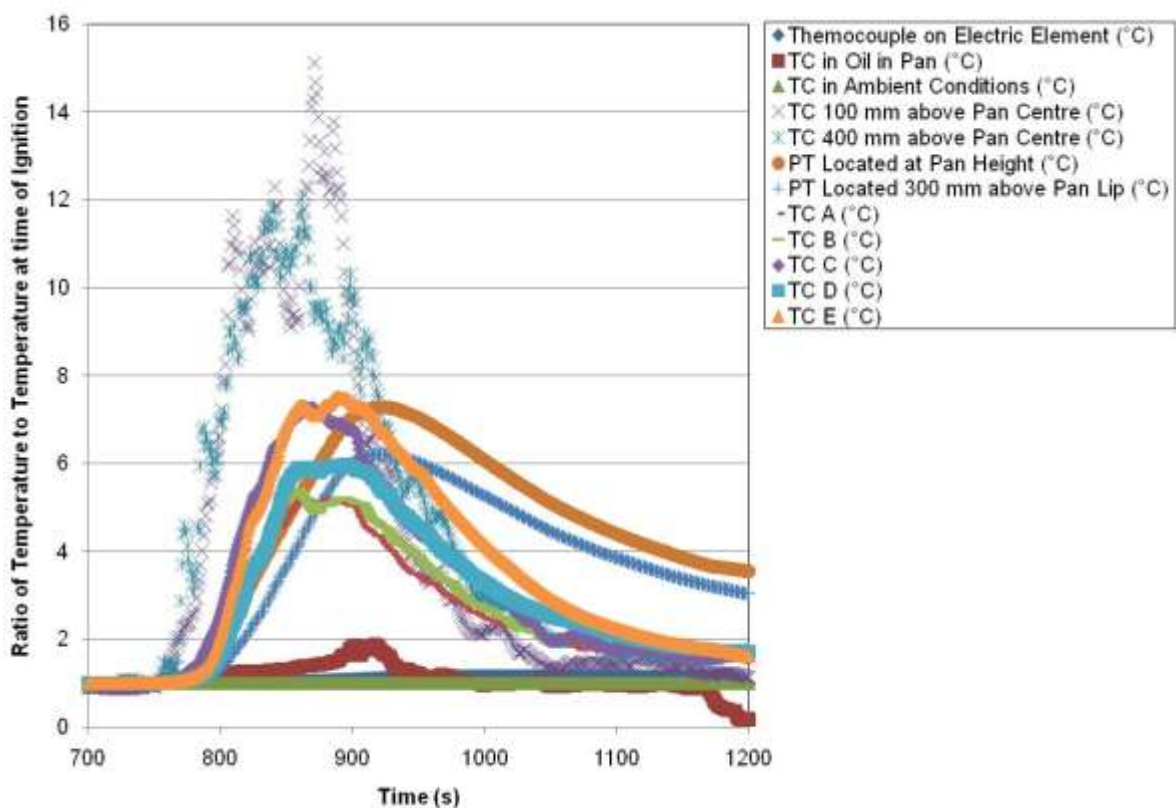


Figure 44: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 11.

## A.12 Test 12

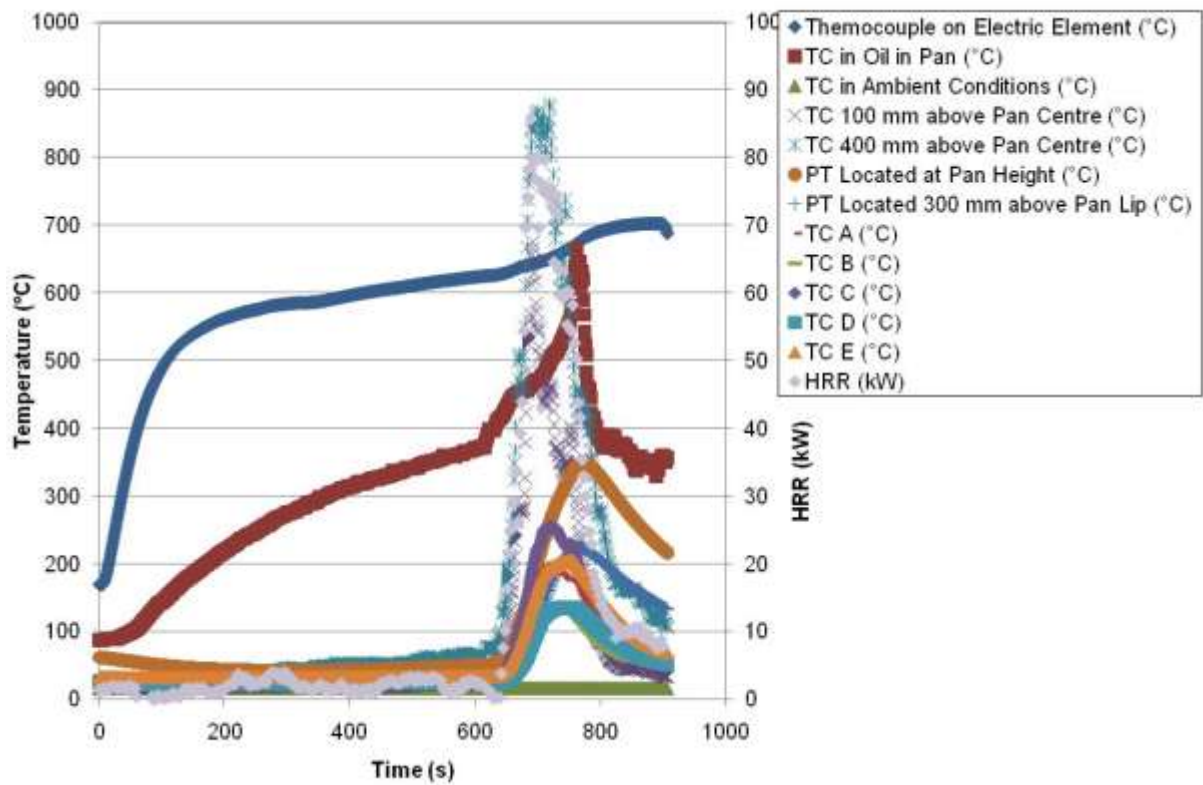


Figure 45: Measured temperatures of the thermocouples and plate thermometers for Test 12.

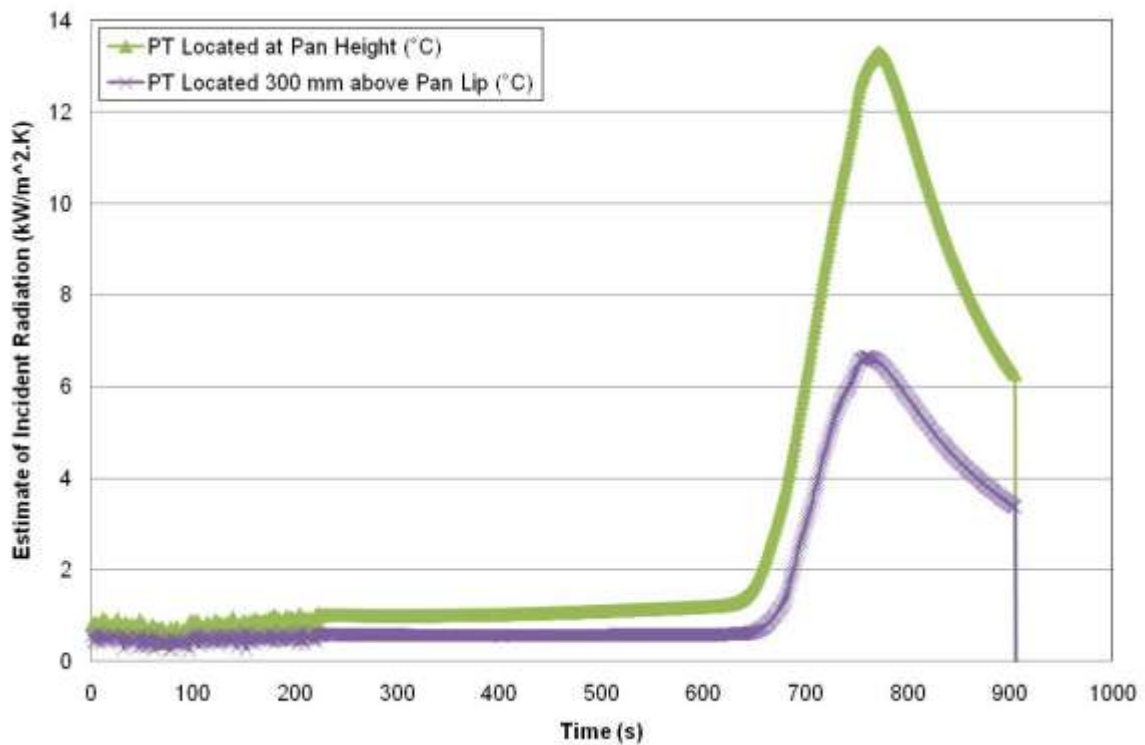


Figure 46: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 12.

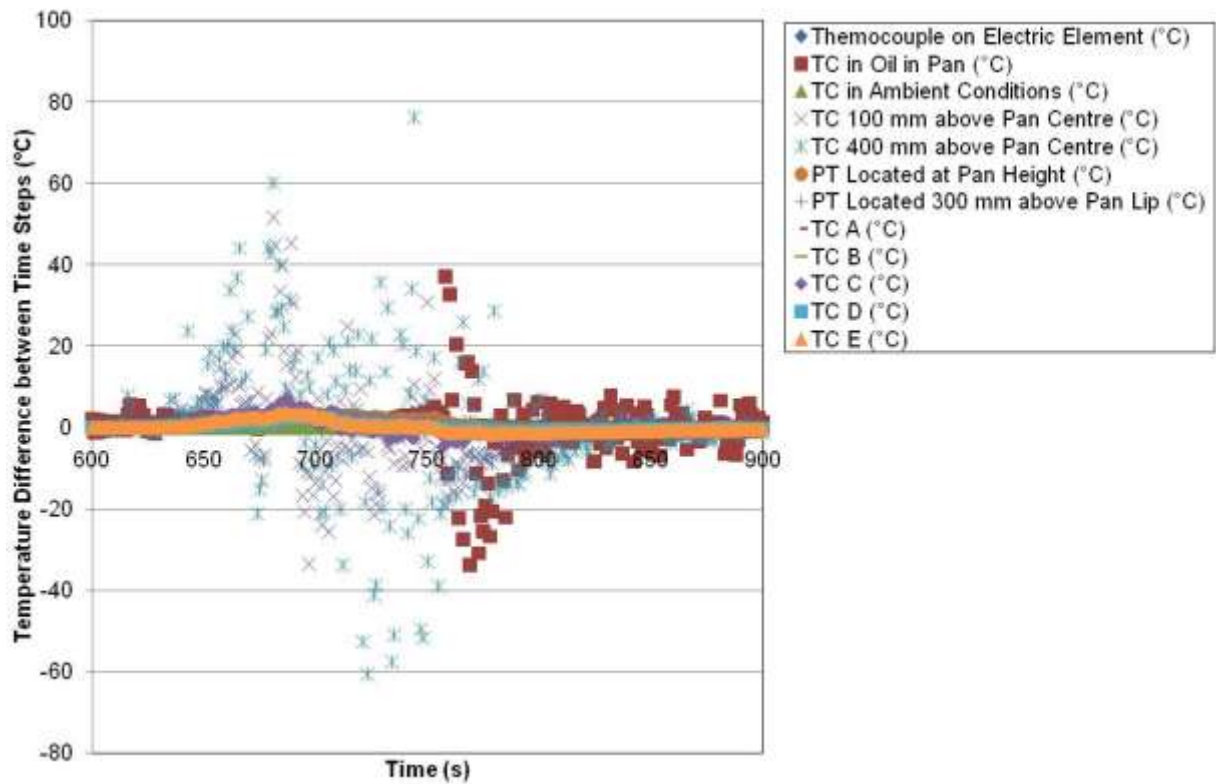


Figure 47: Differences of each of the variable temperatures to between sequential time steps for Test 12.

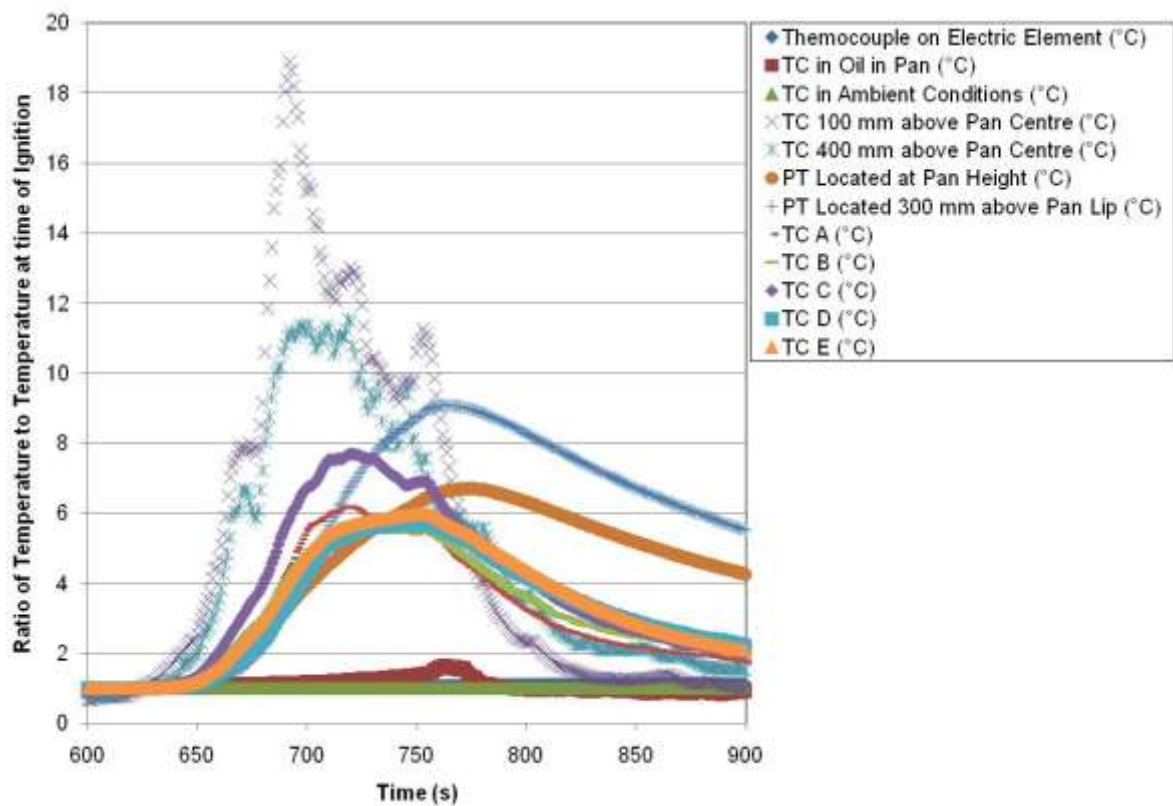


Figure 48: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 12.

## A.13 Test 13

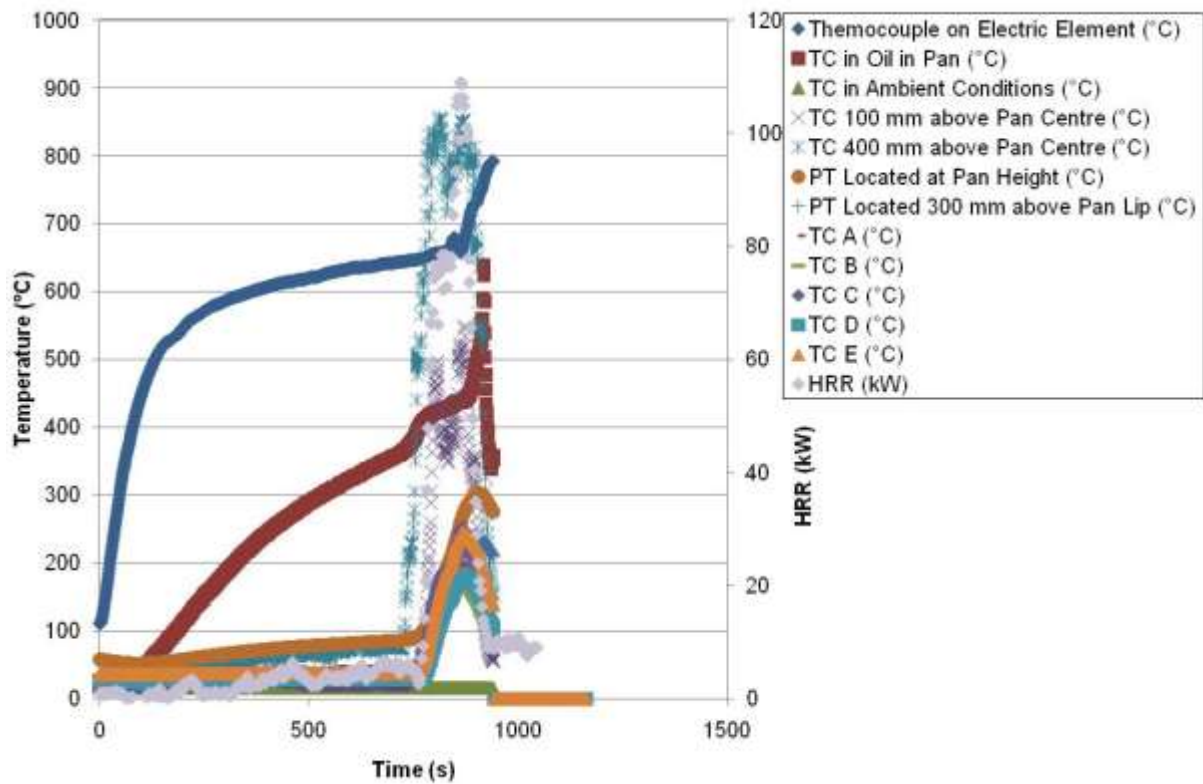


Figure 49: Measured temperatures of the thermocouples and plate thermometers for Test 13.

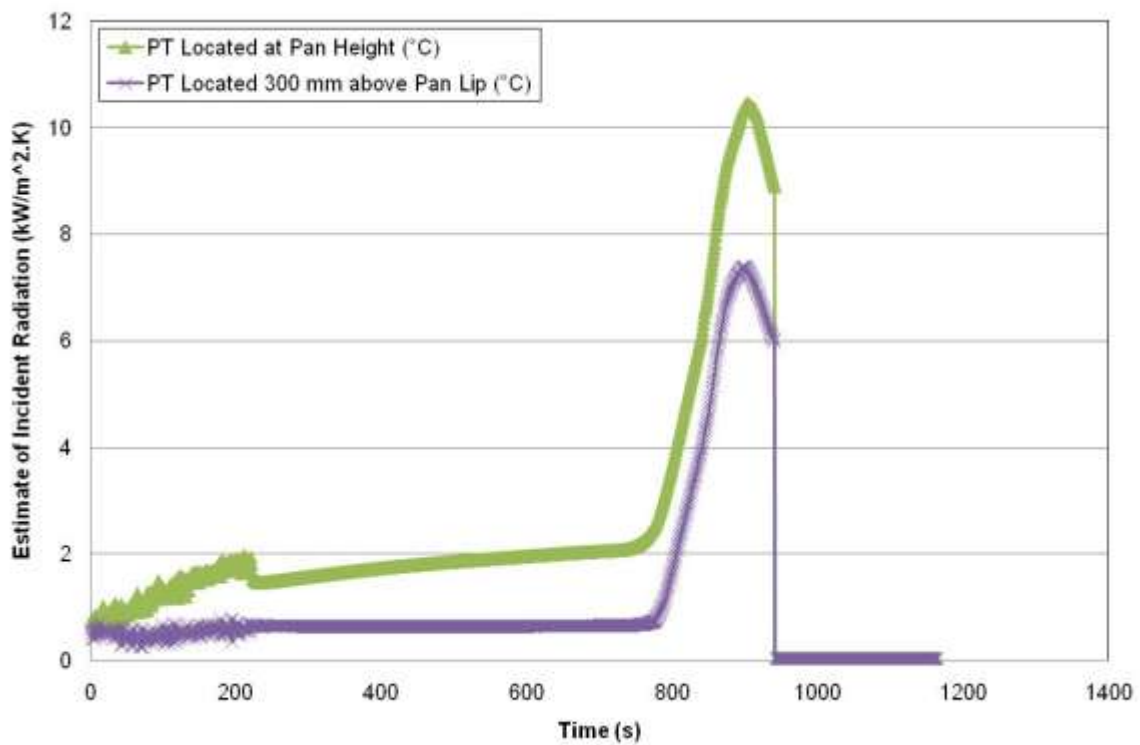


Figure 50: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 13.

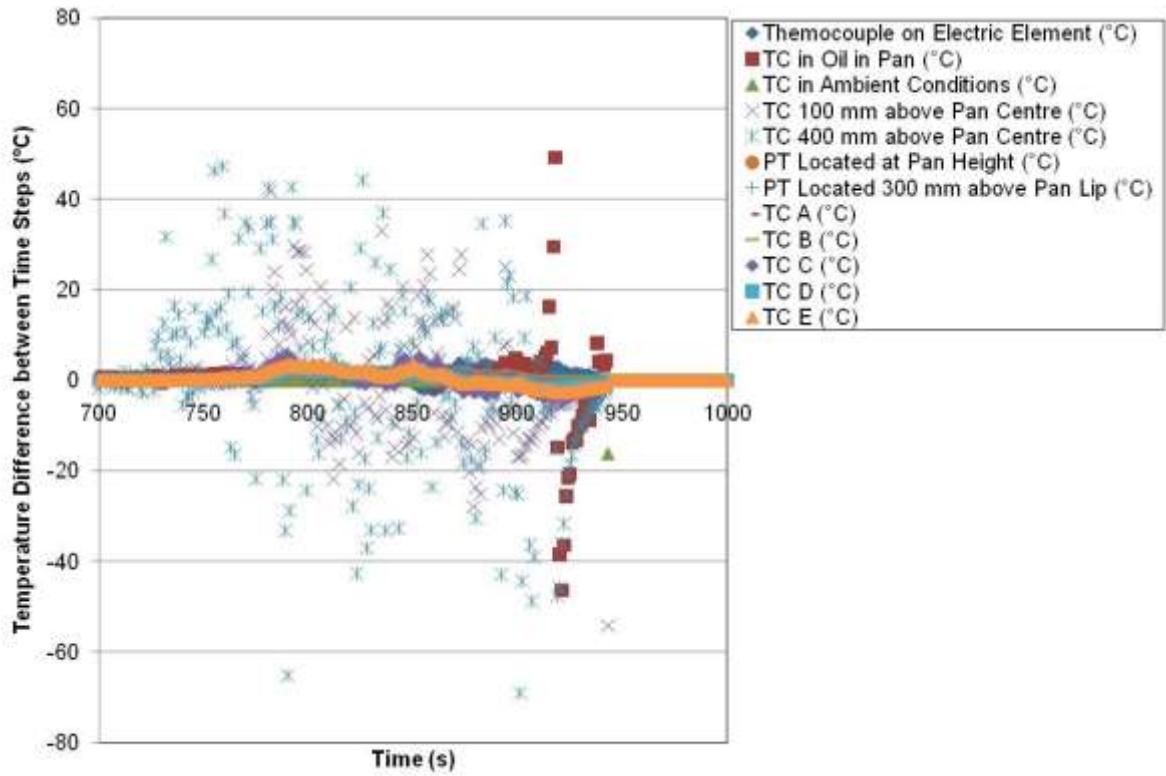


Figure 51: Differences of each of the variable temperatures to between sequential time steps for Test 13.

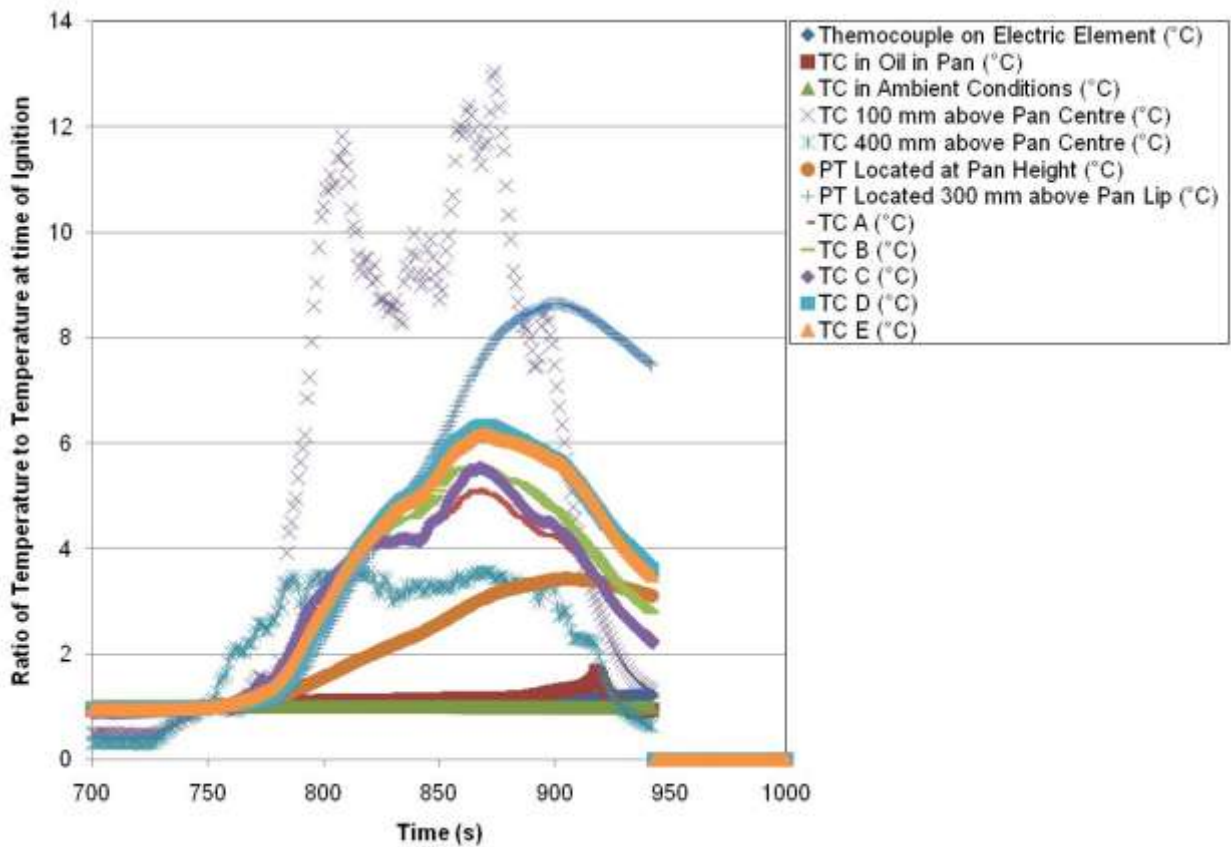


Figure 52: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 13.

## A.14 Test 14

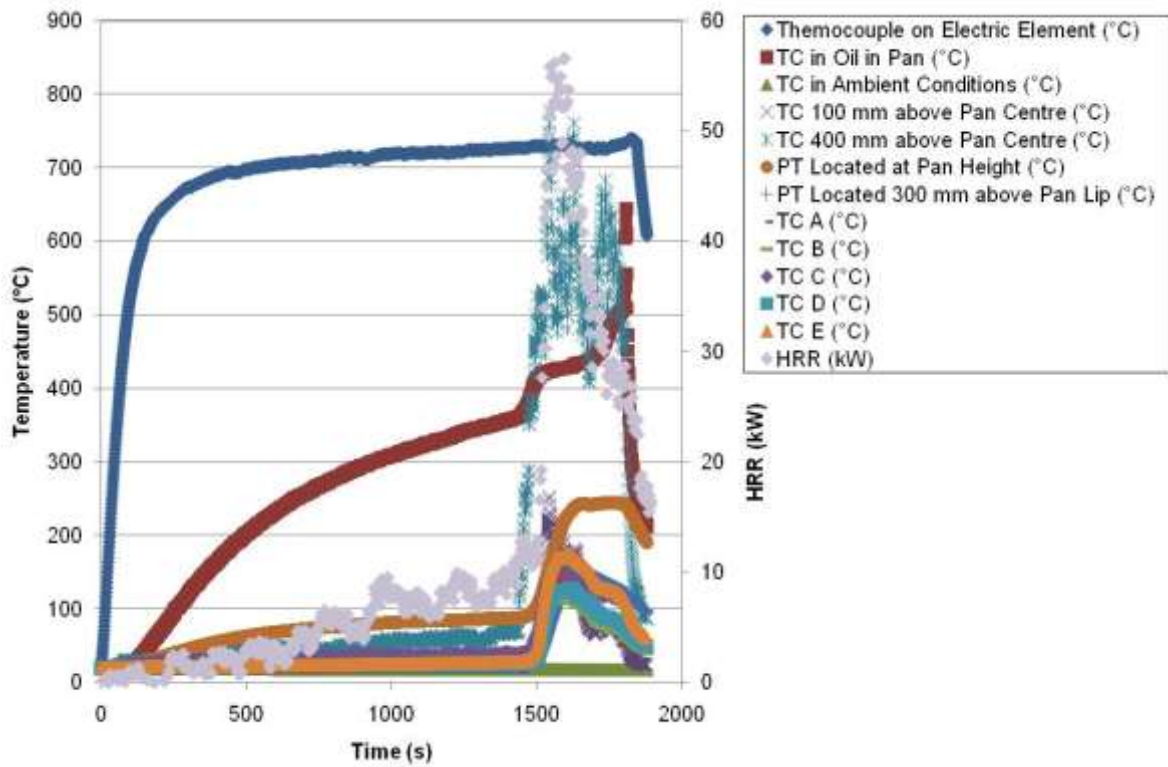


Figure 53: Measured temperatures of the thermocouples and plate thermometers for Test 14.

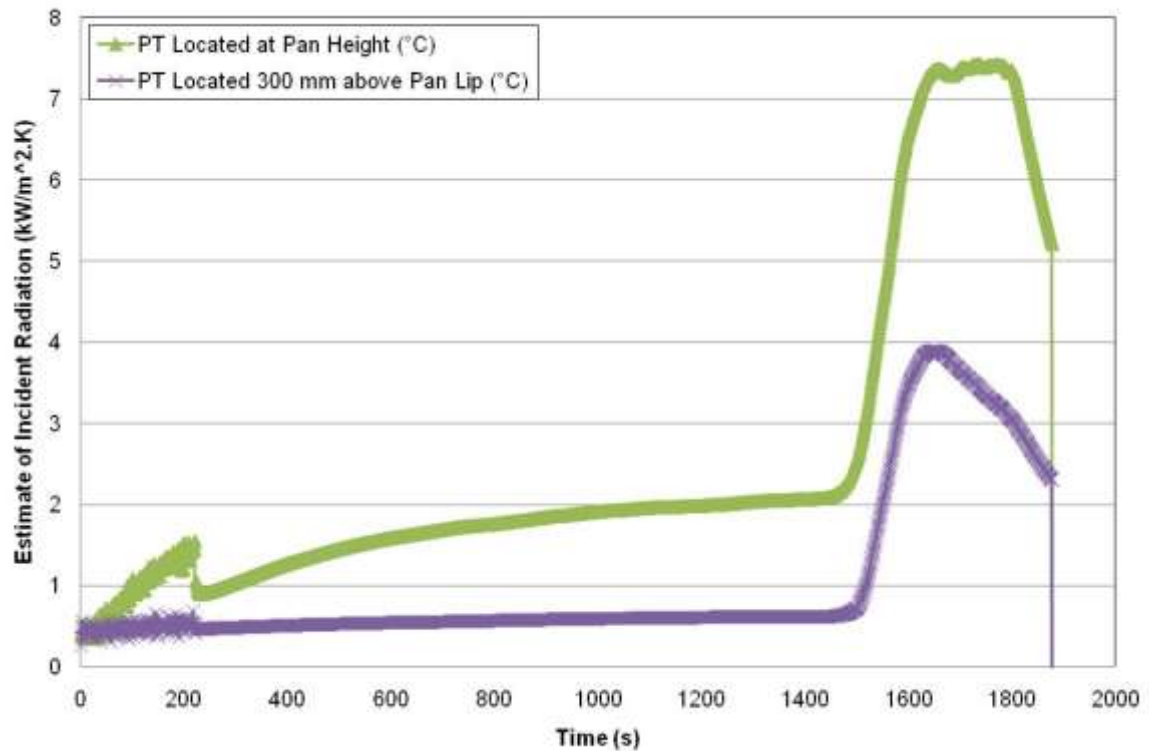


Figure 54: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 14.

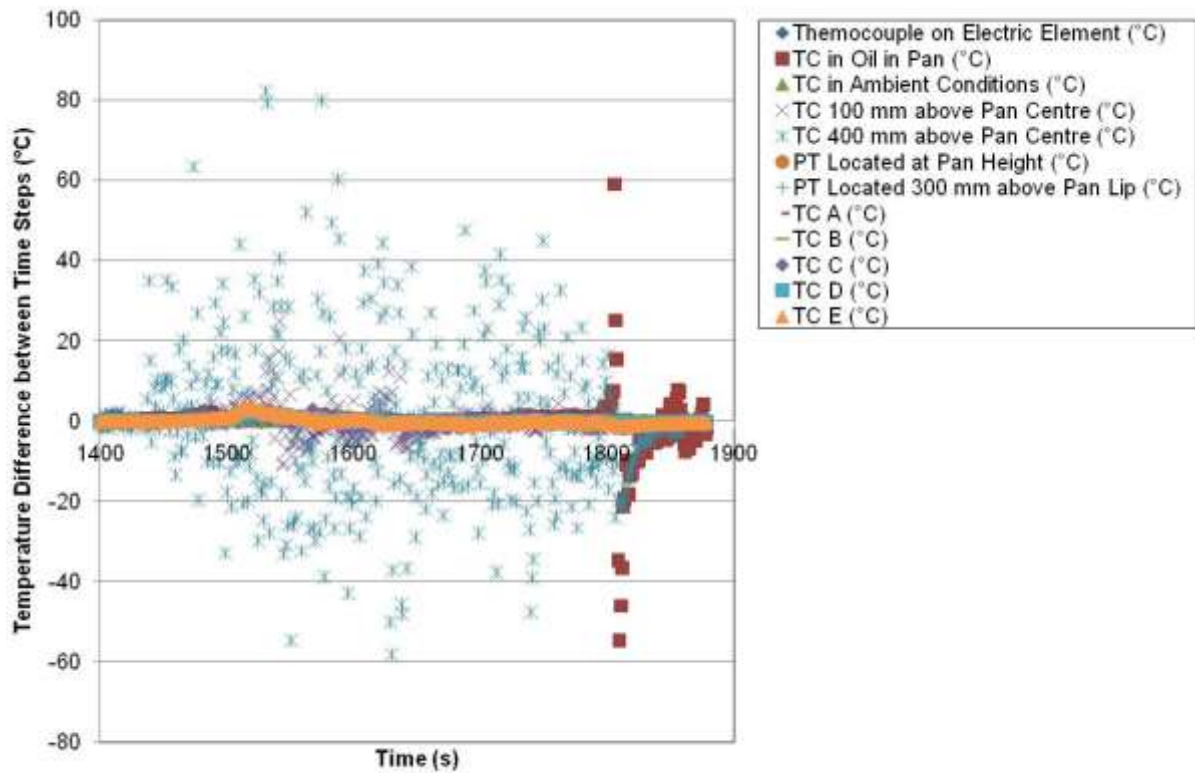


Figure 55: Differences of each of the variable temperatures to between sequential time steps for Test 14.

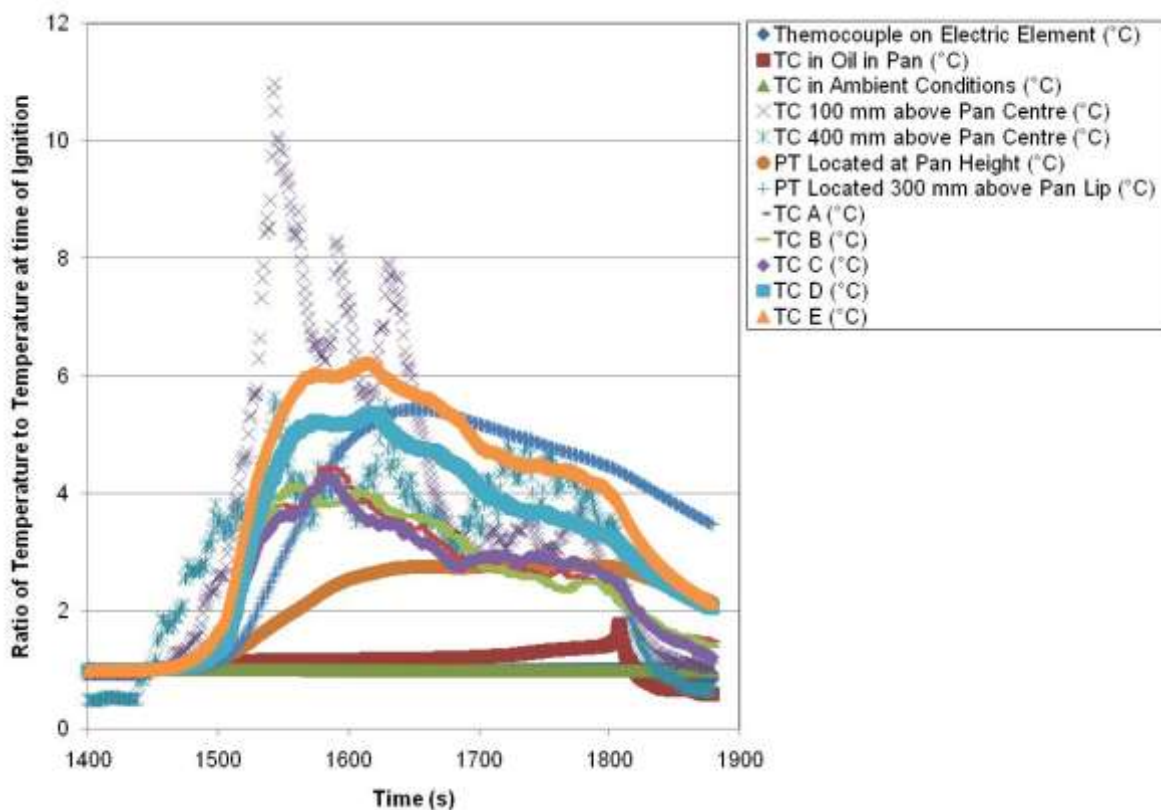


Figure 56: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 14.



## A.15 Test 15

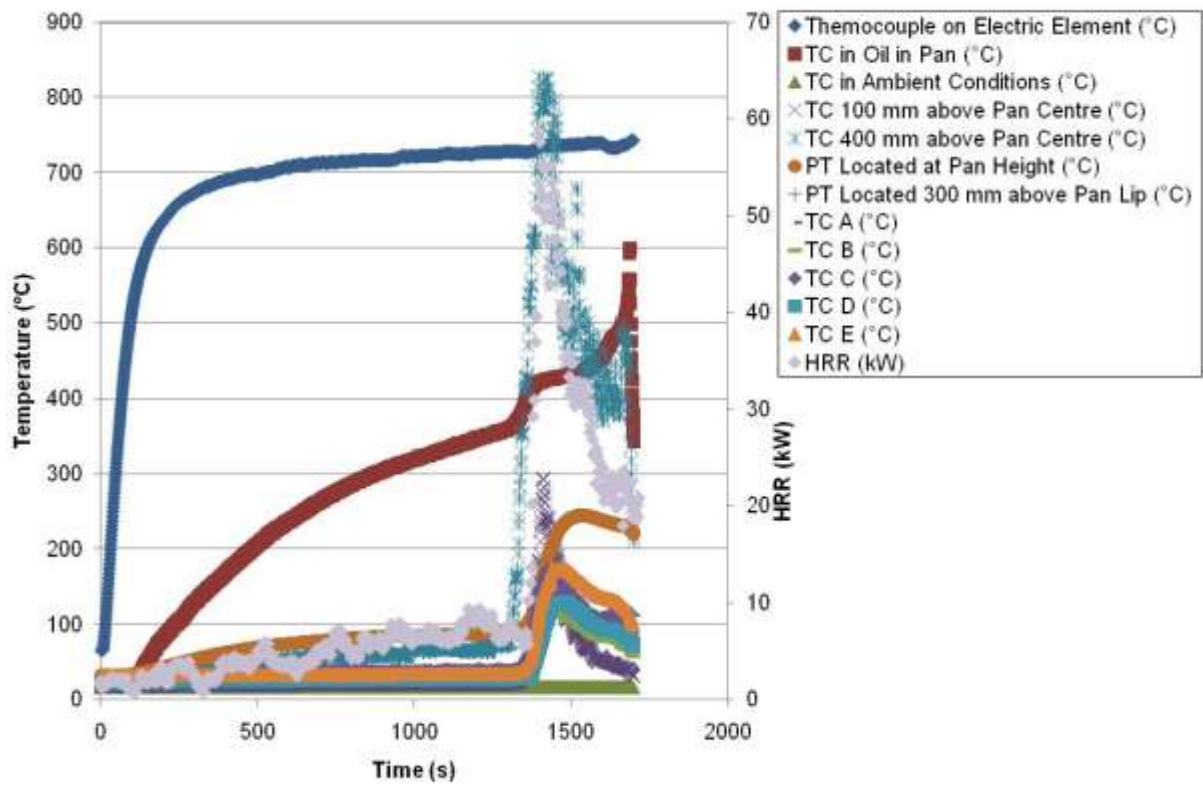


Figure 57: Measured temperatures of the thermocouples and plate thermometers for Test 15.

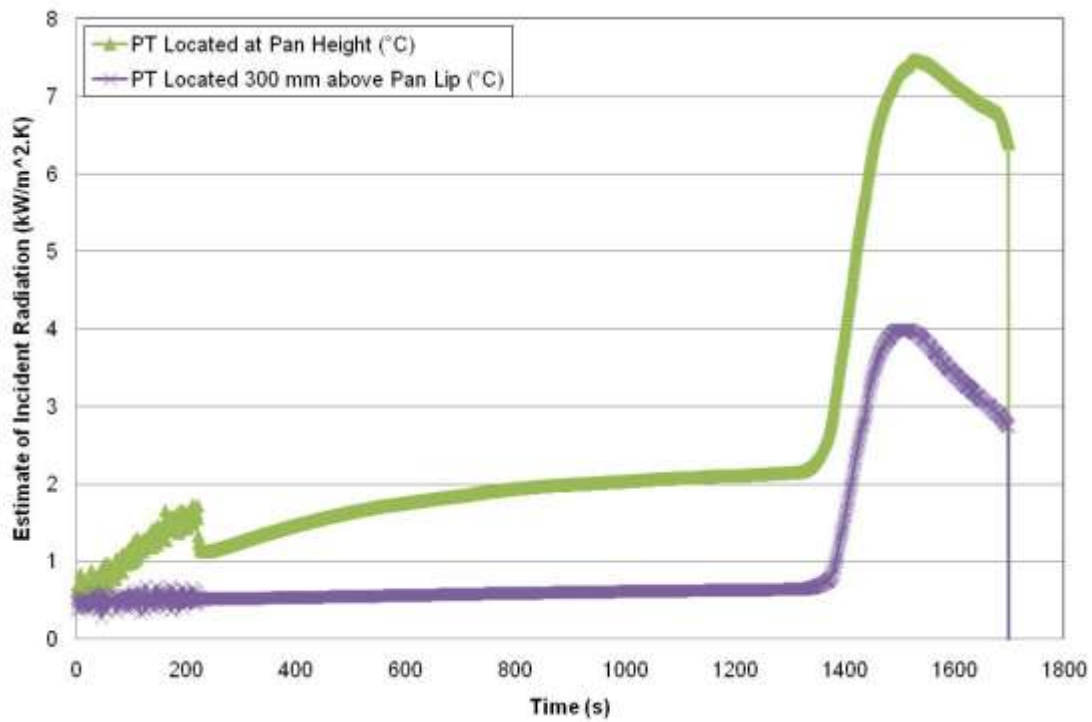


Figure 58: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 15.

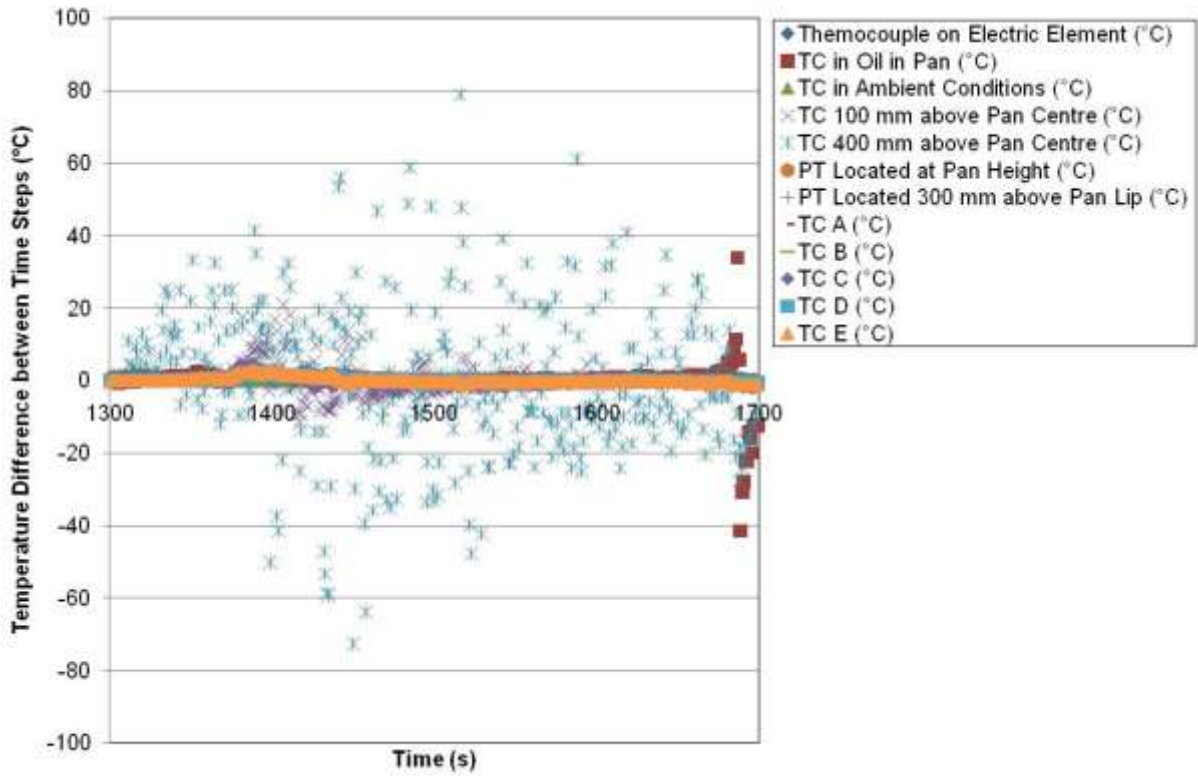


Figure 59: Differences of each of the variable temperatures to between sequential time steps for Test 15.

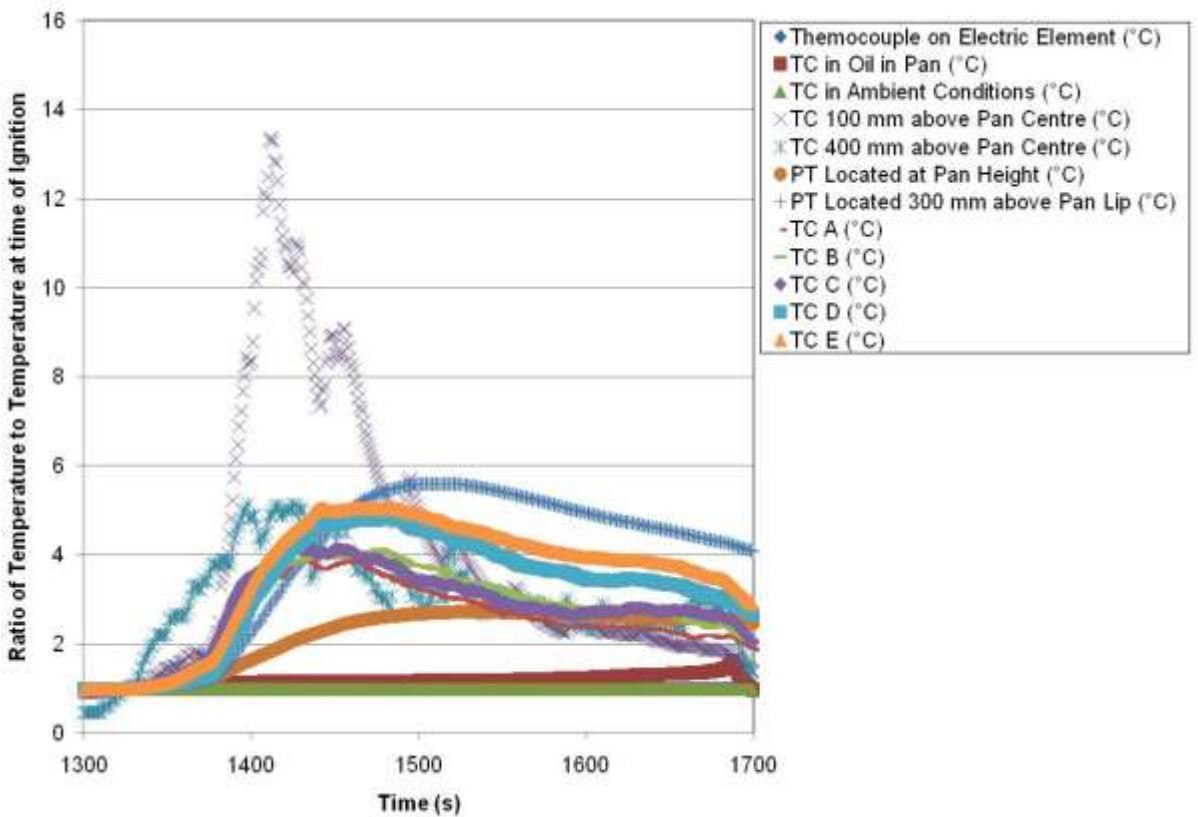


Figure 60: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 15.

## A.16 Test 16

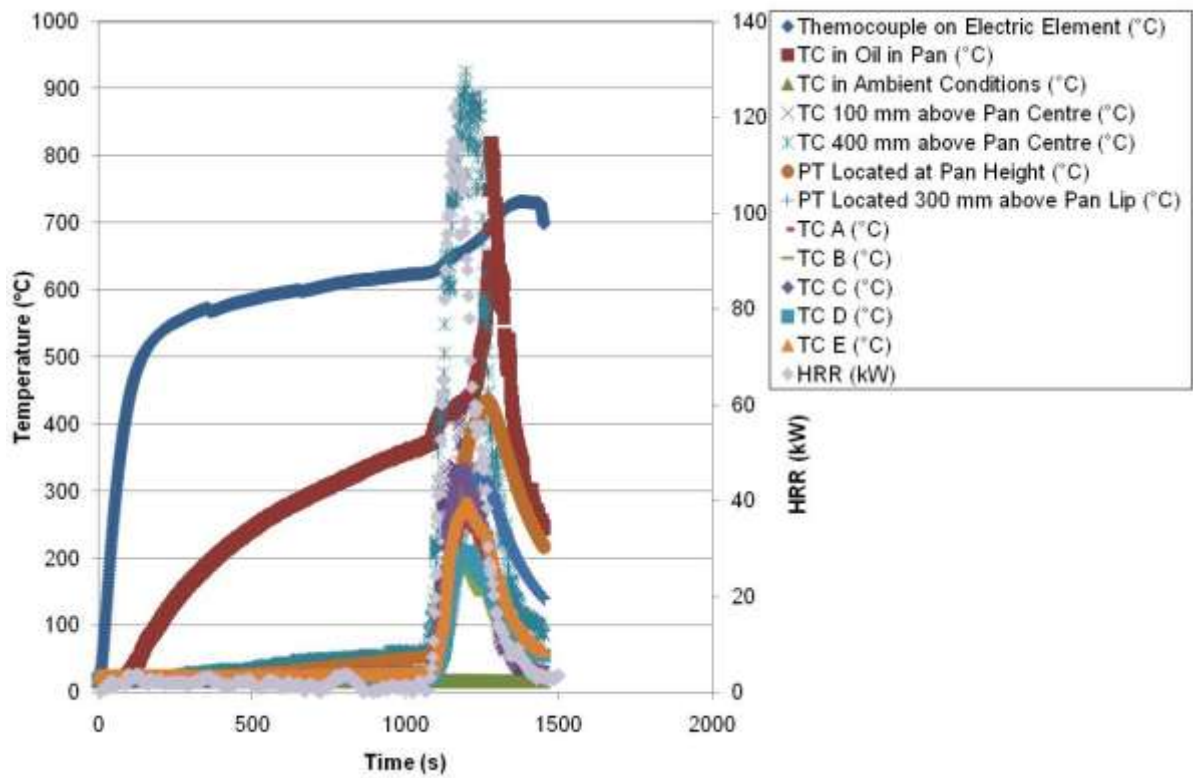


Figure 61: Measured temperatures of the thermocouples and plate thermometers for Test 16.

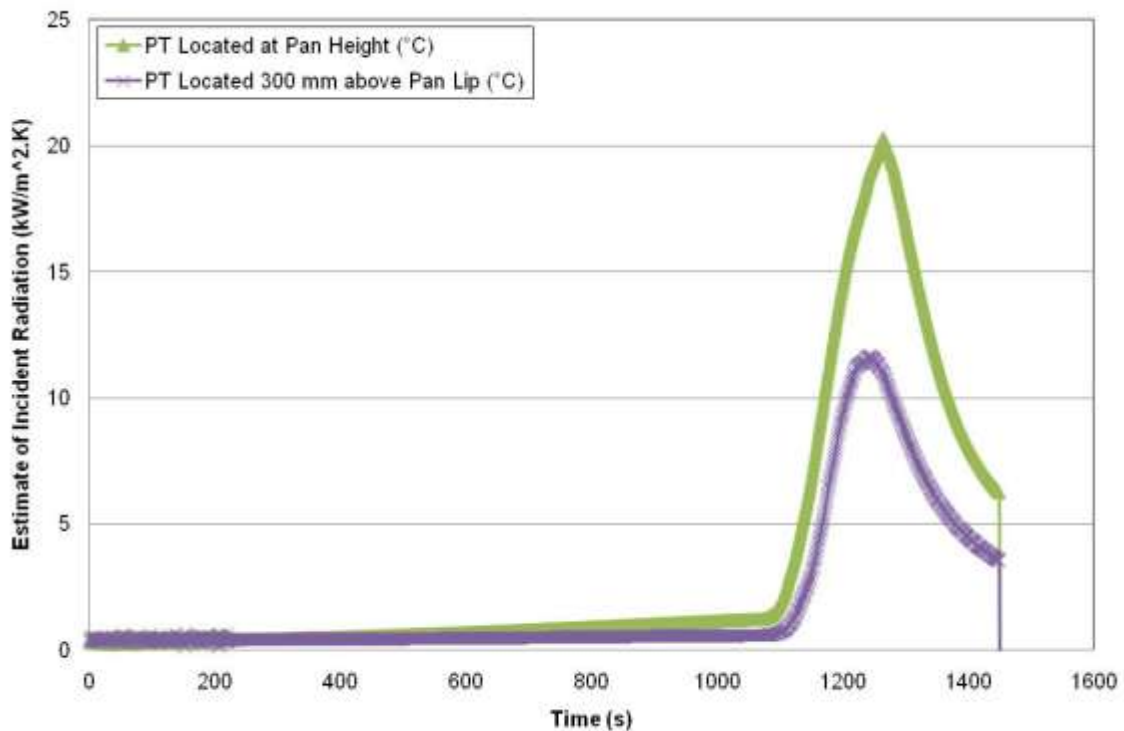


Figure 62: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 16.

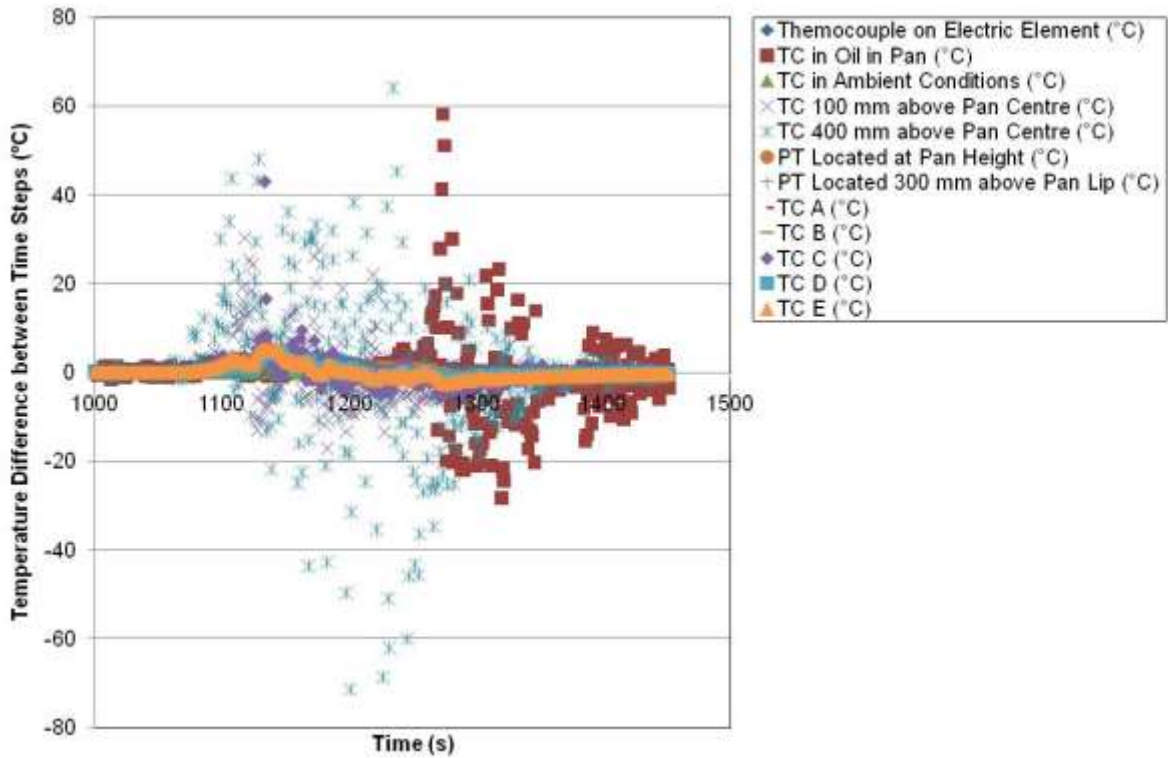


Figure 63: Differences of each of the variable temperatures to between sequential time steps for Test 16.

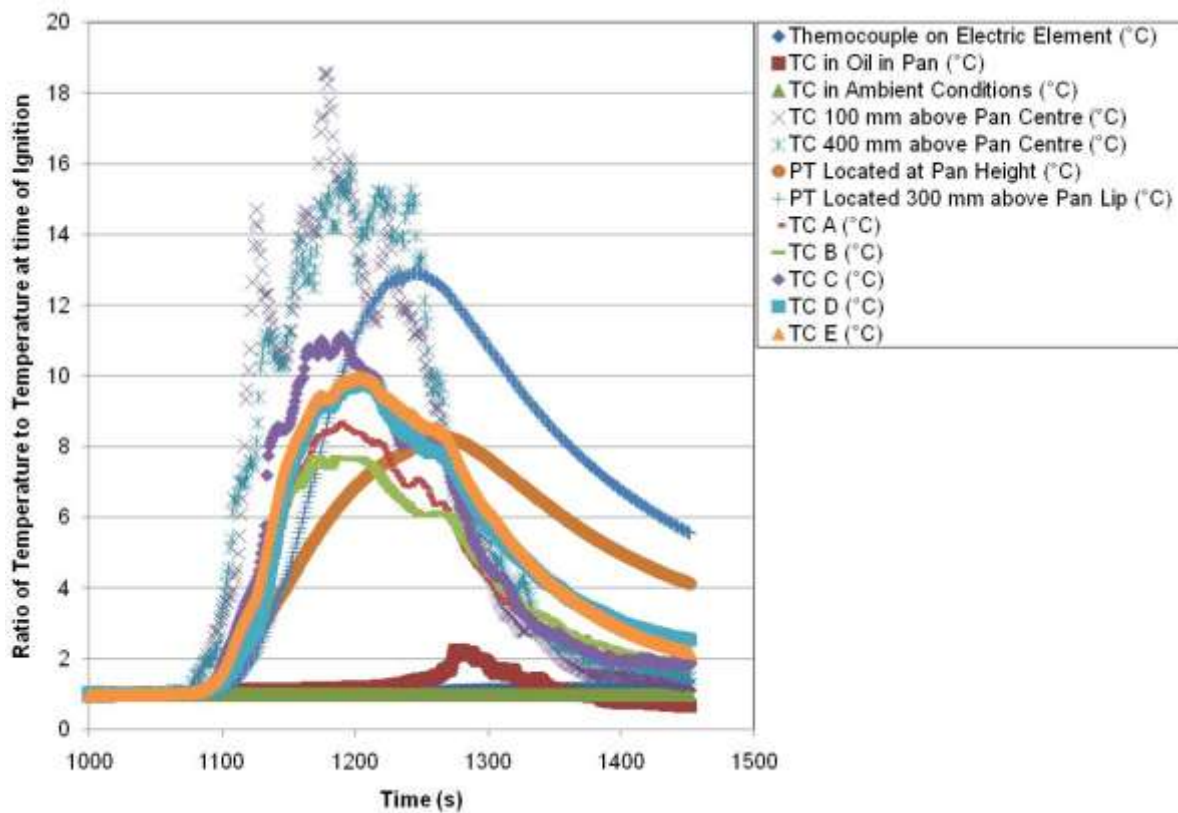


Figure 64: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 16.

## A.17 Test 17

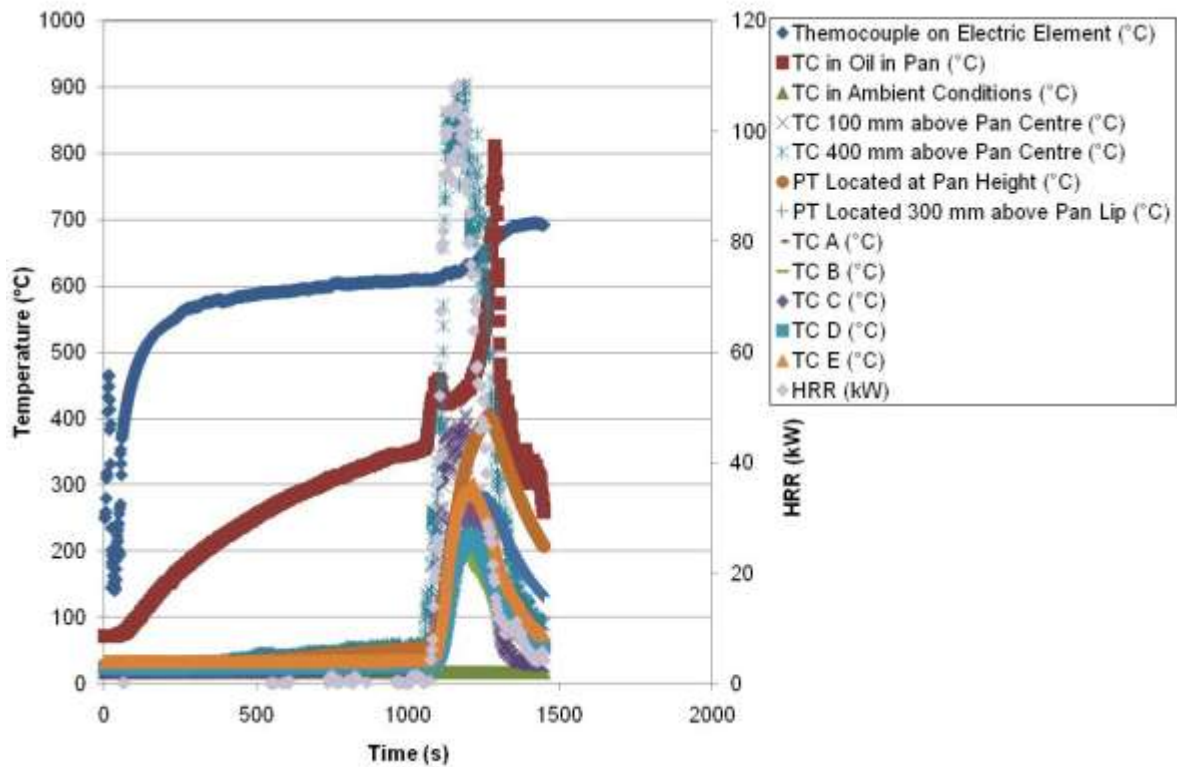


Figure 65: Measured temperatures of the thermocouples and plate thermometers for Test 17.

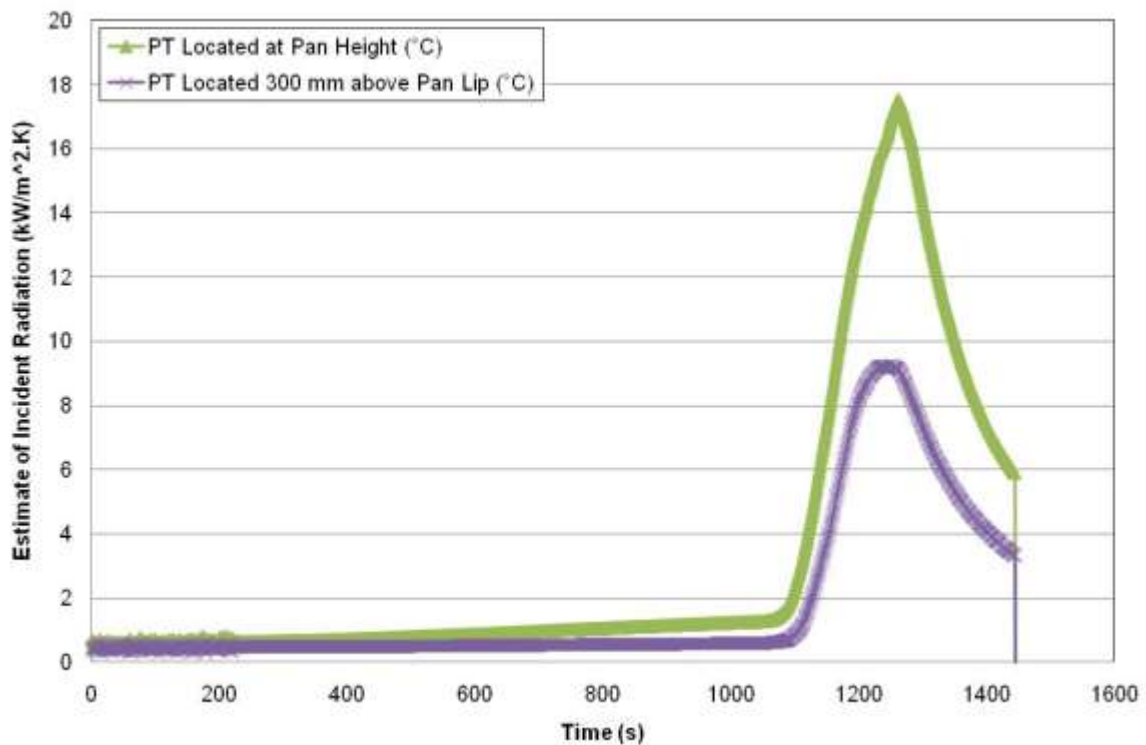


Figure 66: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 17.

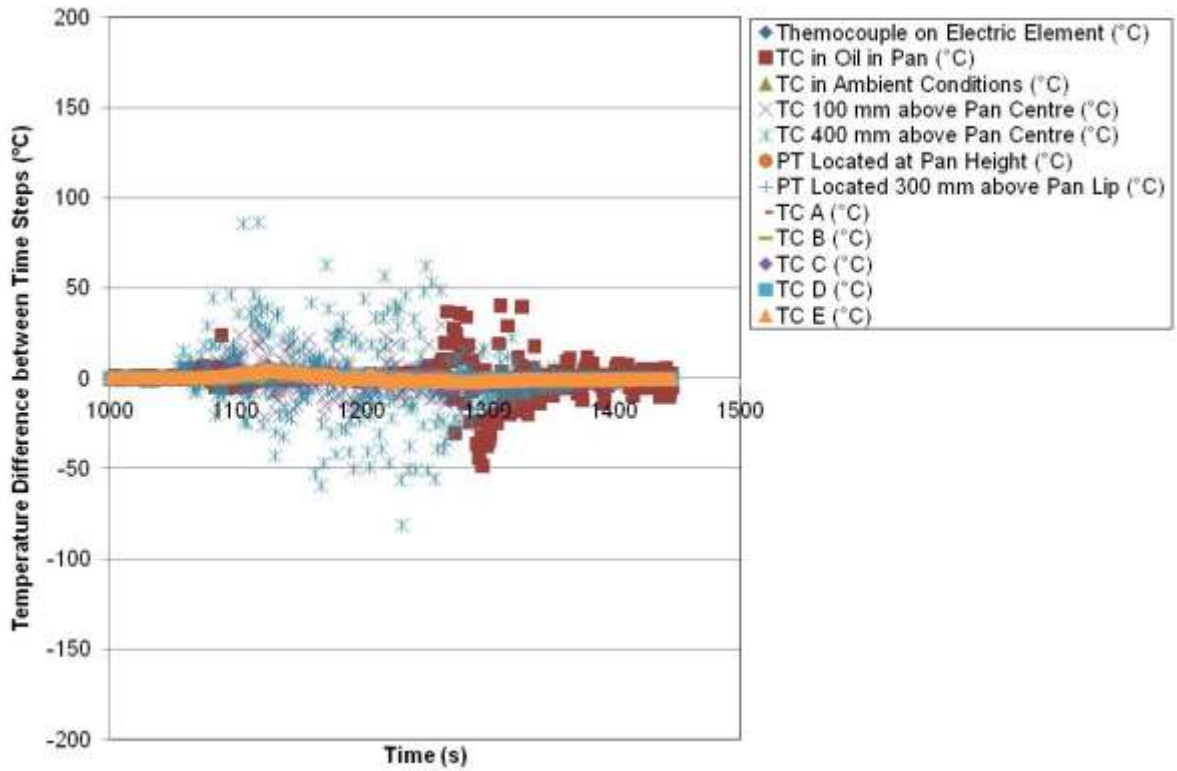


Figure 67: Differences of each of the variable temperatures to between sequential time steps for Test 17.

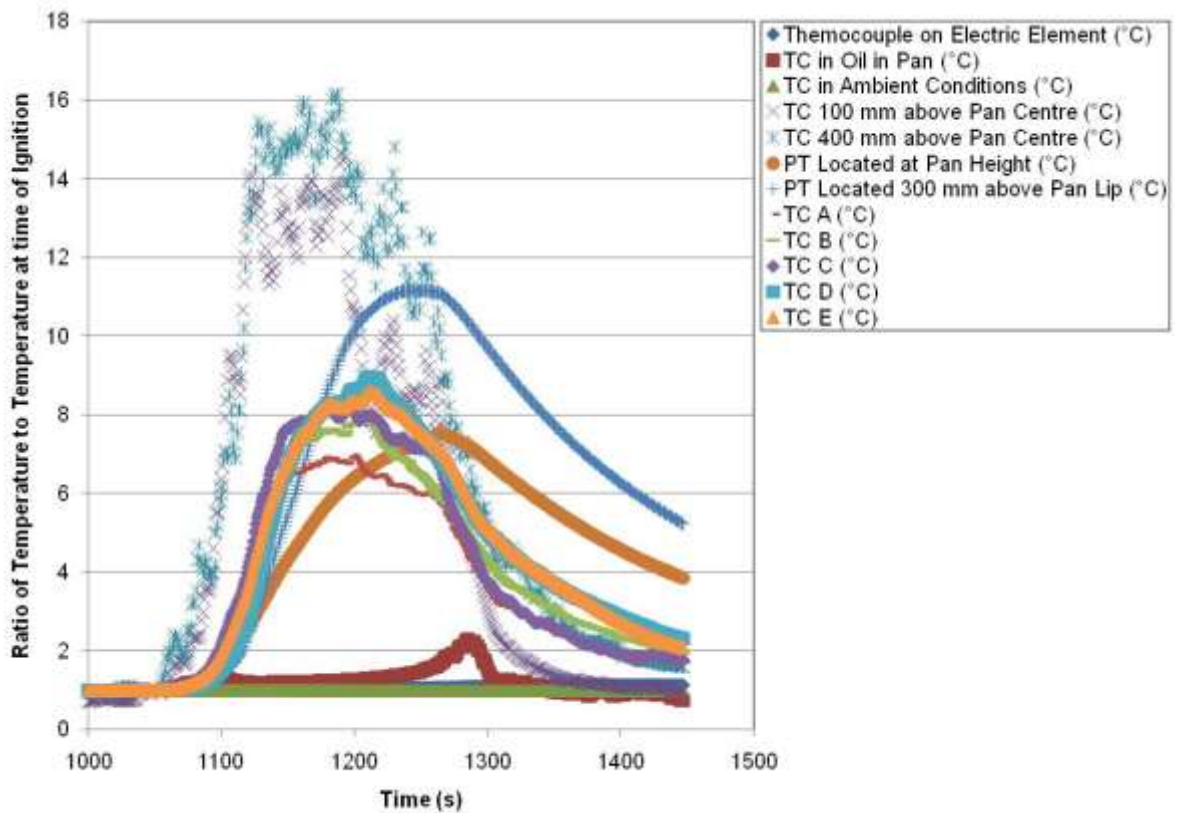


Figure 68: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 17.

## A.18 Test 18

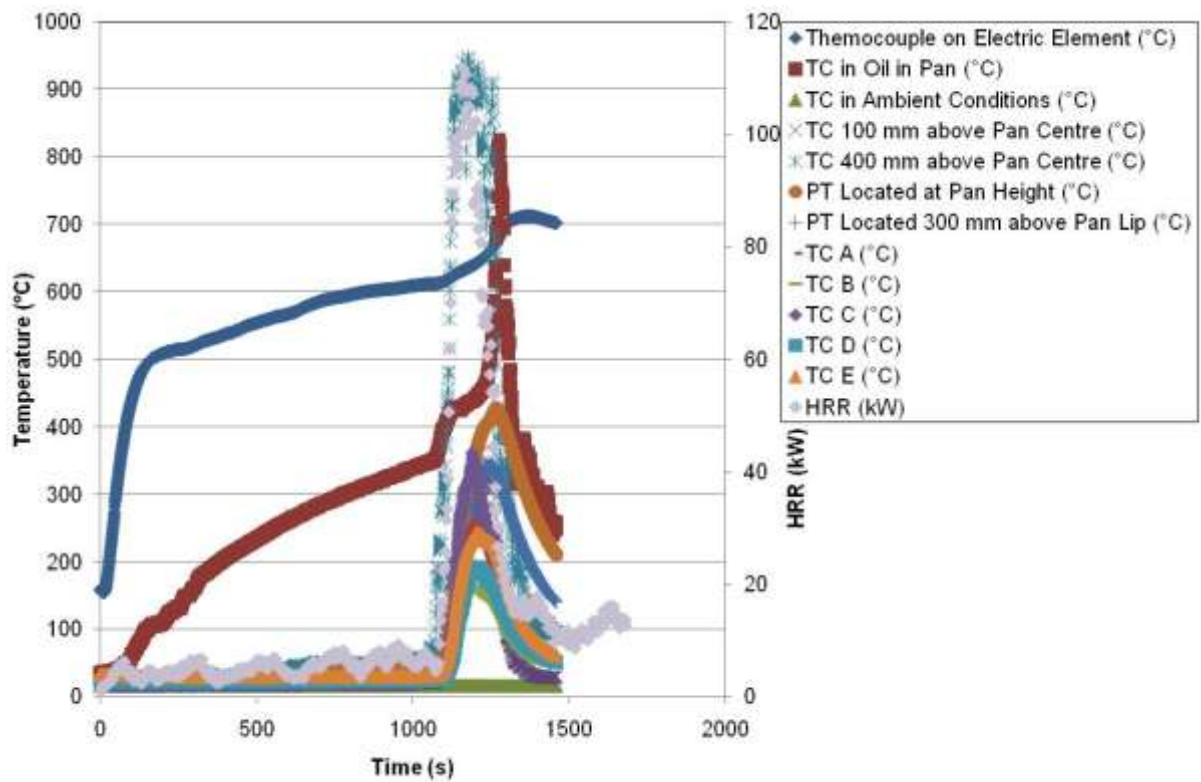


Figure 69: Measured temperatures of the thermocouples and plate thermometers for Test 18.

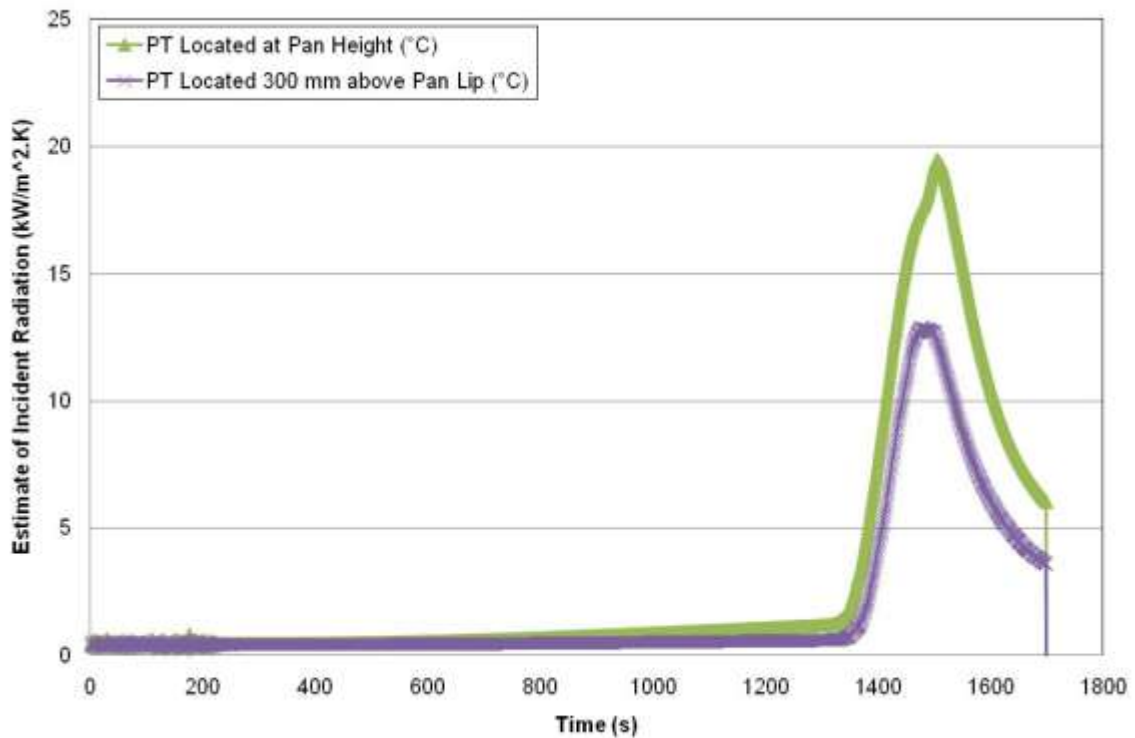


Figure 70: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 18.

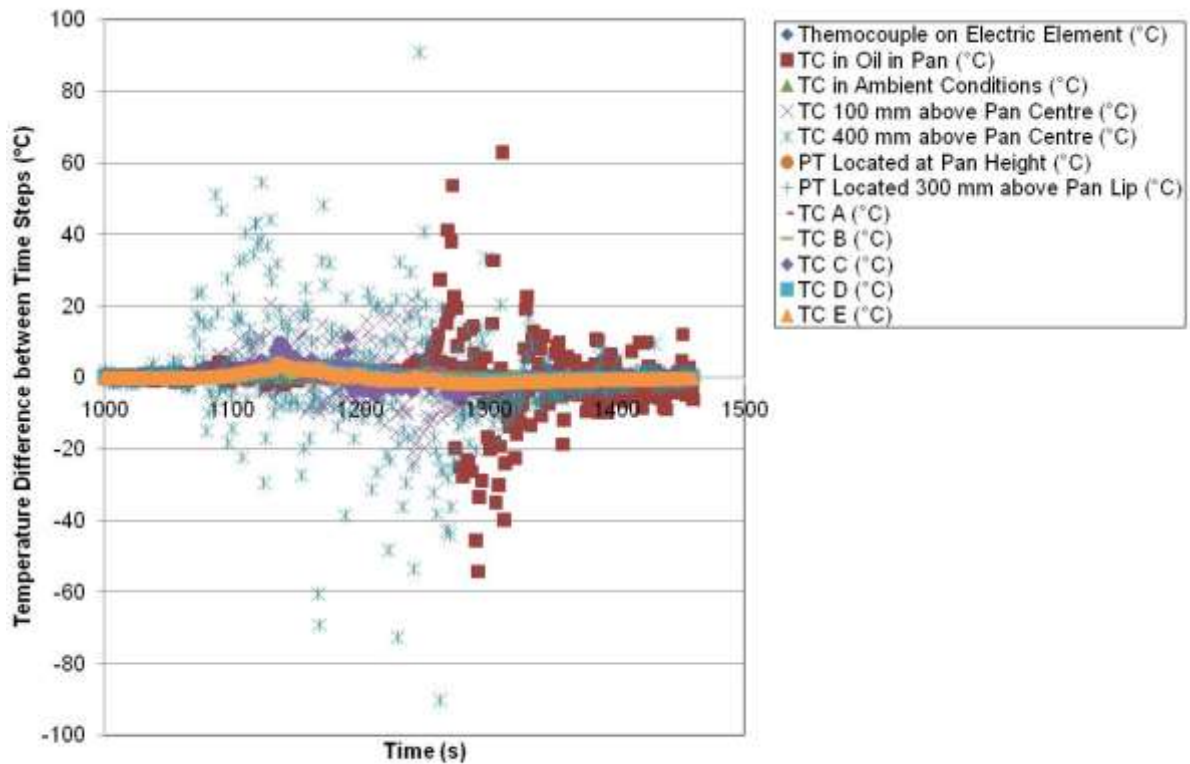


Figure 71: Differences of each of the variable temperatures to between sequential time steps for Test 18.

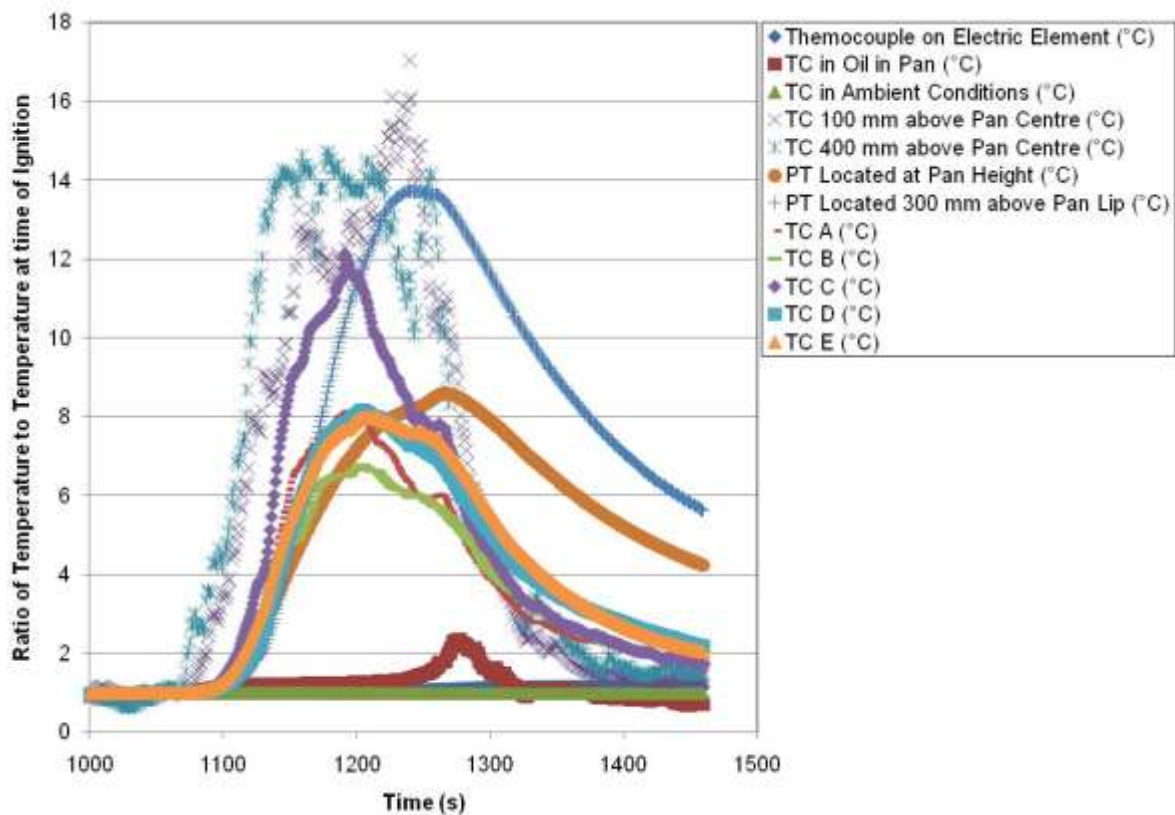


Figure 72: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 18.



## A.19 Test 19

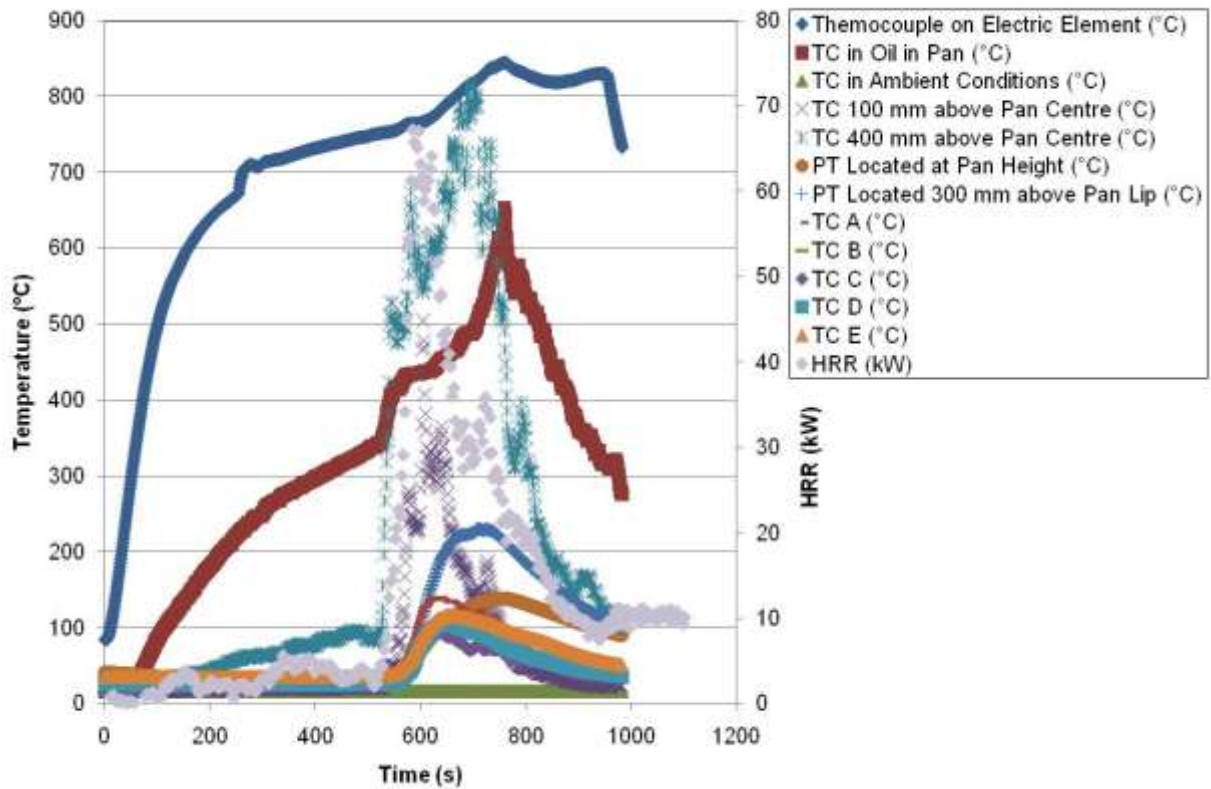


Figure 73: Measured temperatures of the thermocouples and plate thermometers for Test 19.

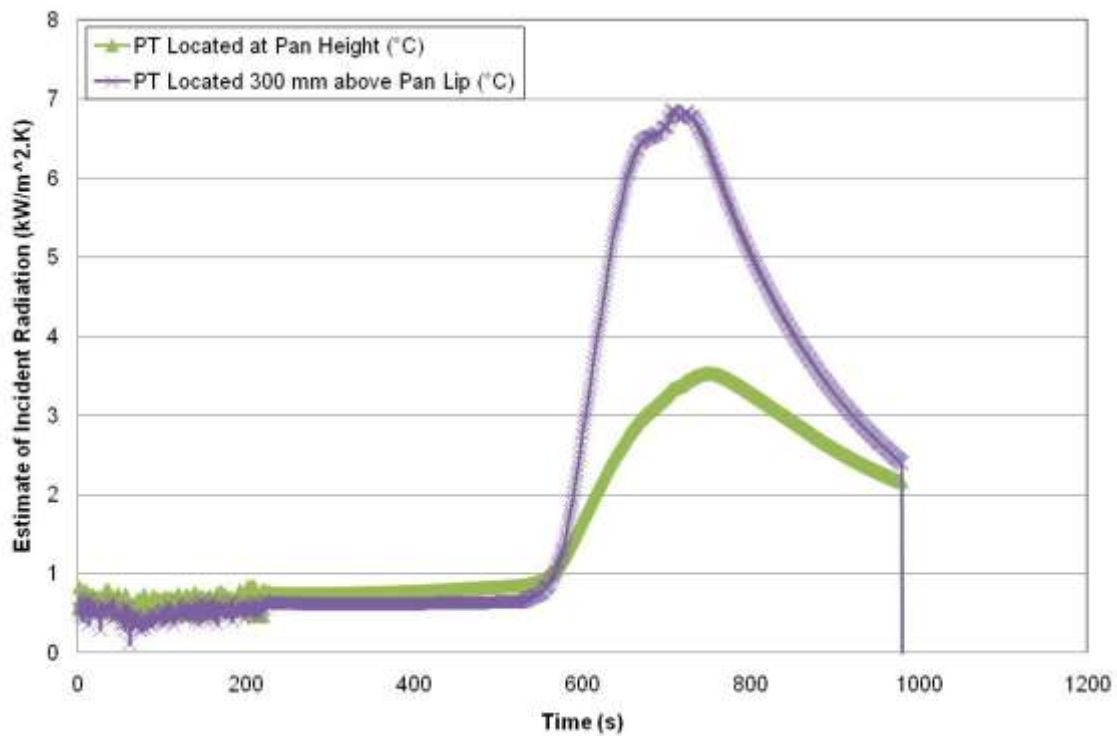


Figure 74: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 19.

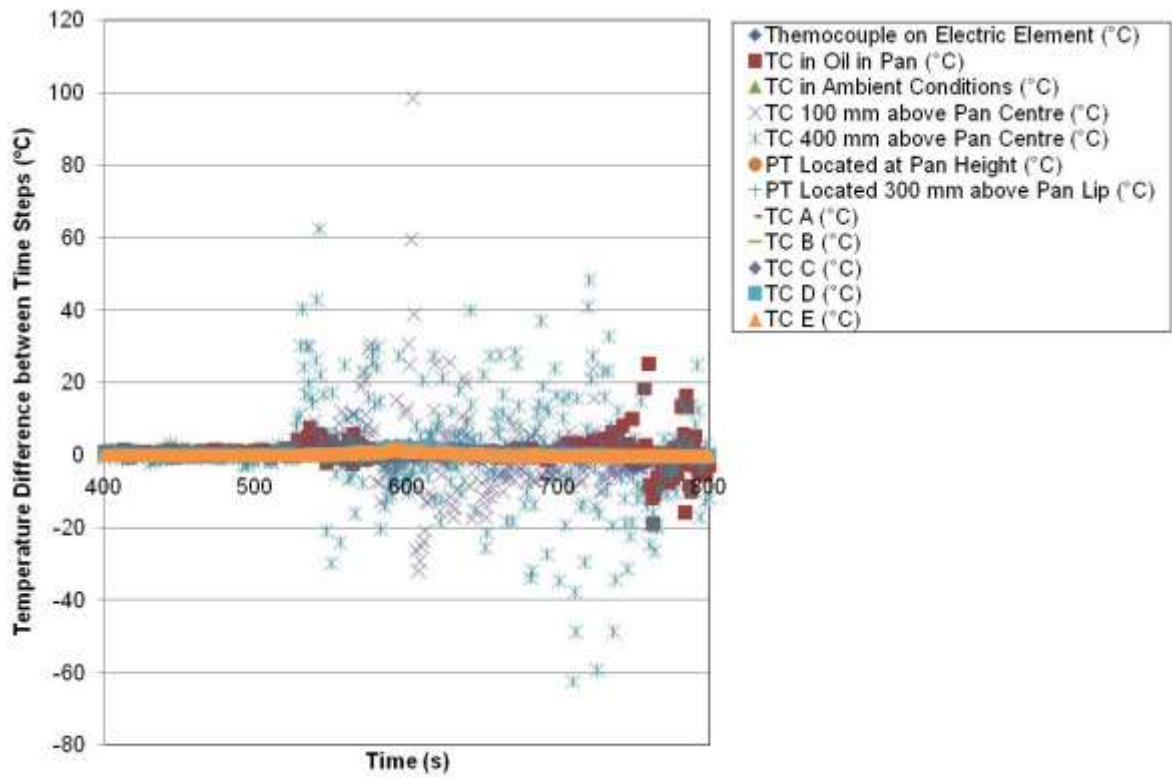


Figure 75: Differences of each of the variable temperatures to between sequential time steps for Test 19.

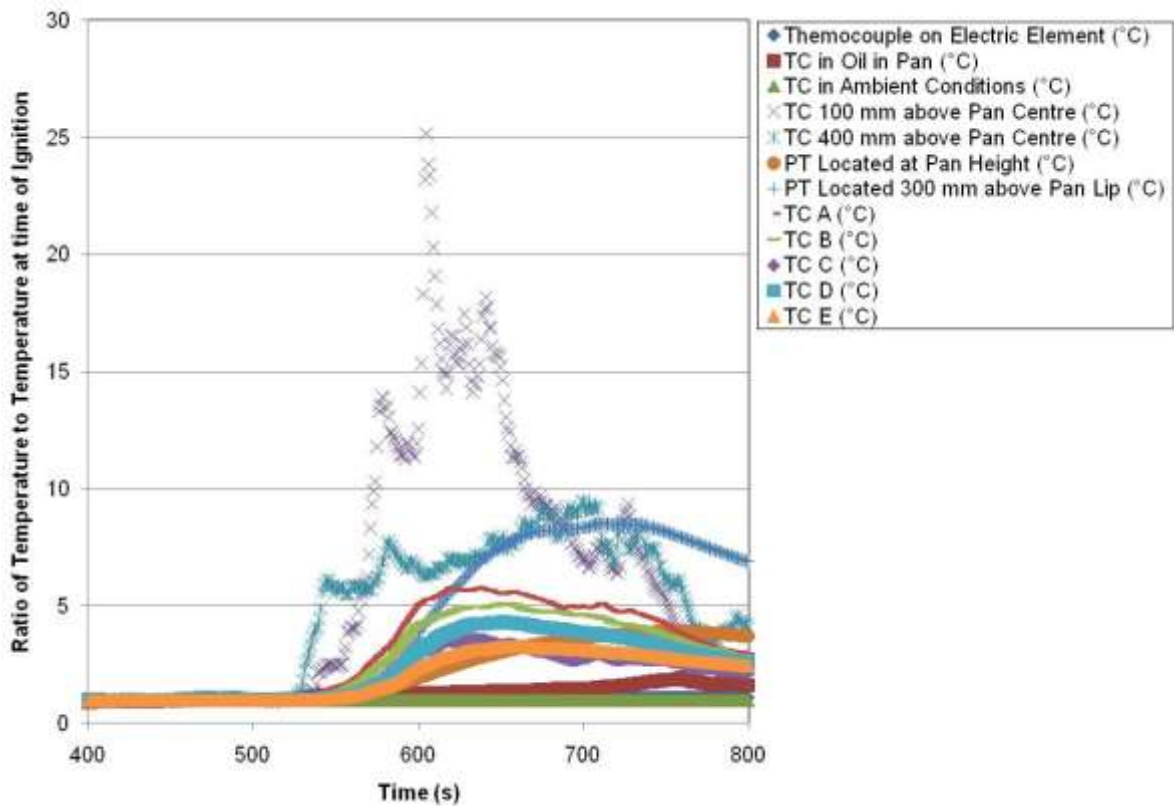


Figure 76: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 19.

## A.20 Test 20

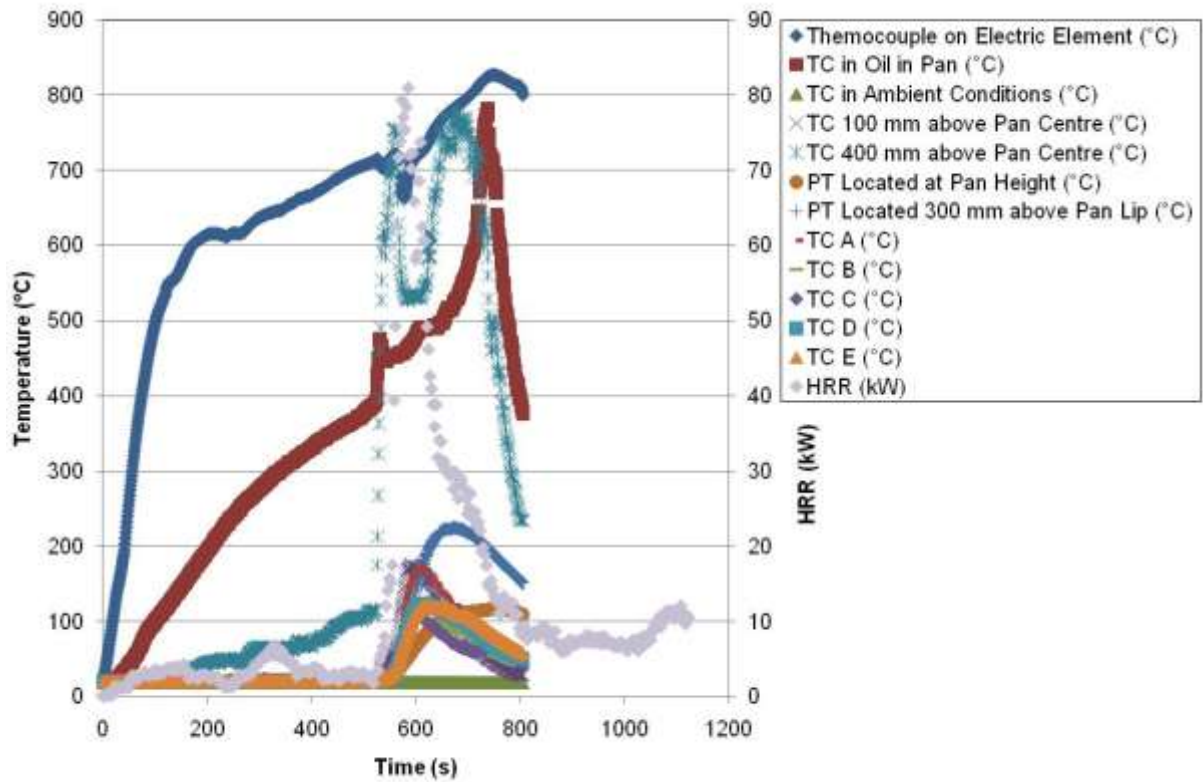


Figure 77: Measured temperatures of the thermocouples and plate thermometers for Test 20.

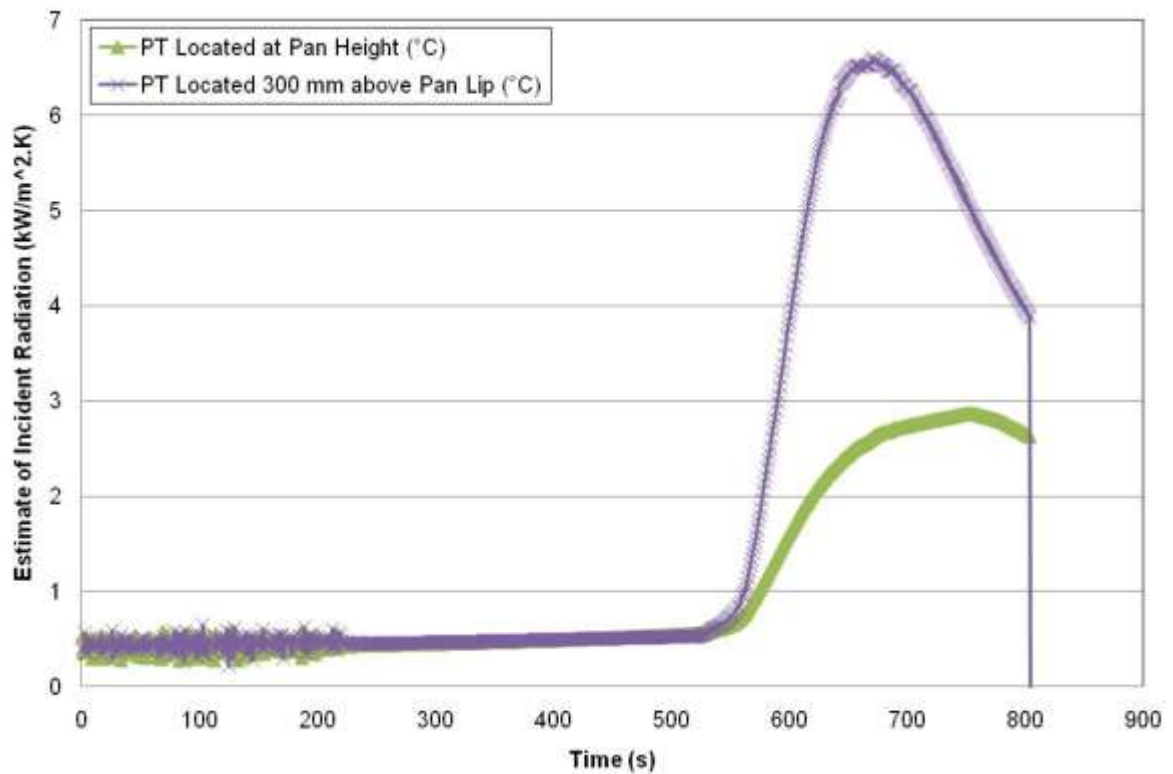


Figure 78: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 20.

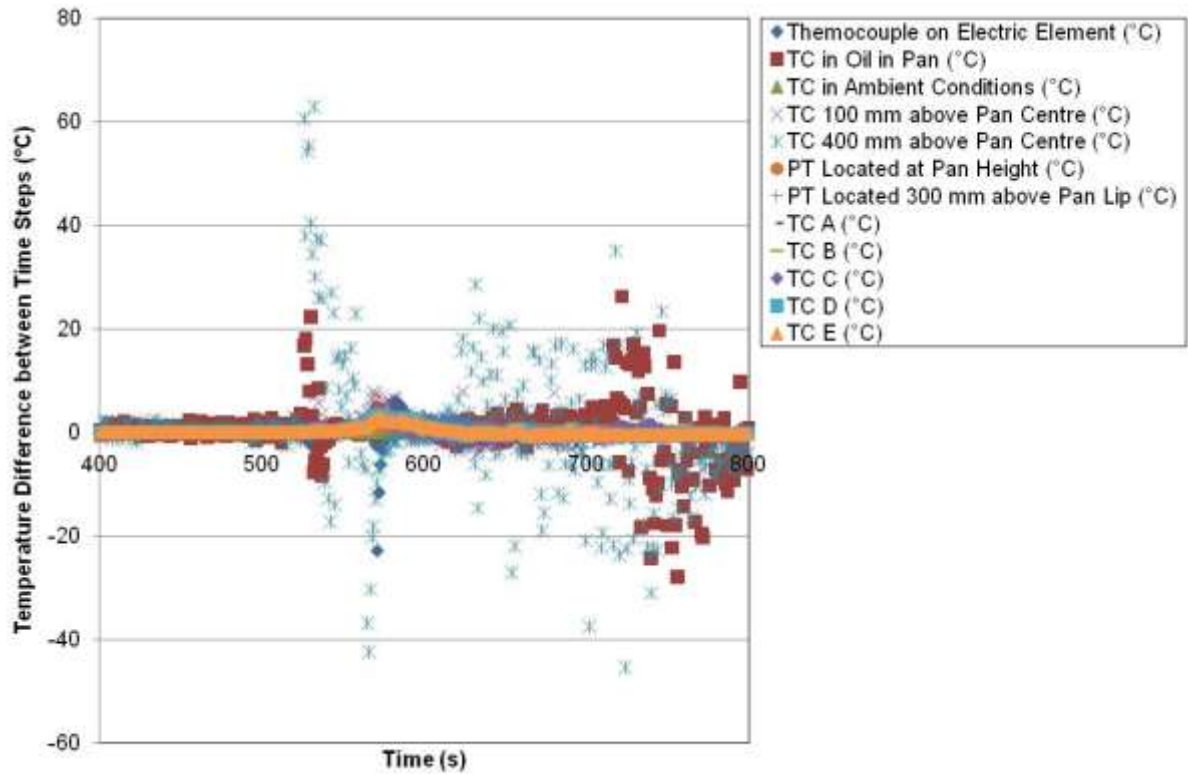


Figure 79: Differences of each of the variable temperatures to between sequential time steps for Test 20.

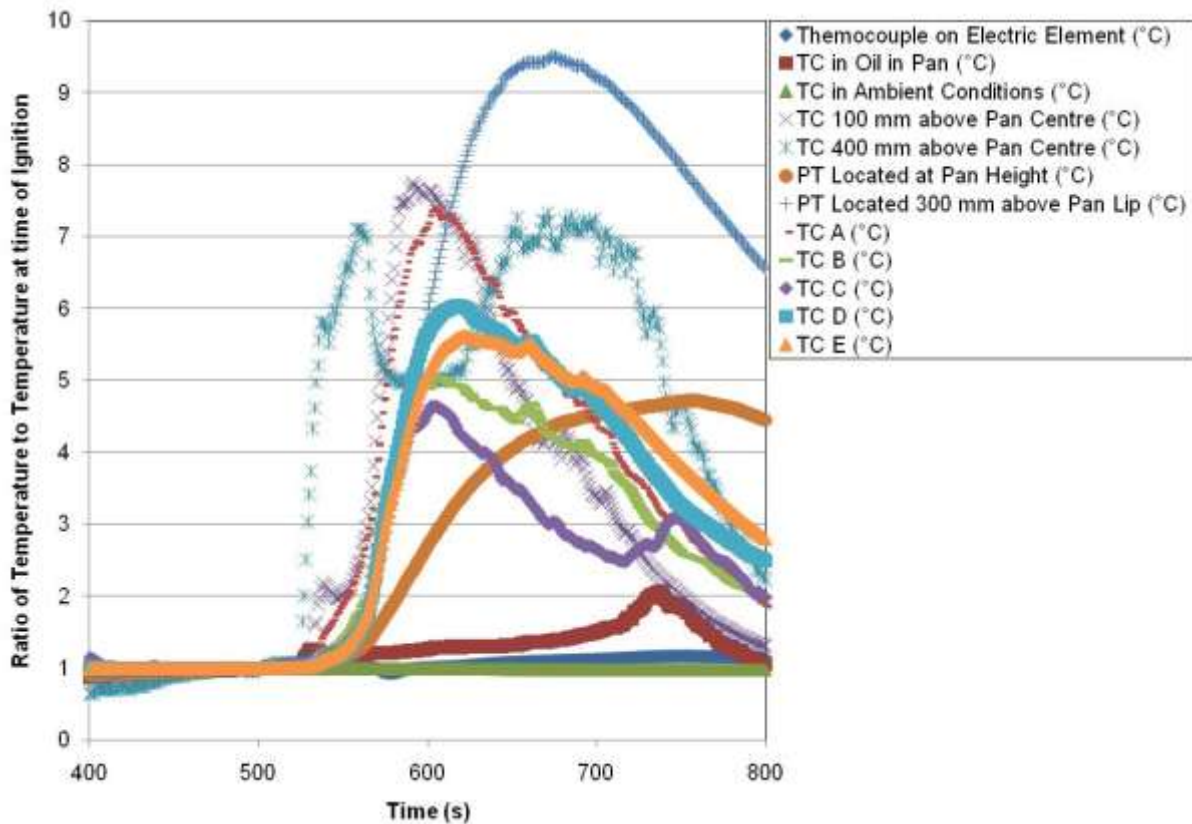


Figure 80: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 20.

## A.21 Test 21

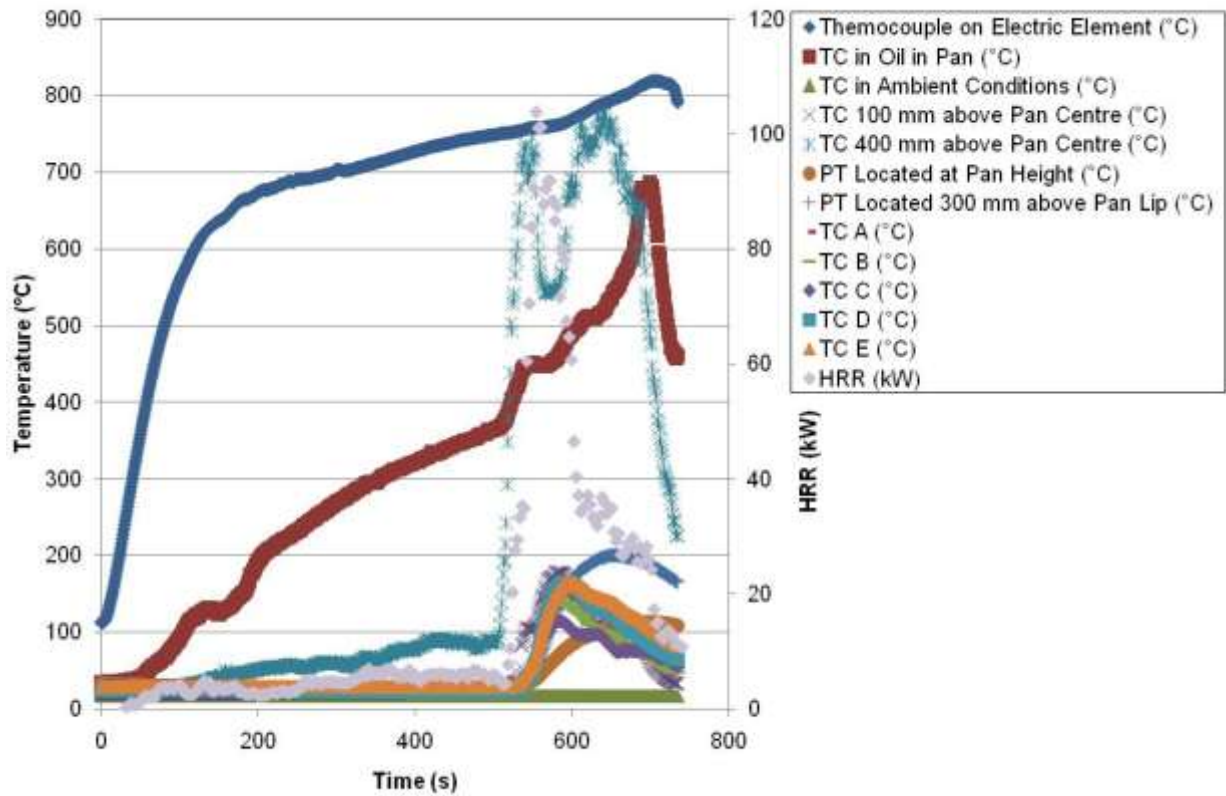


Figure 81: Measured temperatures of the thermocouples and plate thermometers for Test 21.

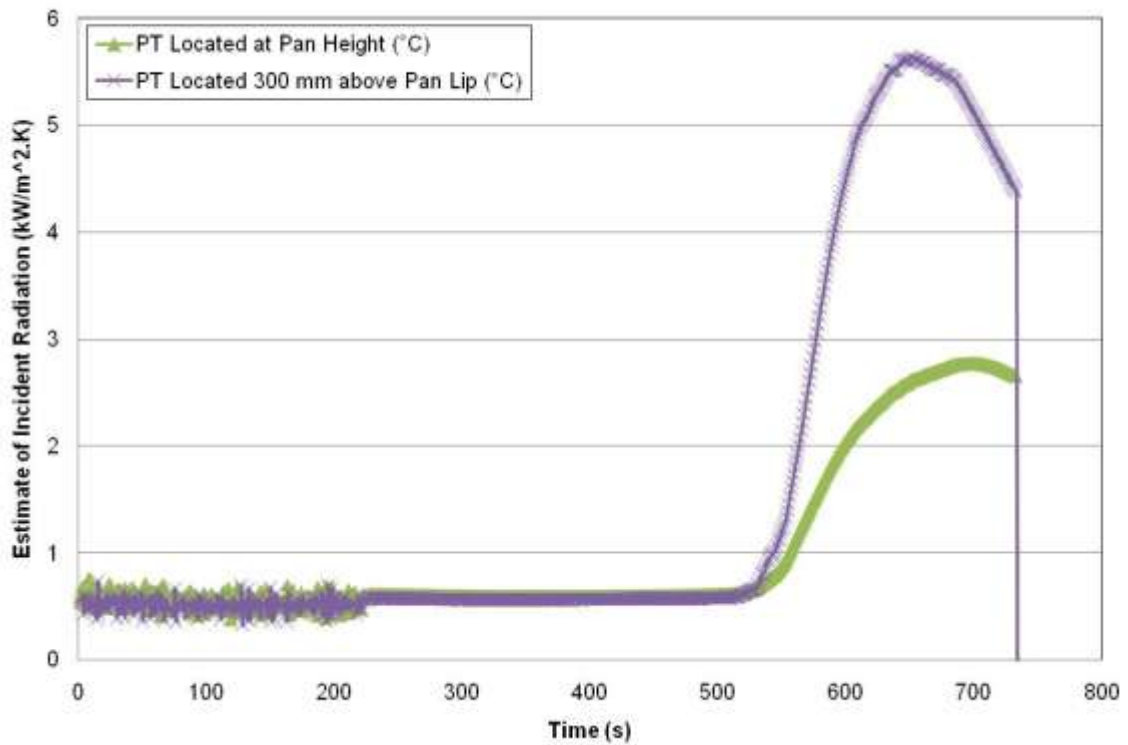


Figure 82: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 21.

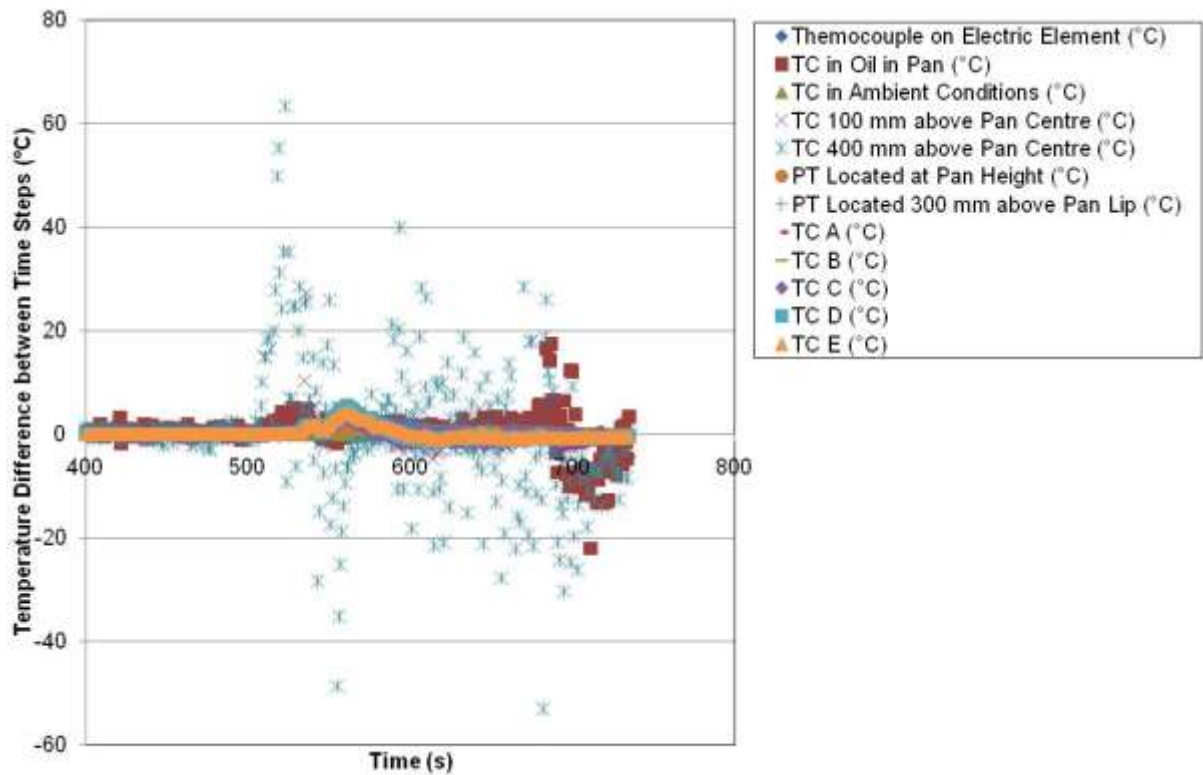


Figure 83: Differences of each of the variable temperatures to between sequential time steps for Test 21.

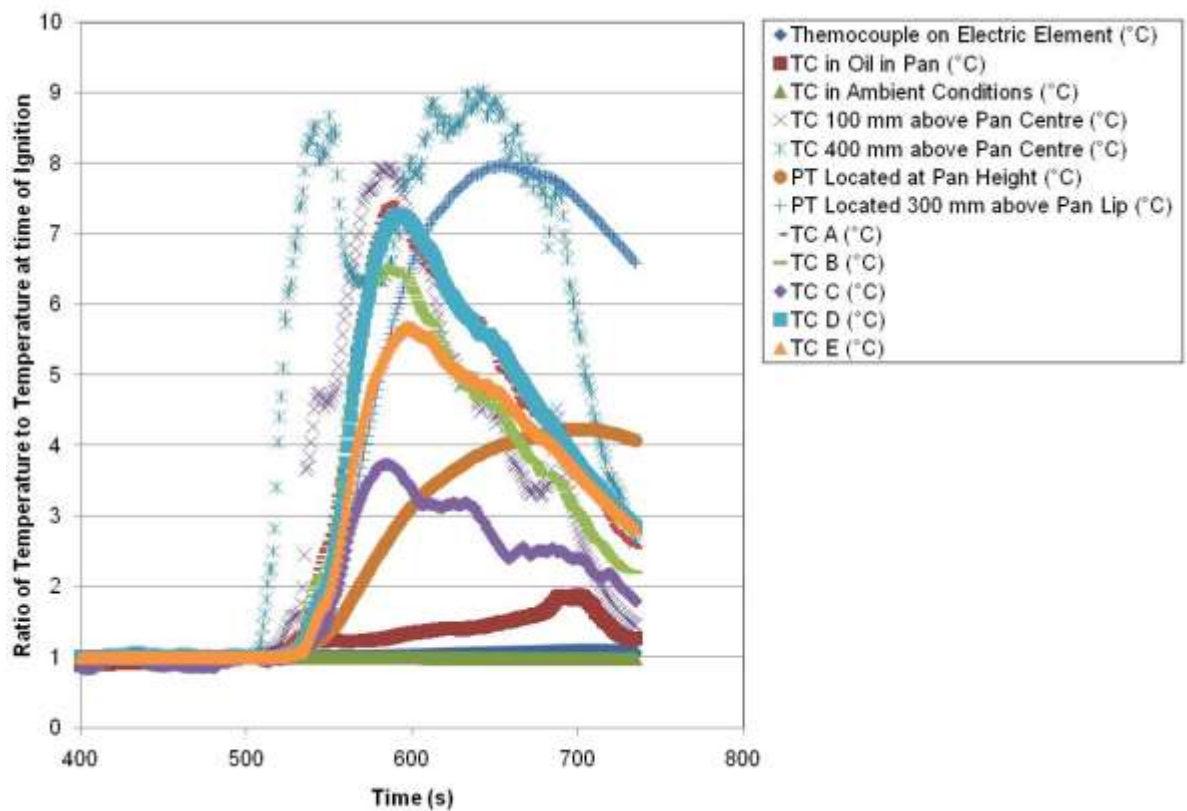


Figure 84: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 21.

## A.22 Test 22

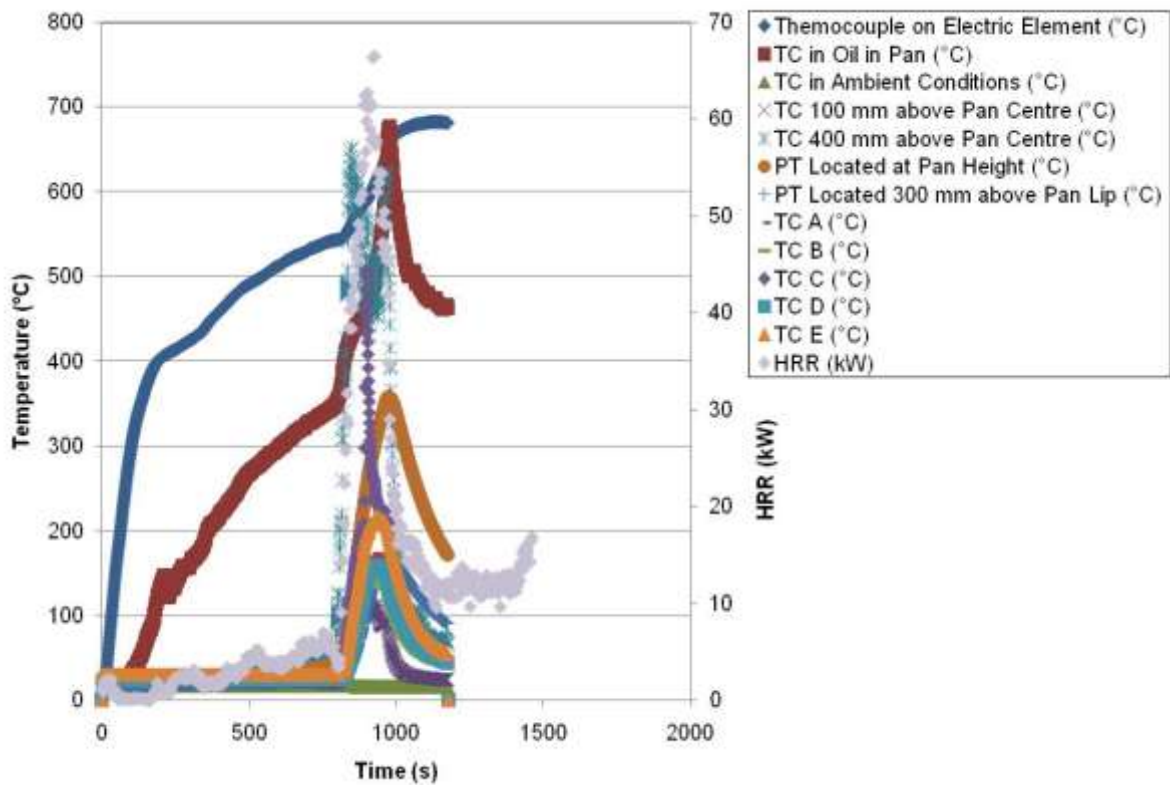


Figure 85: Measured temperatures of the thermocouples and plate thermometers for Test 22.

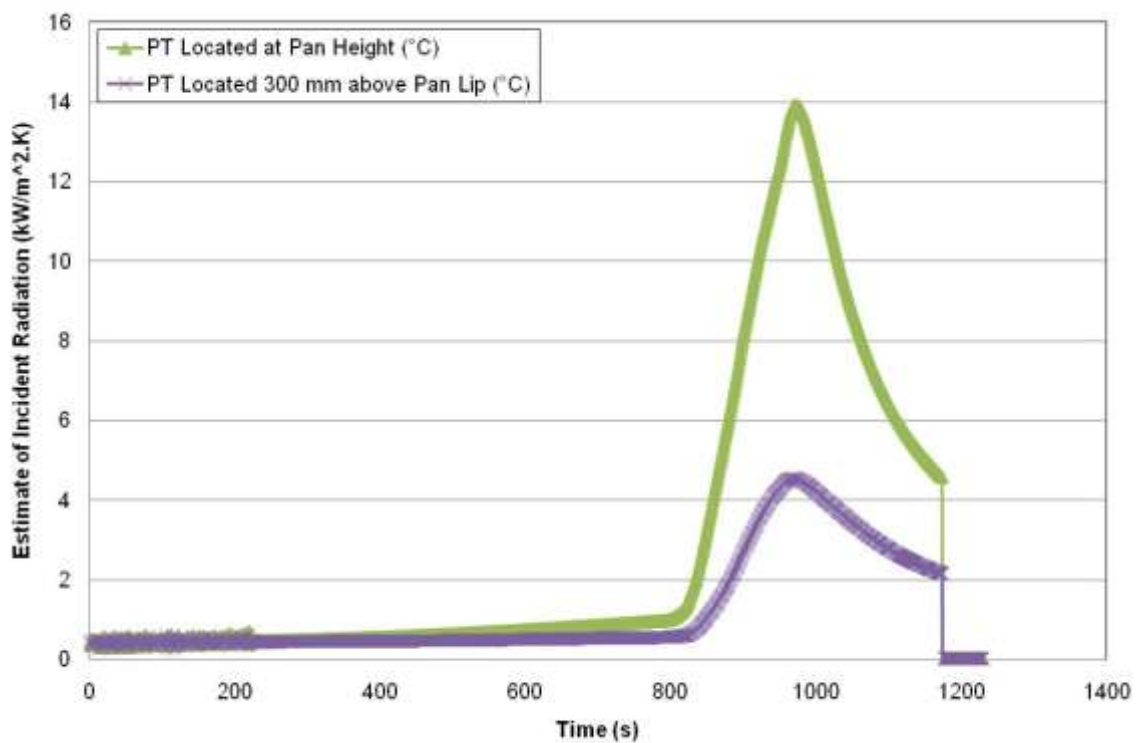


Figure 86: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 22.

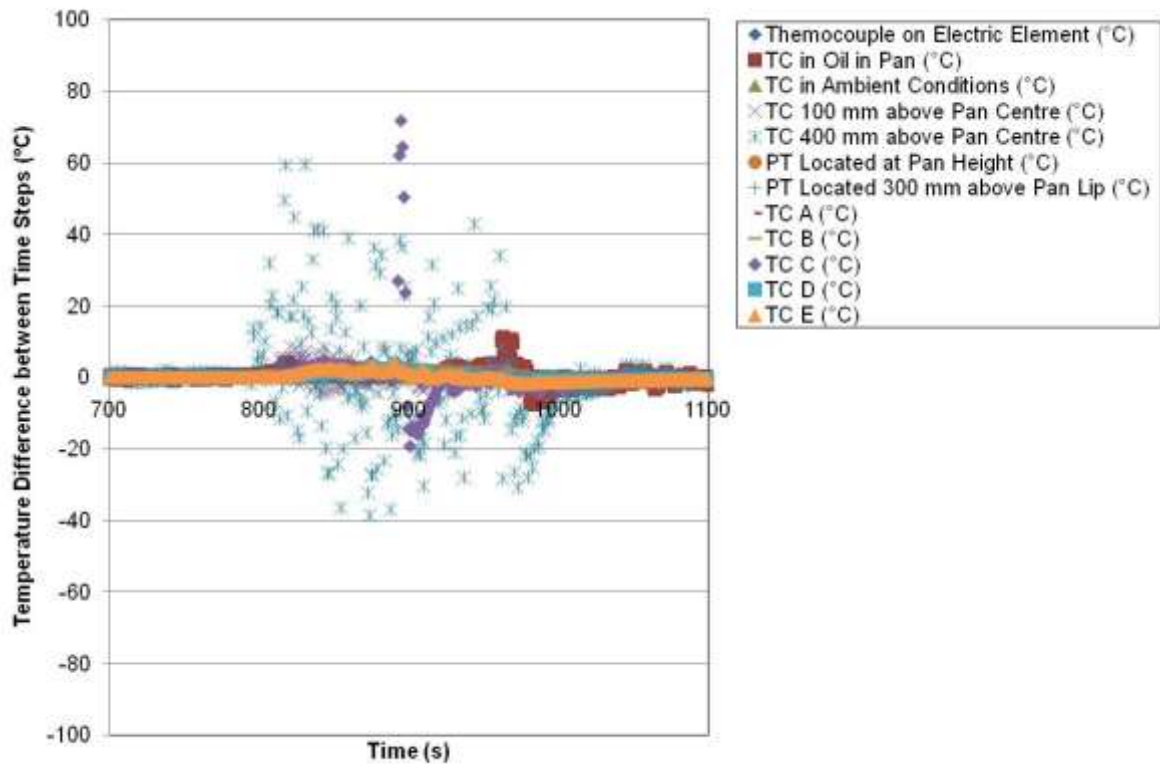


Figure 87: Differences of each of the variable temperatures to between sequential time steps for Test 22.

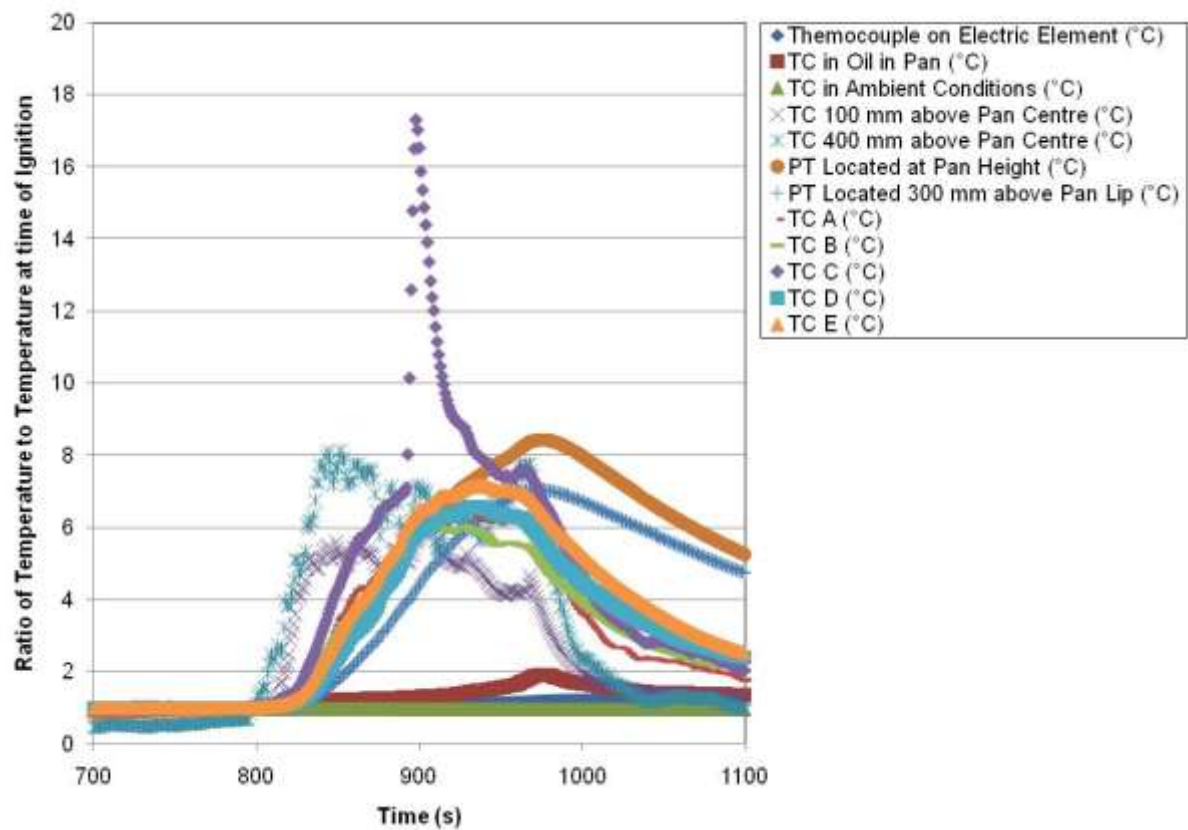


Figure 88: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 22.



## A.23 Test 23

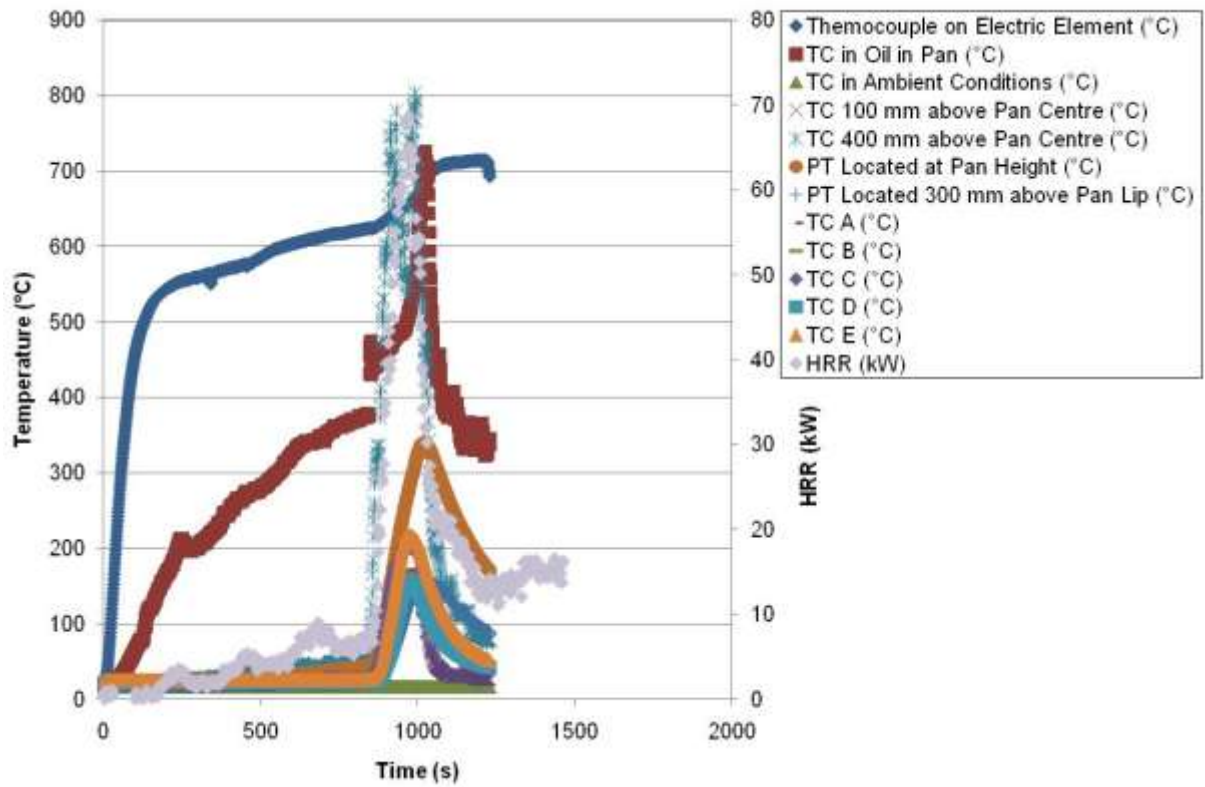


Figure 89: Measured temperatures of the thermocouples and plate thermometers for Test 23.

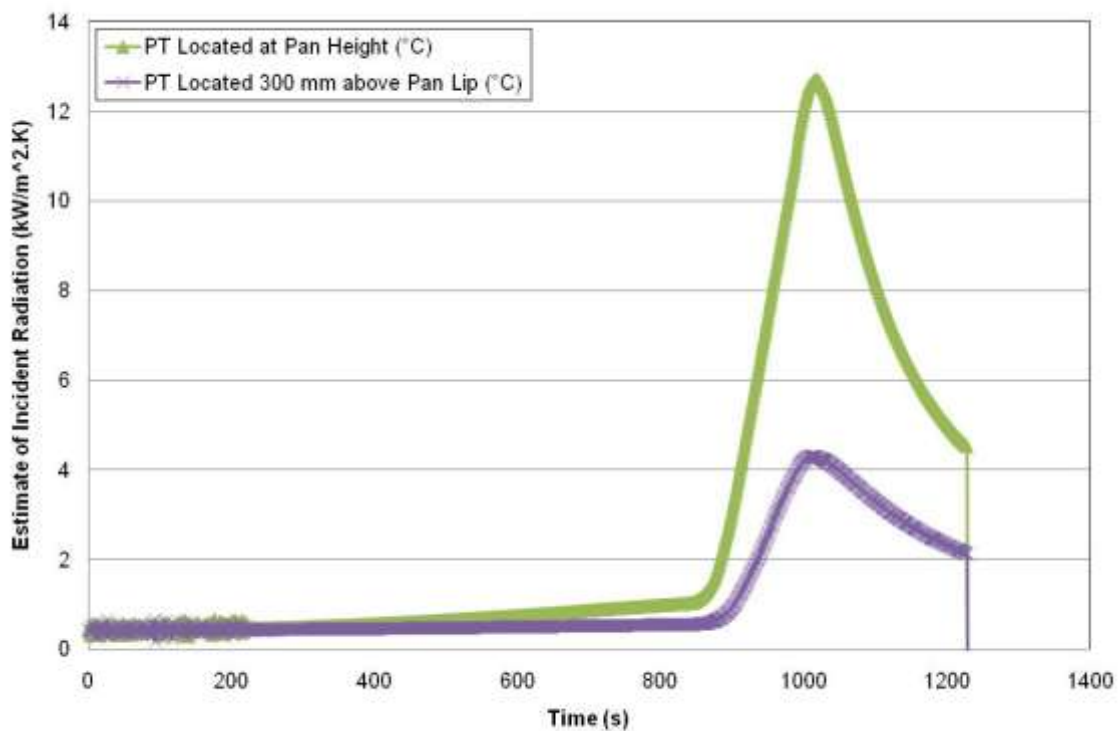


Figure 90: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 23.

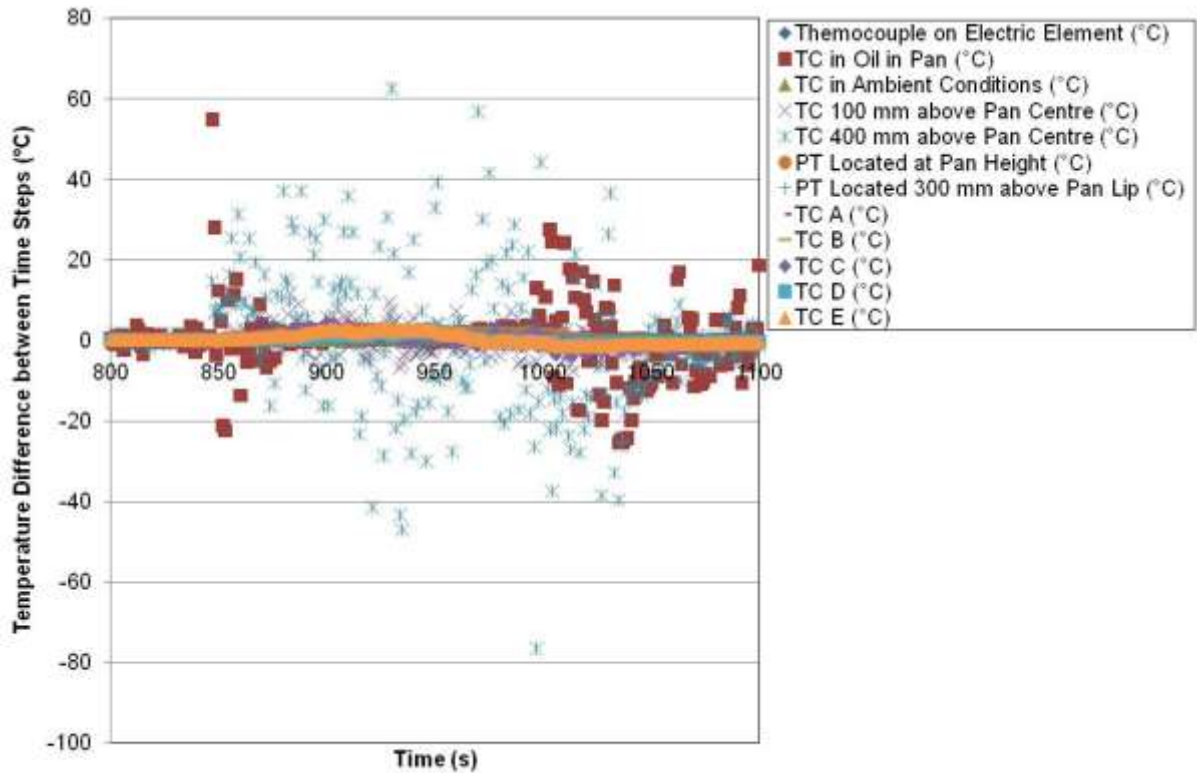


Figure 91: Differences of each of the variable temperatures to between sequential time steps for Test 23.

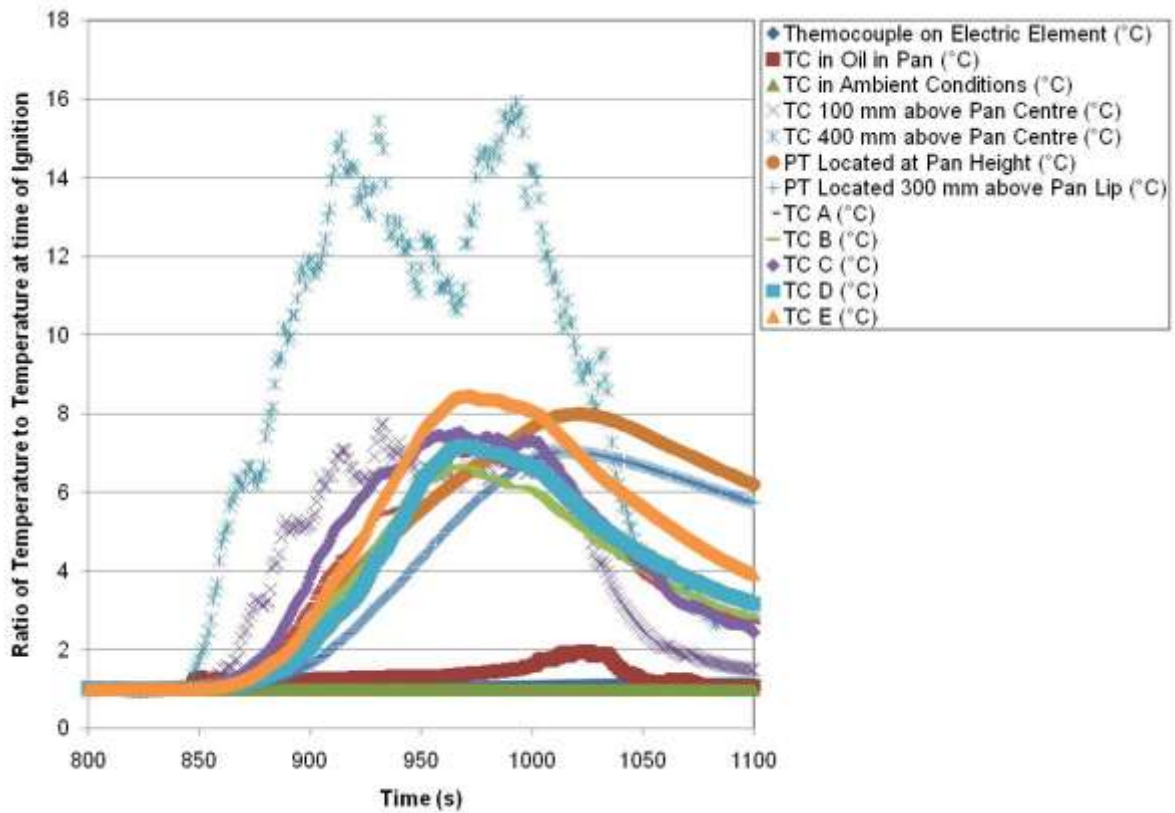


Figure 92: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 23.

## A.24 Test 24

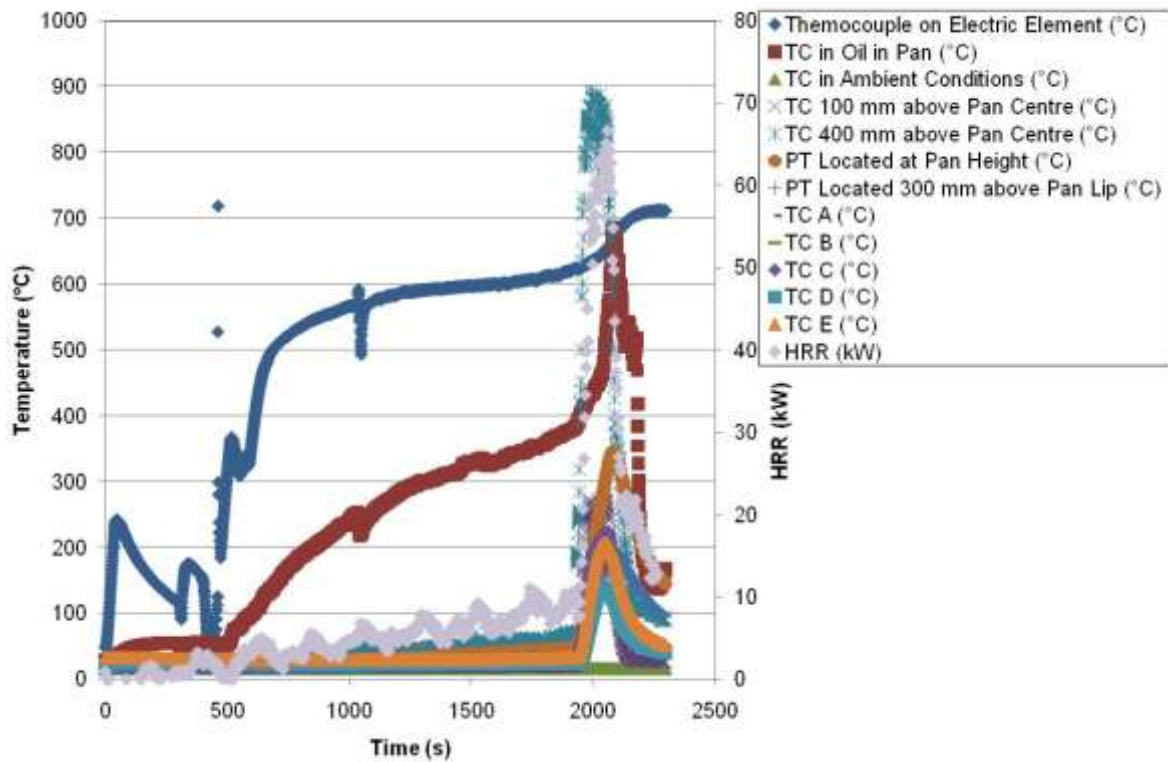


Figure 93: Measured temperatures of the thermocouples and plate thermometers for Test 24.

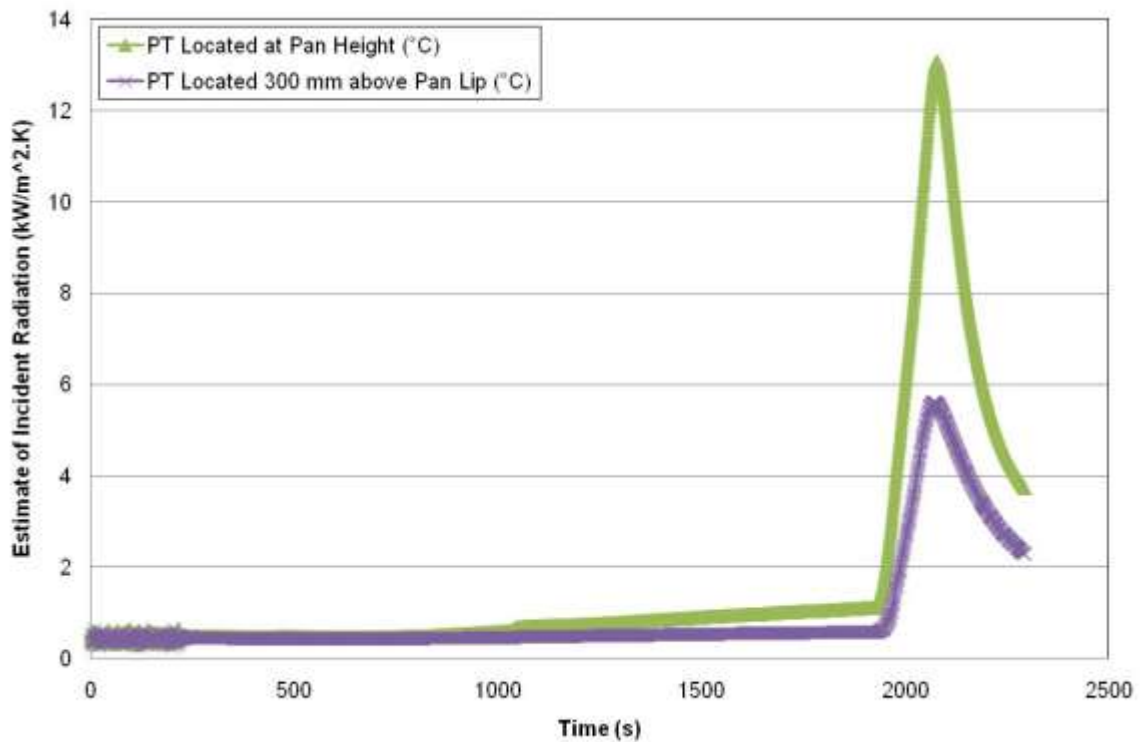


Figure 94: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 24.

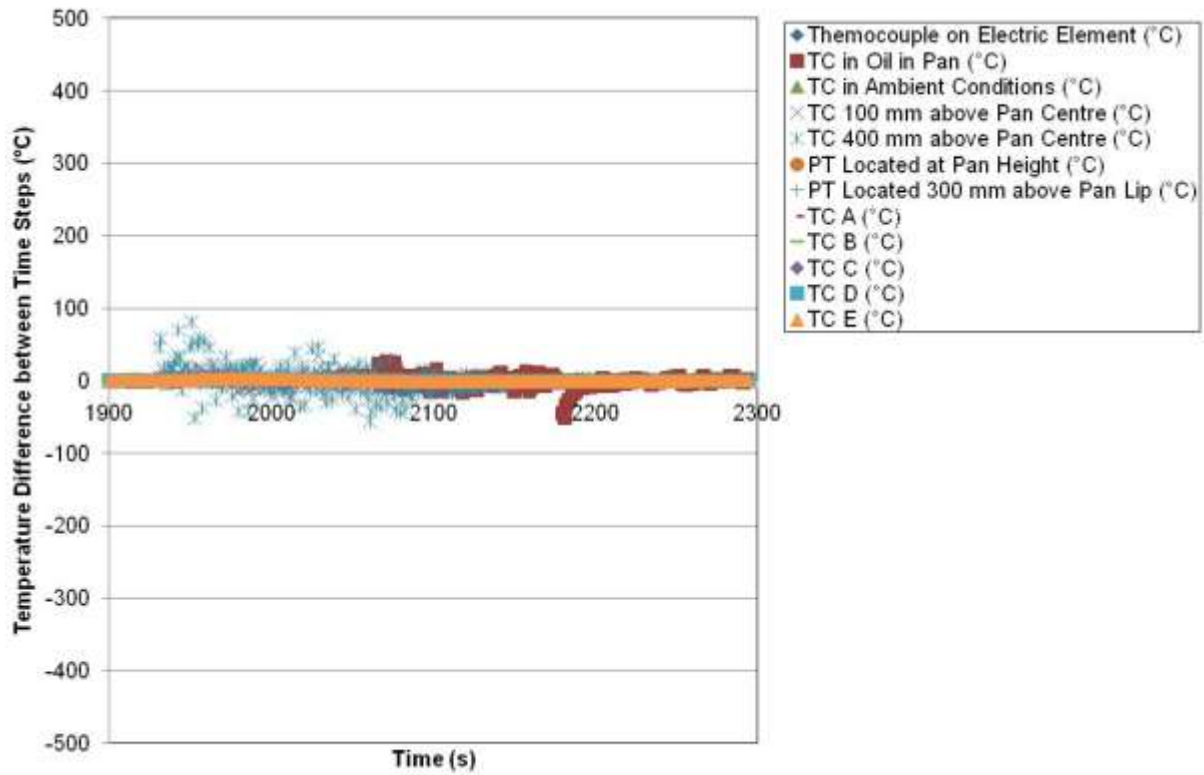


Figure 95: Differences of each of the variable temperatures to between sequential time steps for Test 24.

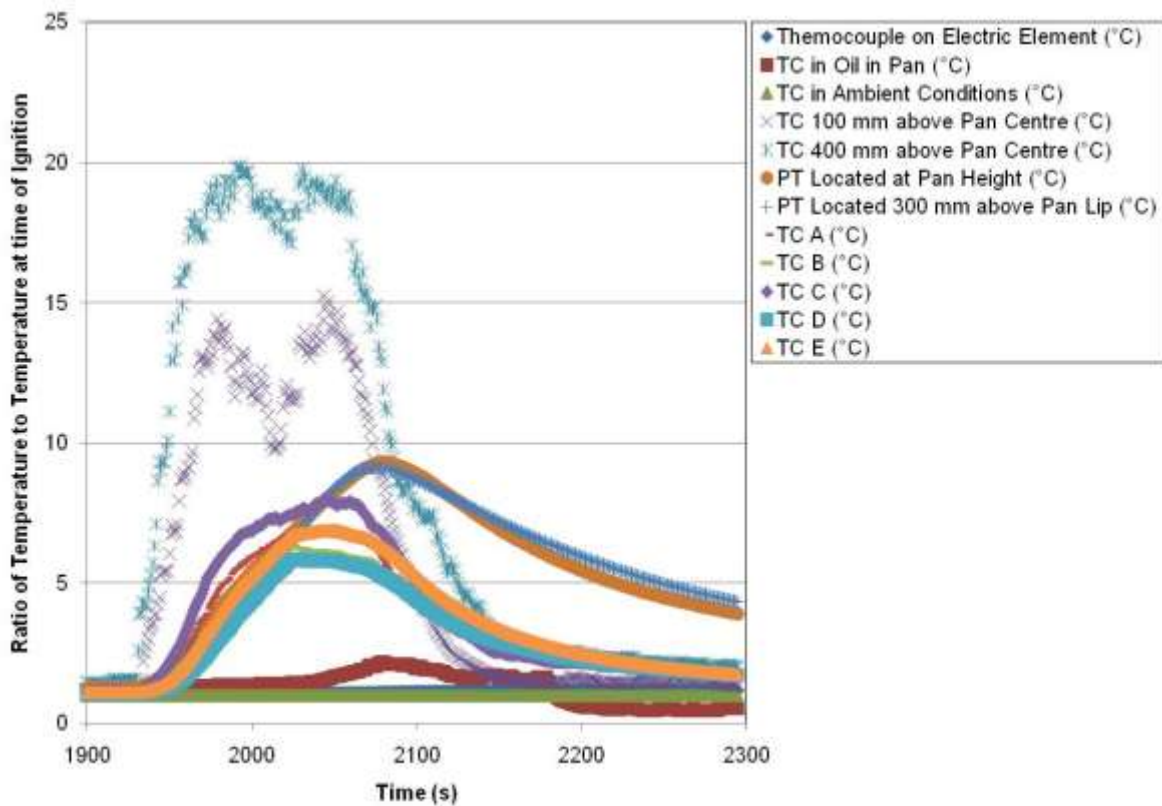


Figure 96: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 24.

## A.25 Test 25

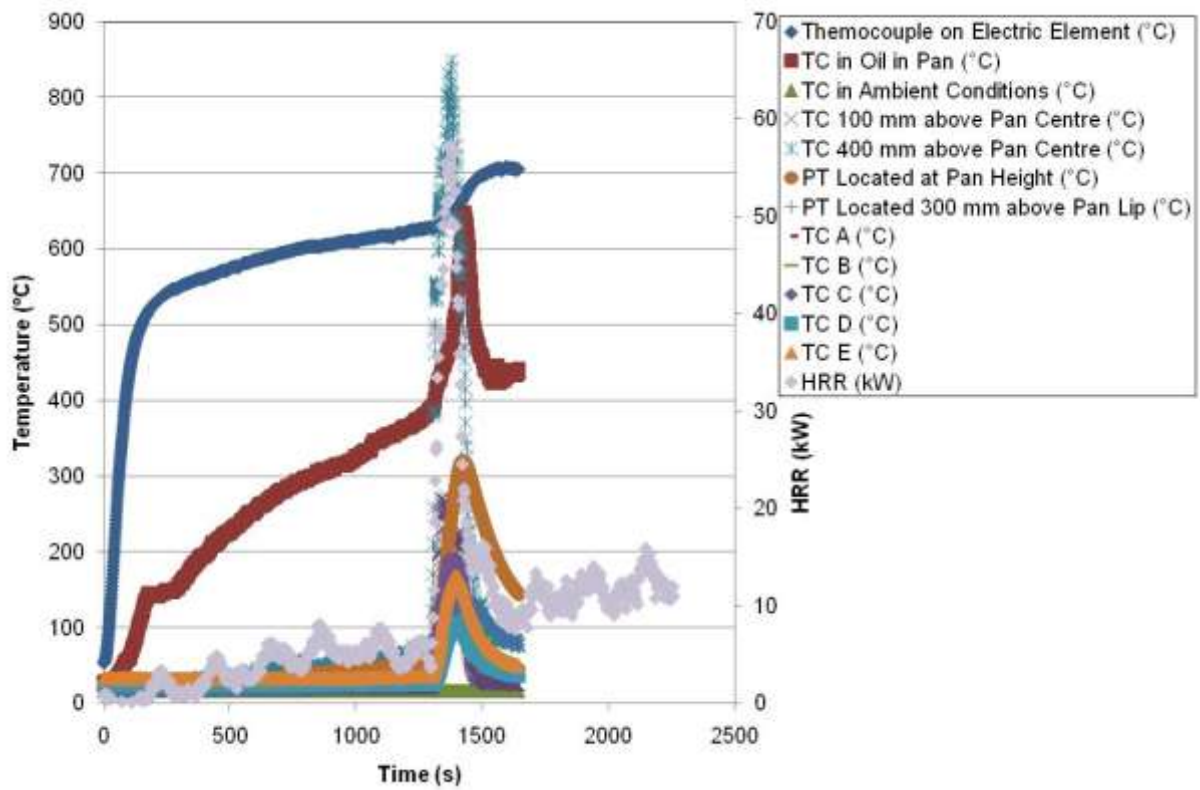


Figure 97: Measured temperatures of the thermocouples and plate thermometers for Test 25.

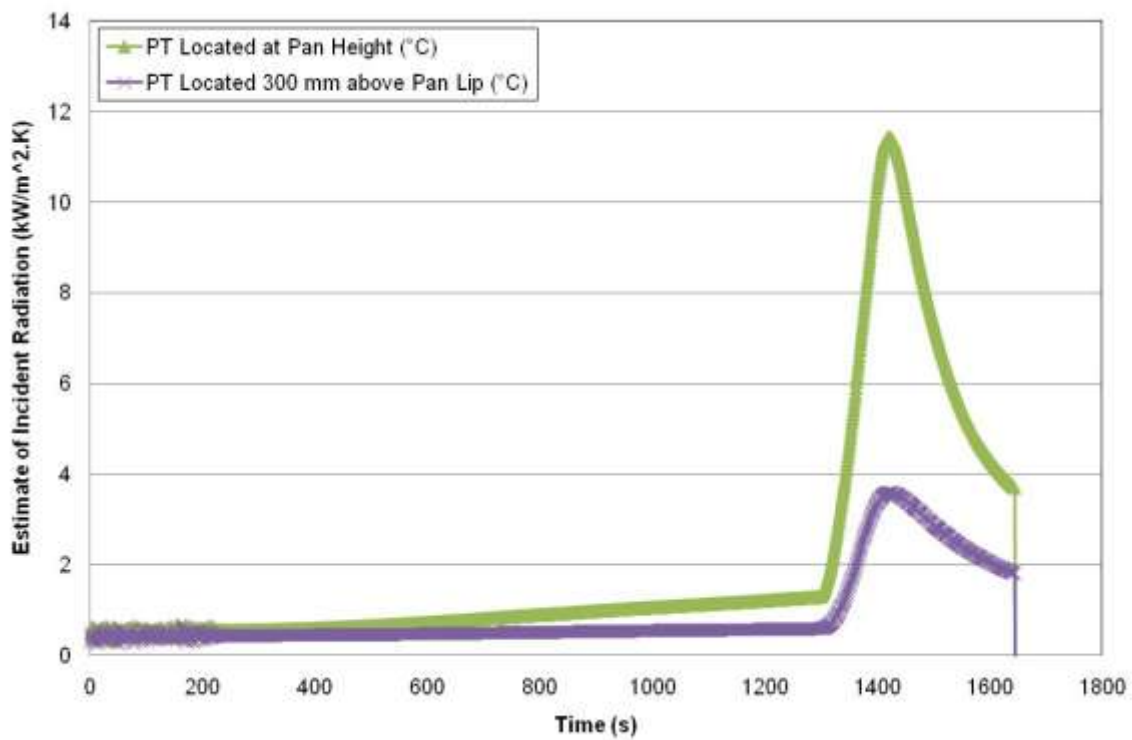


Figure 98: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 25.

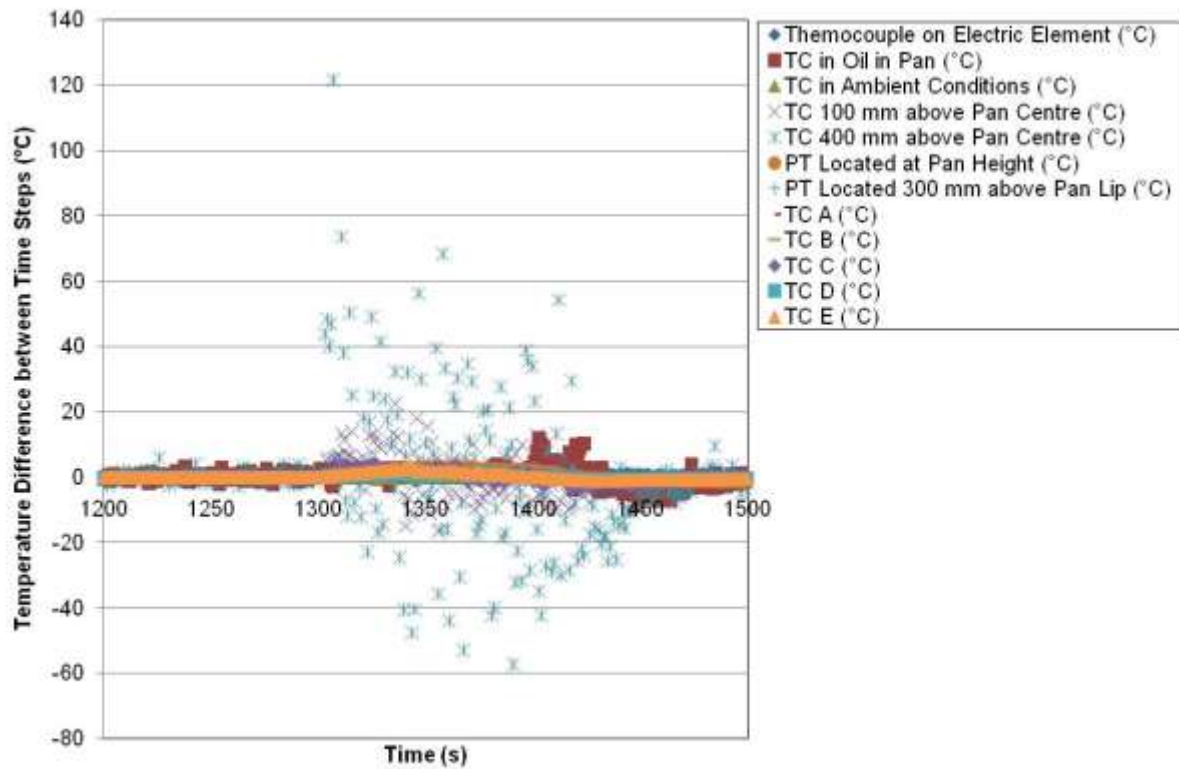


Figure 99: Differences of each of the variable temperatures to between sequential time steps for Test 25.

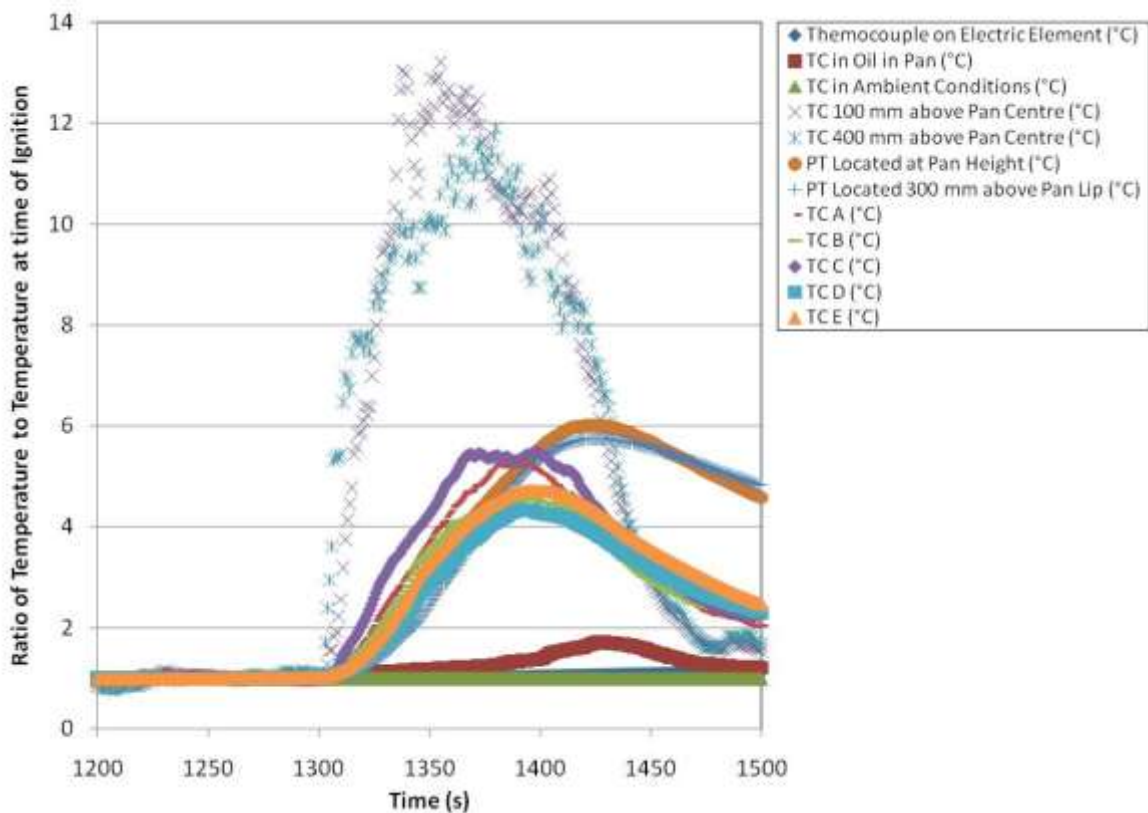


Figure 100: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 25.

## A.26 Test 26

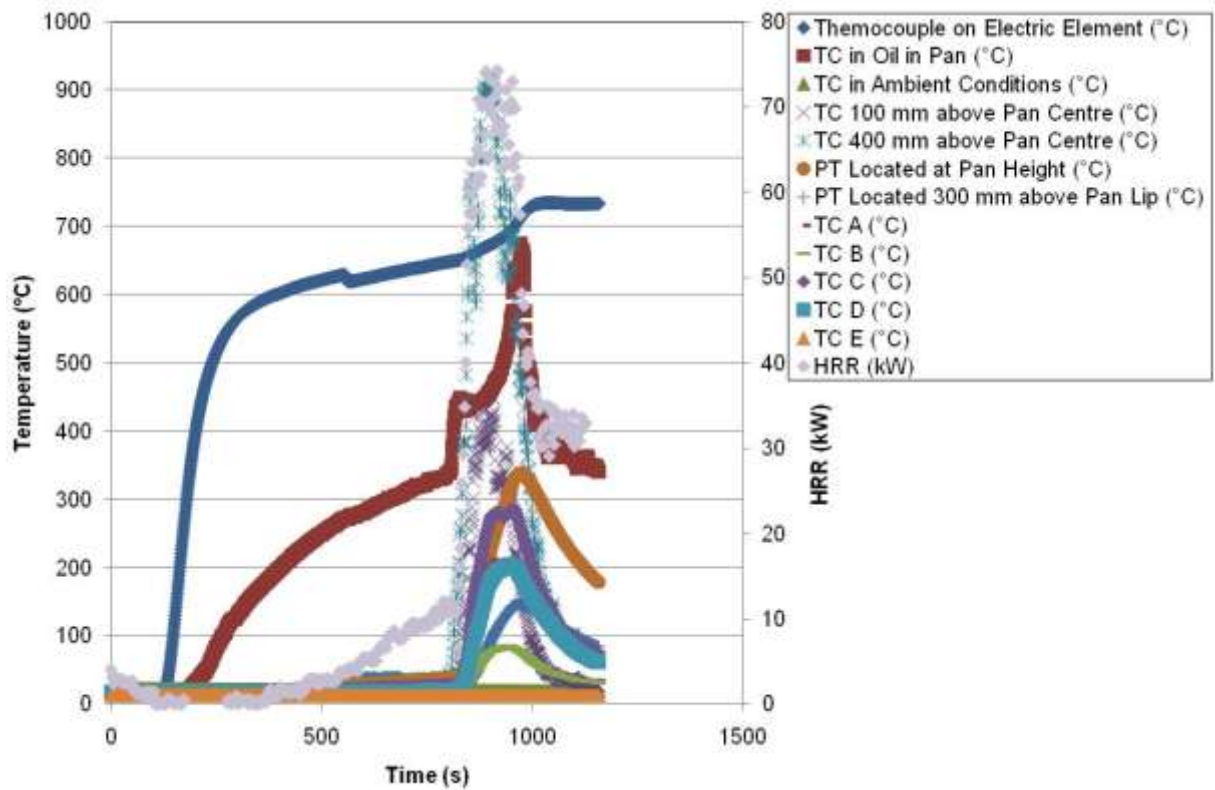


Figure 101: Measured temperatures of the thermocouples and plate thermometers for Test 26.

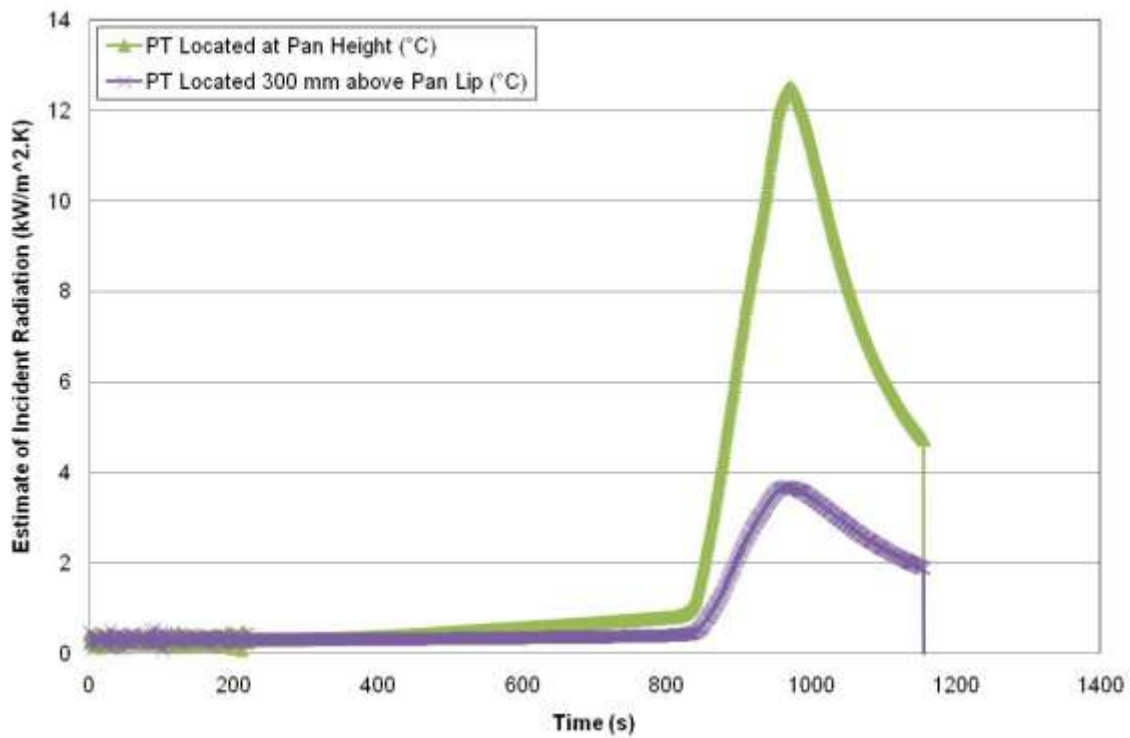


Figure 102: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 26.

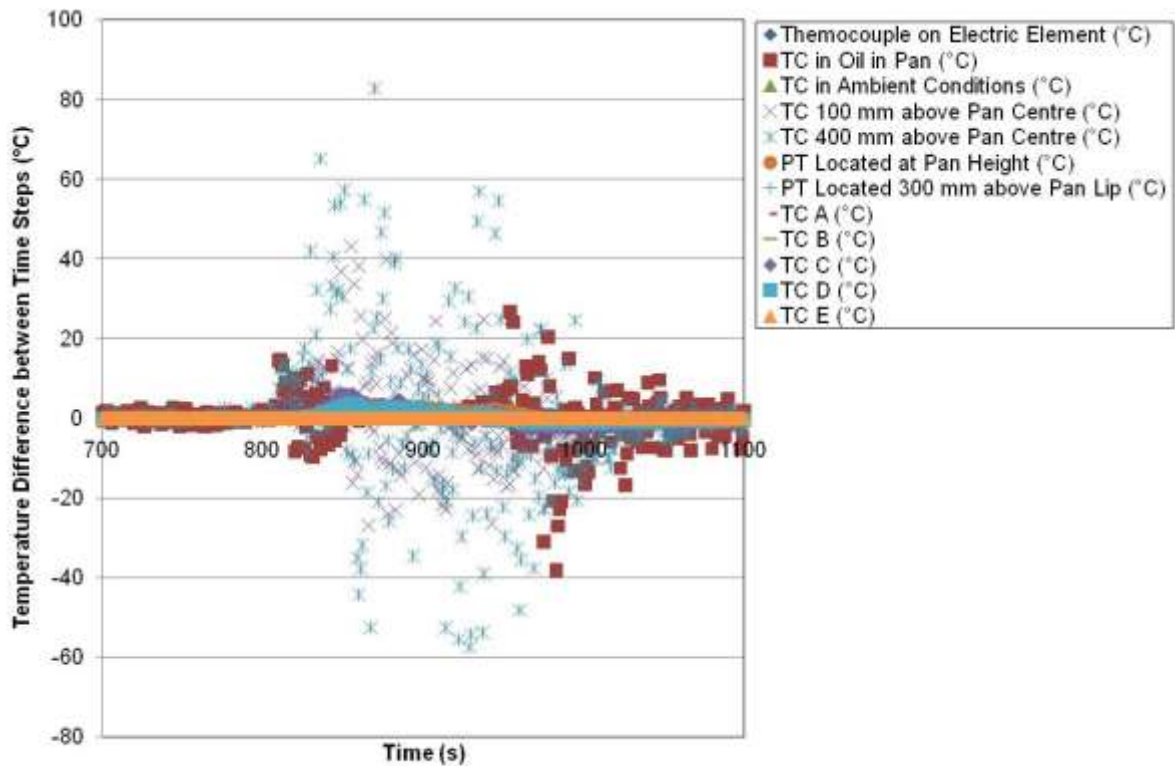


Figure 103: Differences of each of the variable temperatures to between sequential time steps for Test 26.

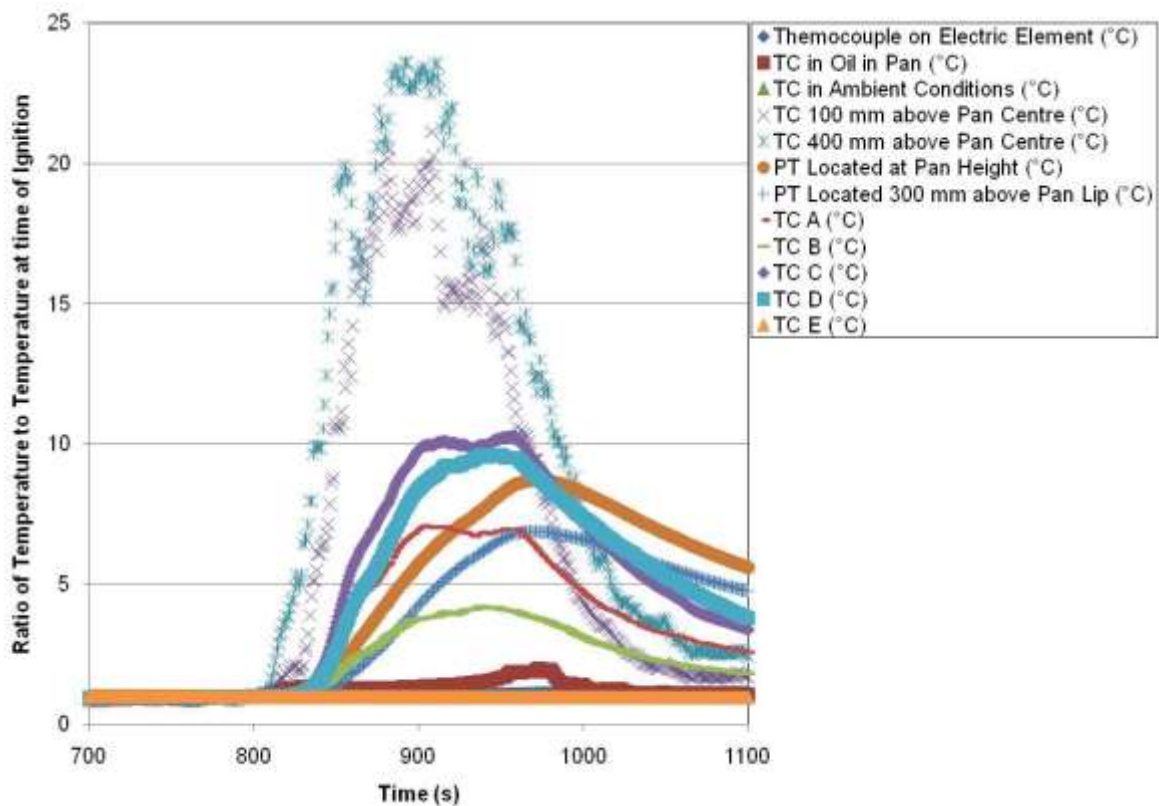


Figure 104: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 26.



## A.27 Test 27 – Electrical Contact Failure

## A.28 Test 28

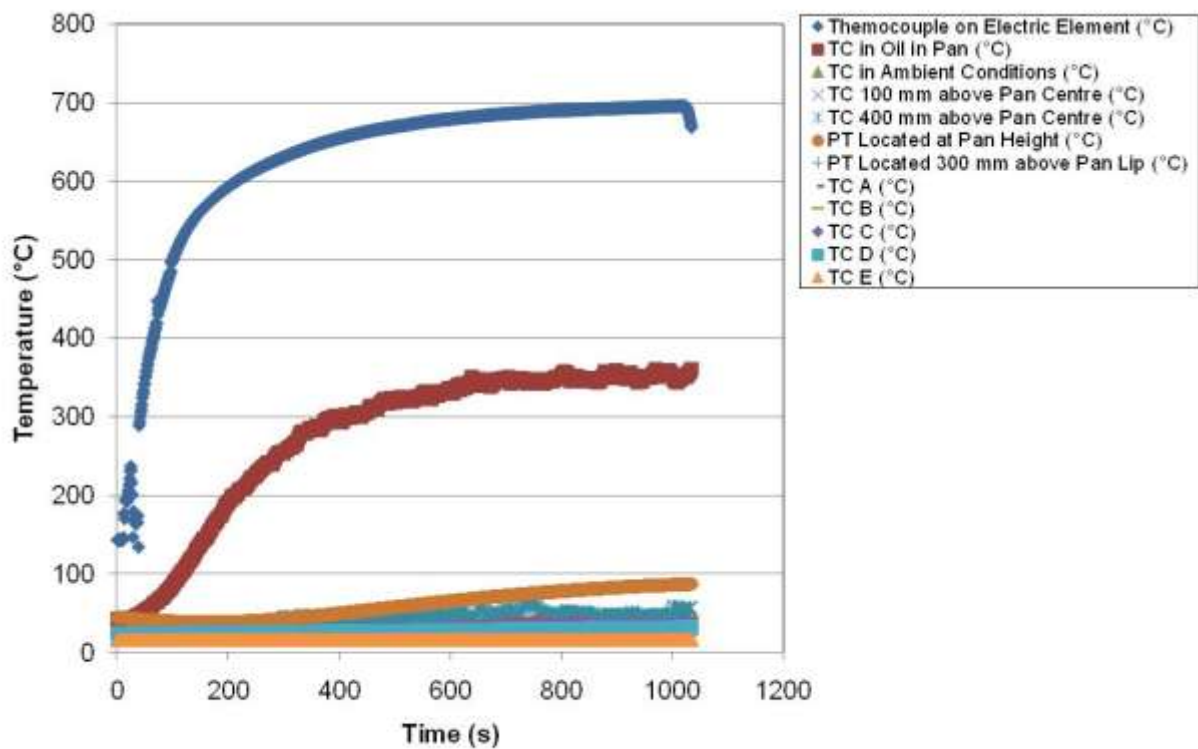


Figure 105: Measured temperatures of the thermocouples and plate thermometers for Test 28.

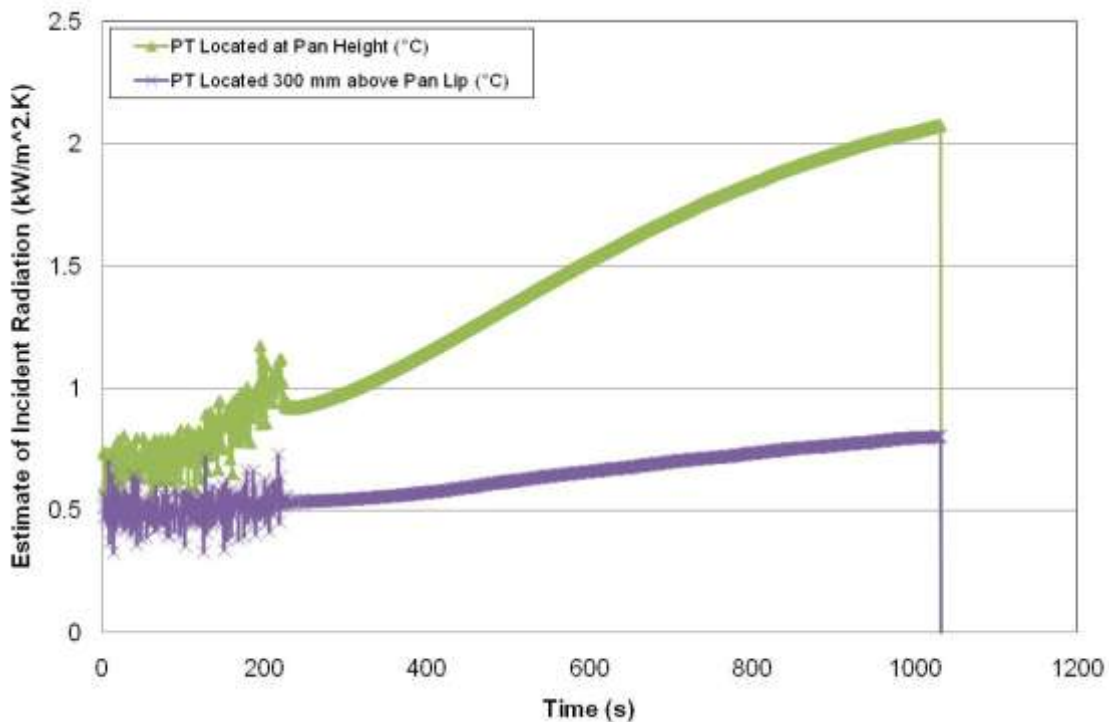


Figure 106: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 28.

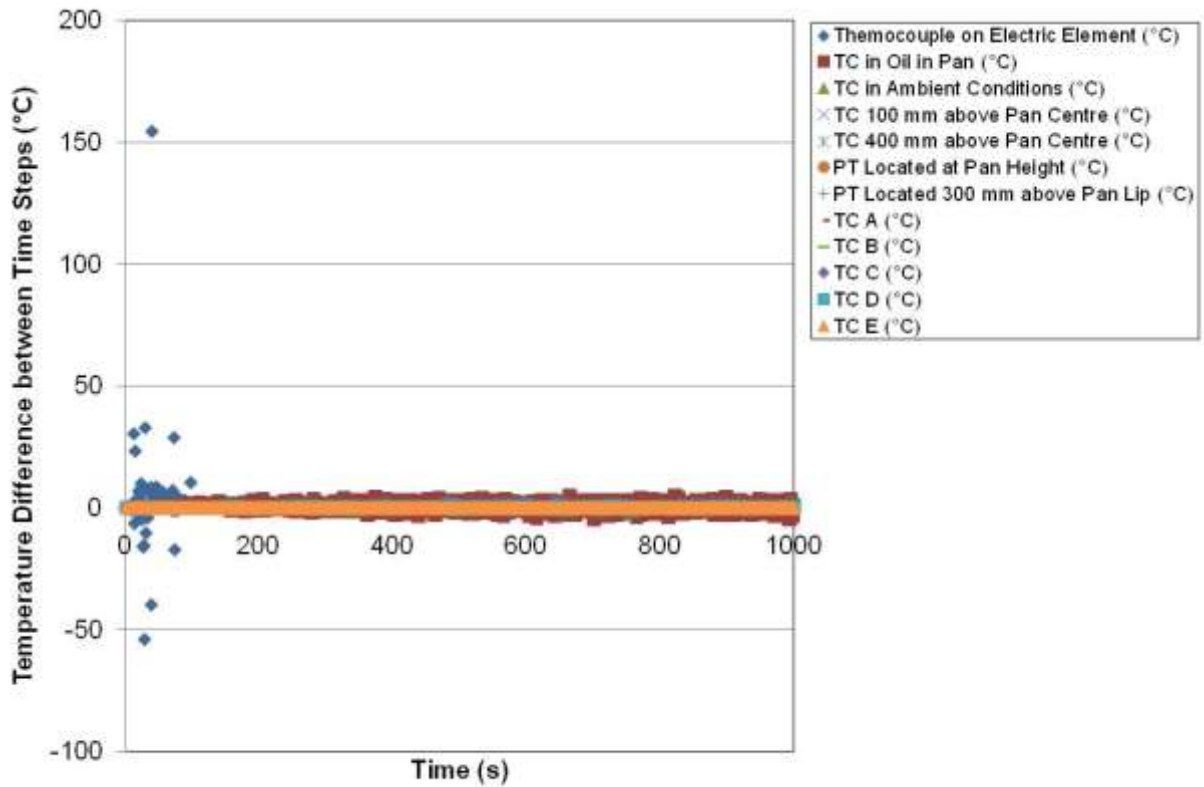


Figure 107: Differences of each of the variable temperatures to between sequential time steps for Test 28.

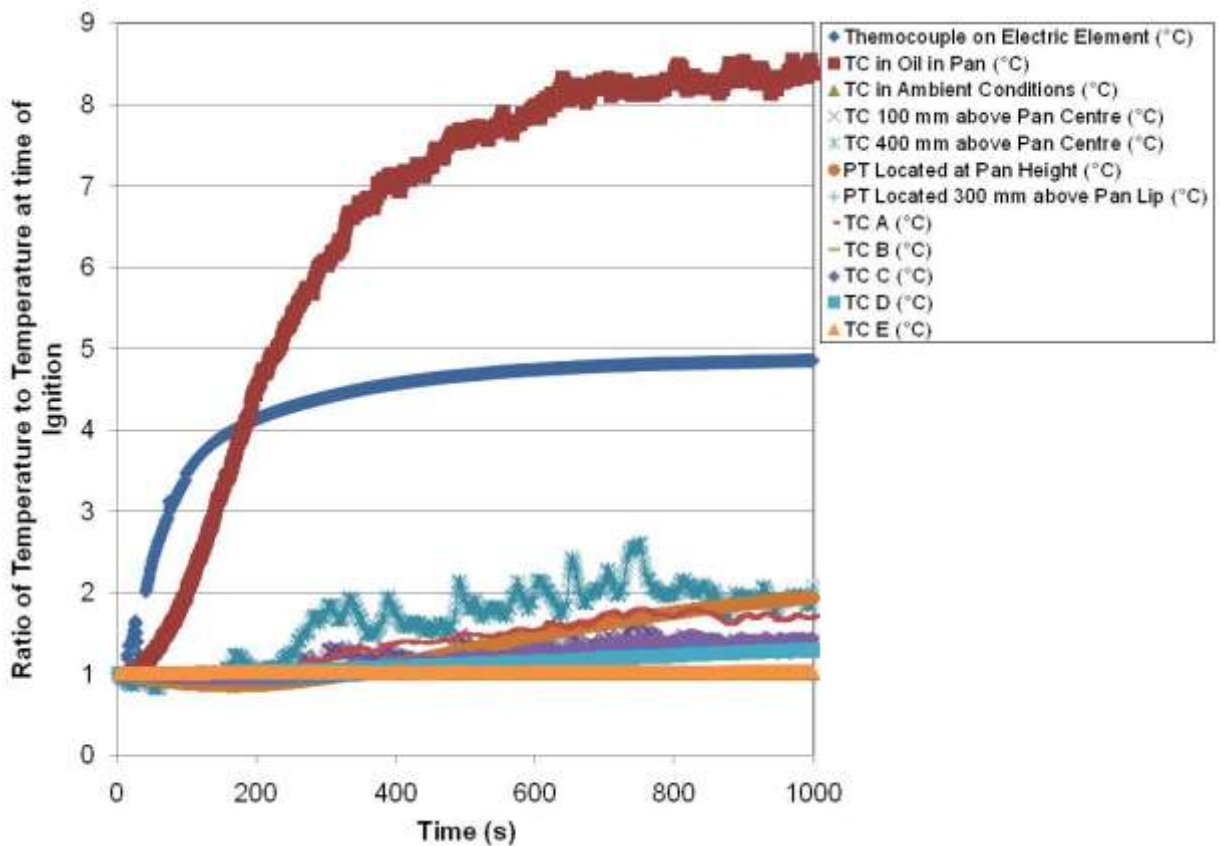


Figure 108: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 28.

## A.29 Test 29

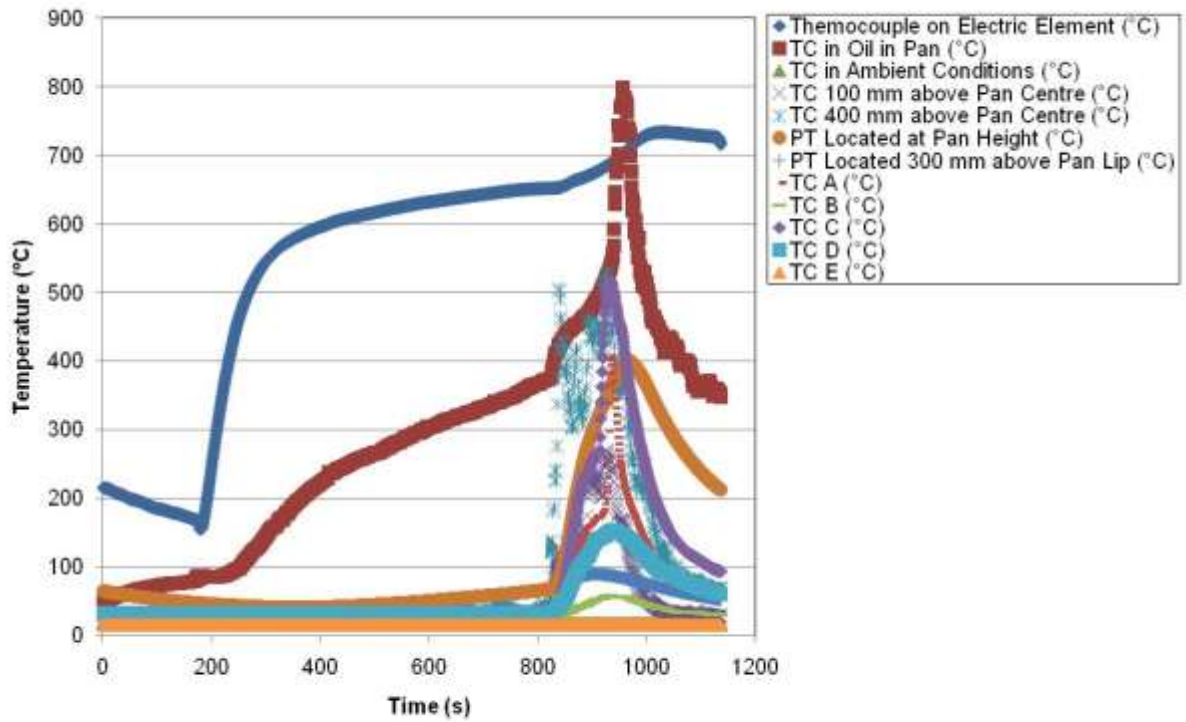


Figure 109: Measured temperatures of the thermocouples and plate thermometers for Test 29.

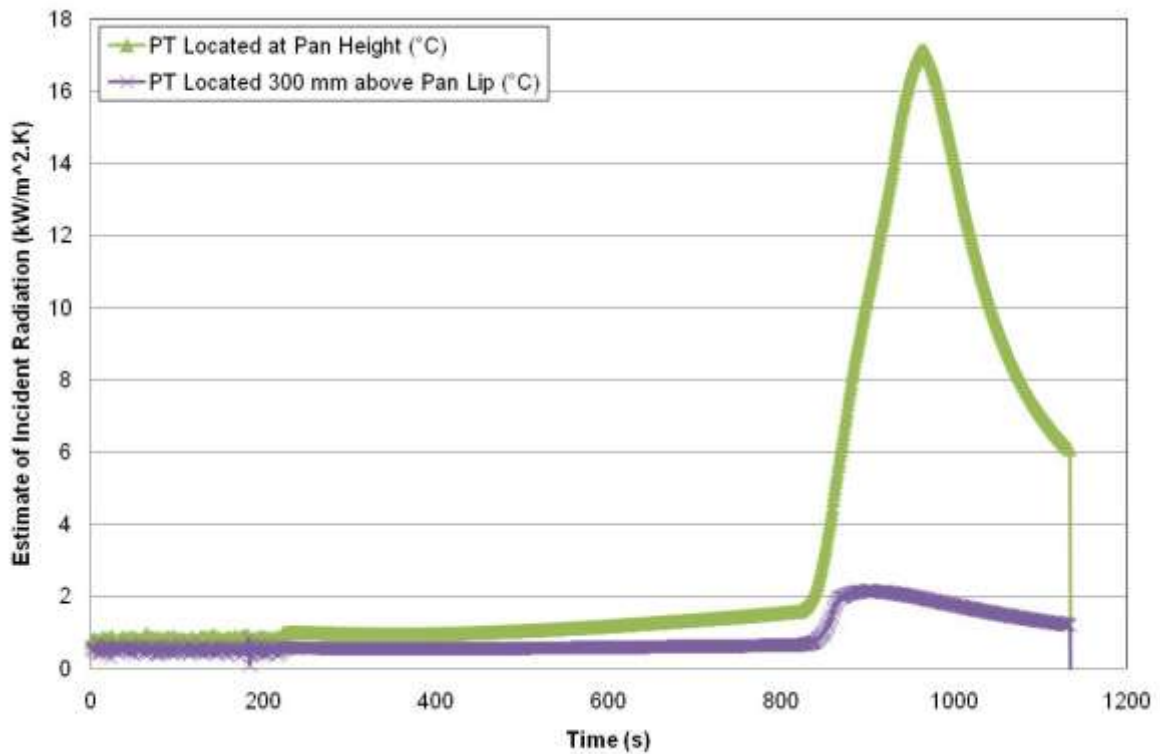


Figure 110: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 29.

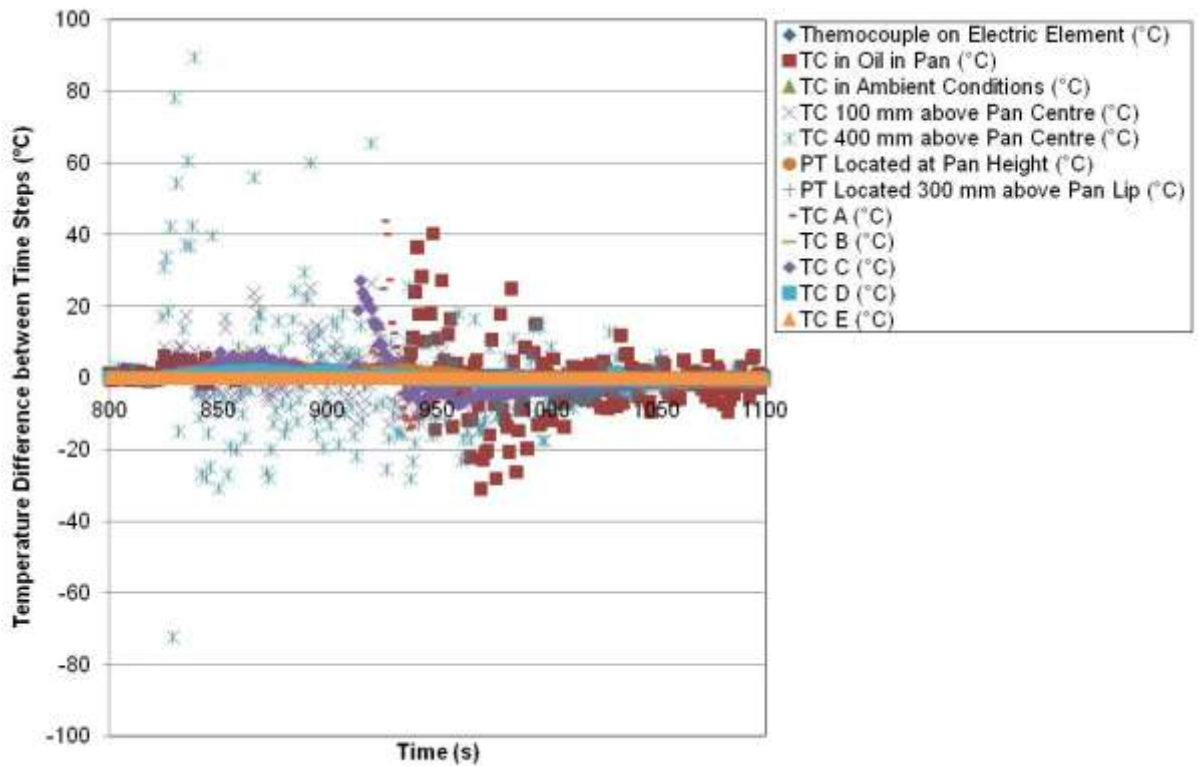


Figure 111: Differences of each of the variable temperatures to between sequential time steps for Test 29.

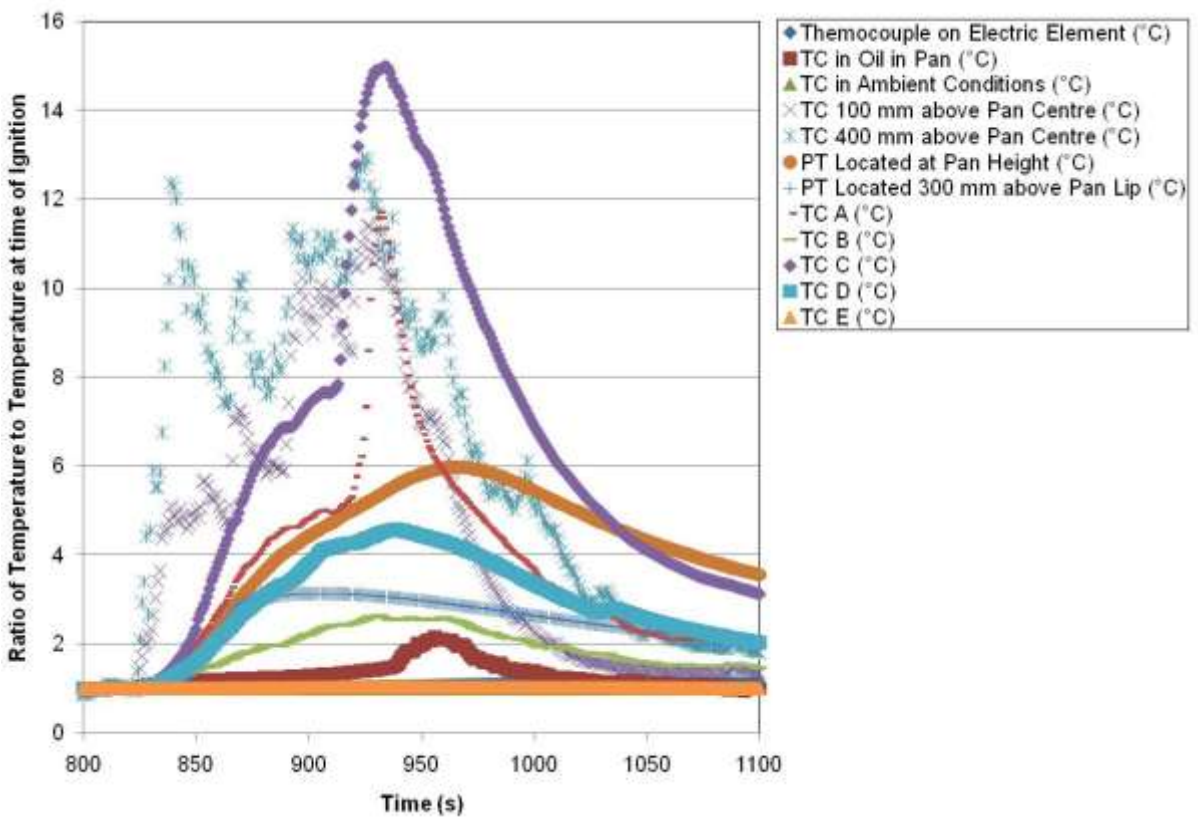


Figure 112: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 29.

## A.30 Test 30

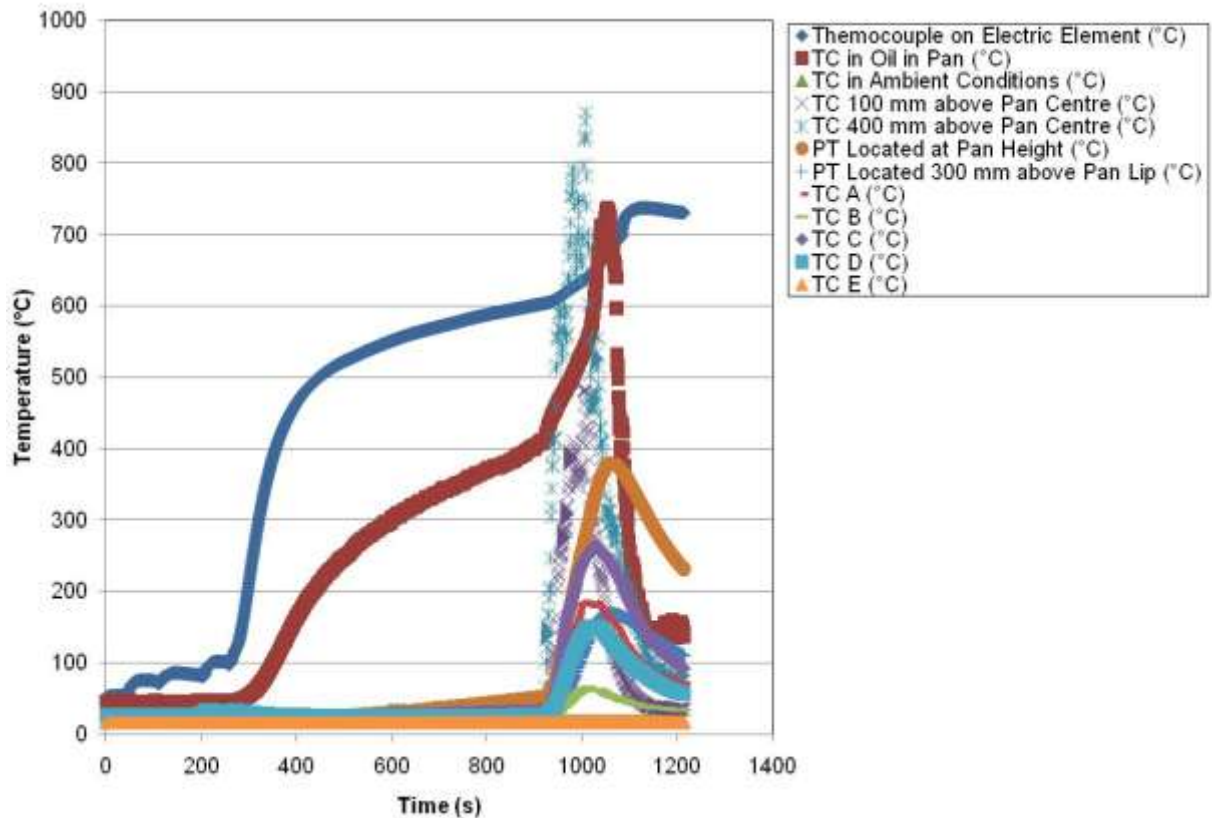


Figure 113: Measured temperatures of the thermocouples and plate thermometers for Test 30.

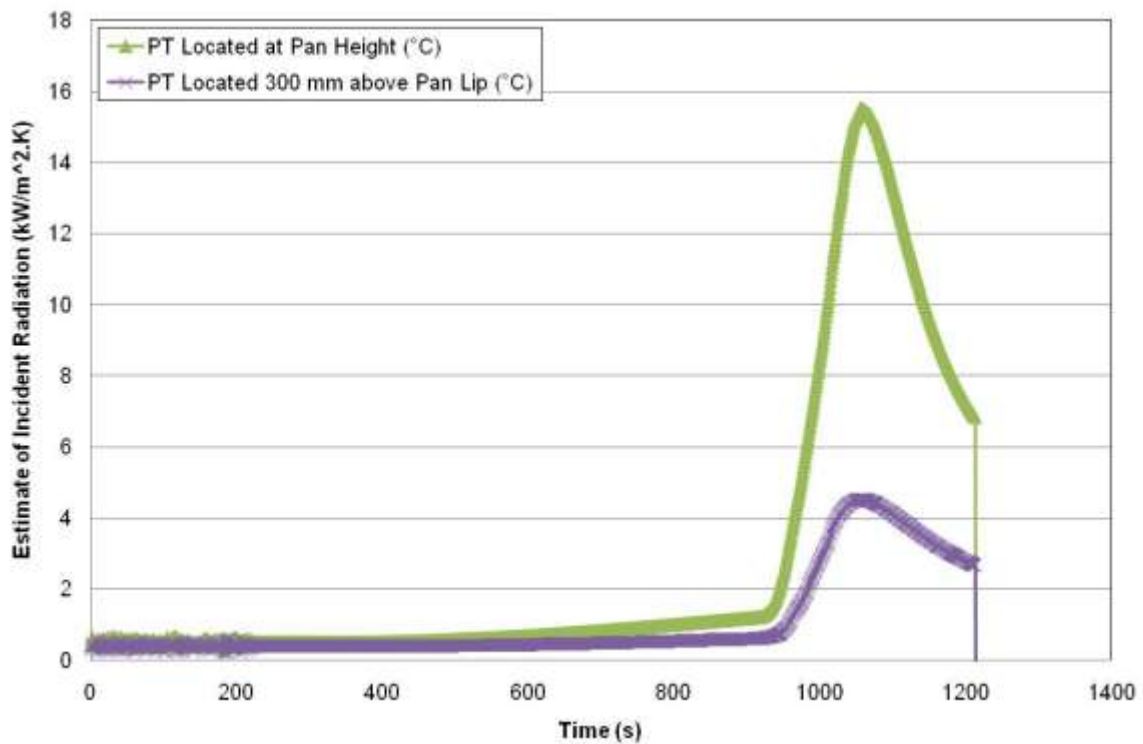


Figure 114: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 30.

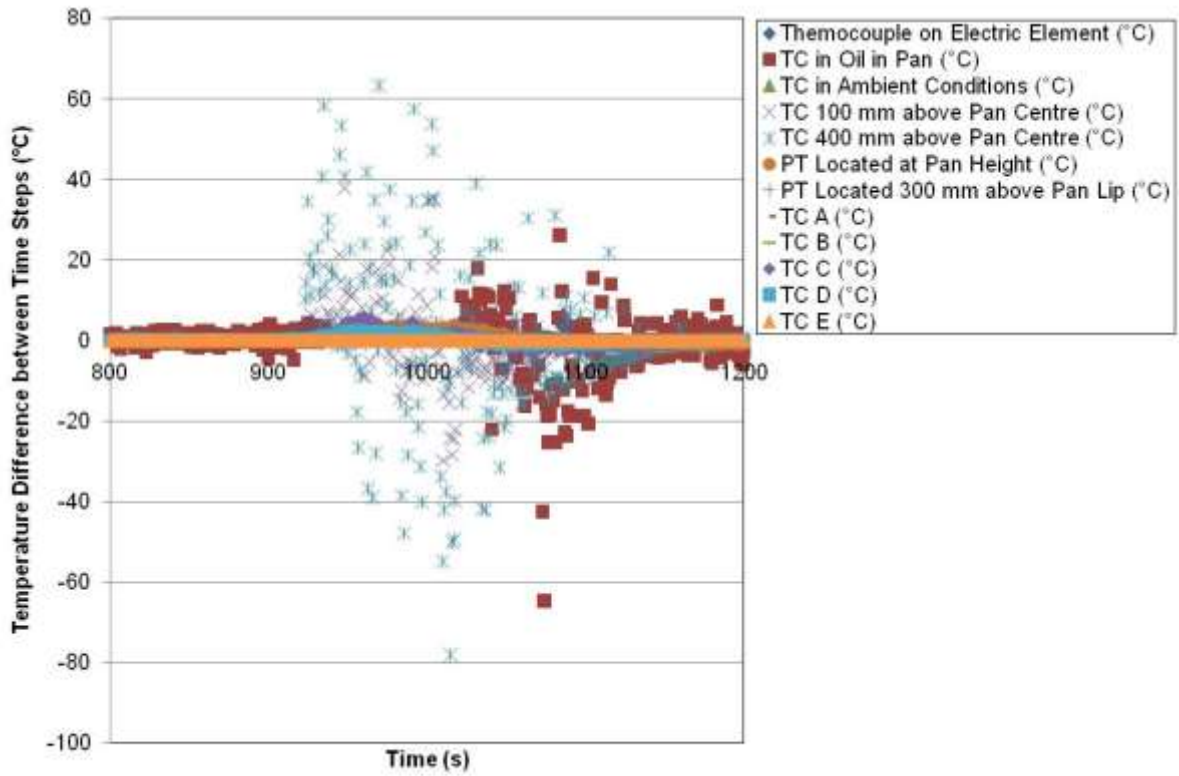


Figure 115: Differences of each of the variable temperatures to between sequential time steps for Test 30.

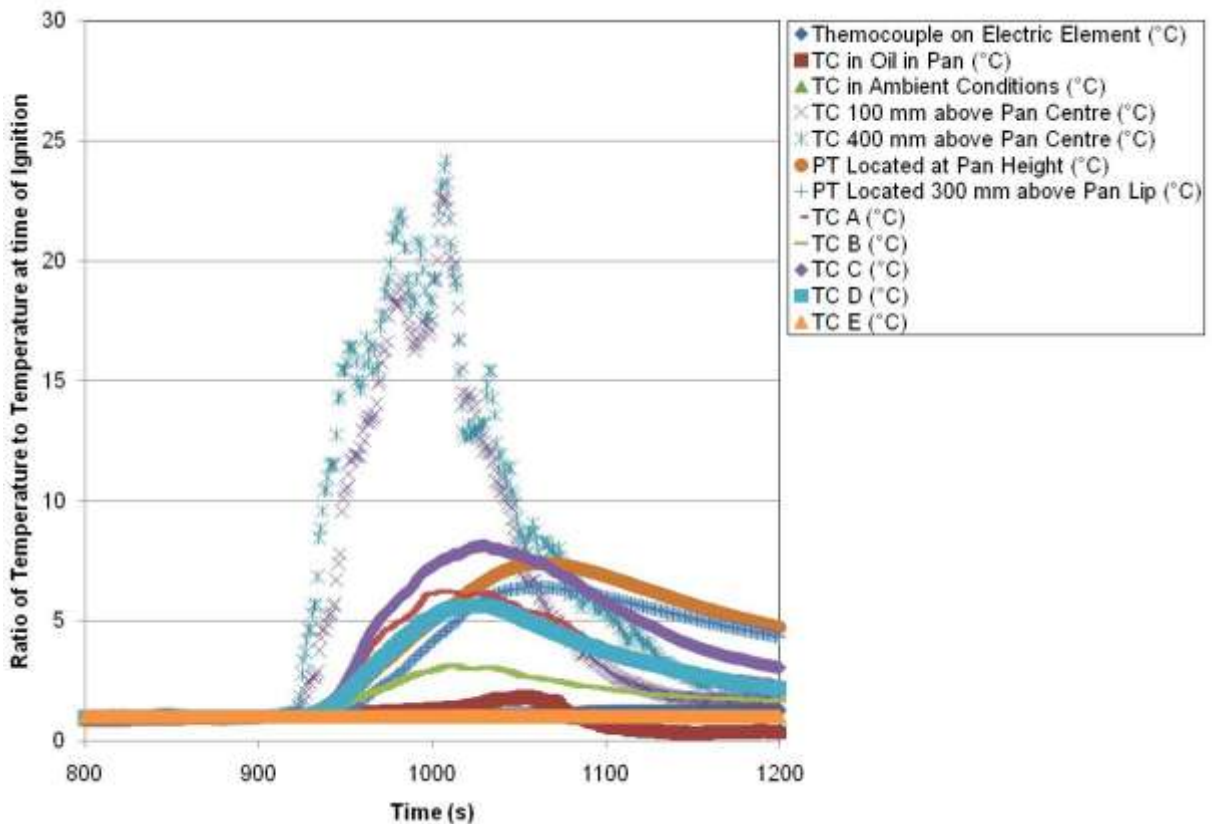


Figure 116: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 30.

## A.31 Test 31

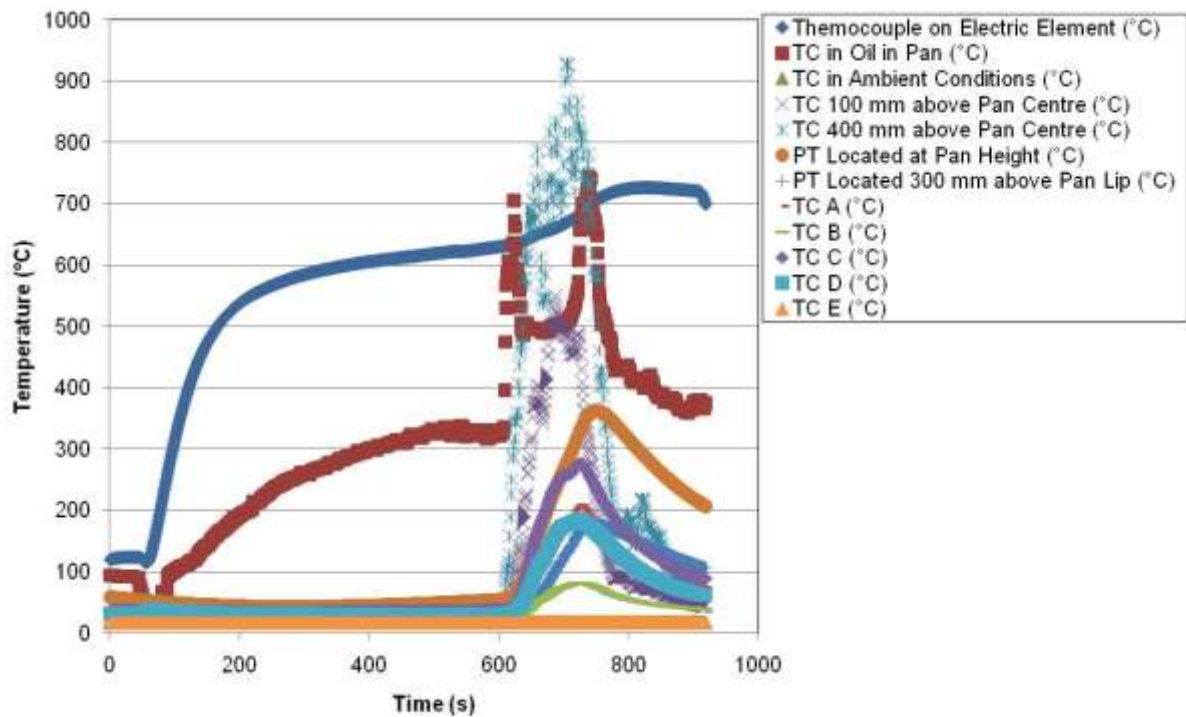


Figure 117: Measured temperatures of the thermocouples and plate thermometers for Test 31.

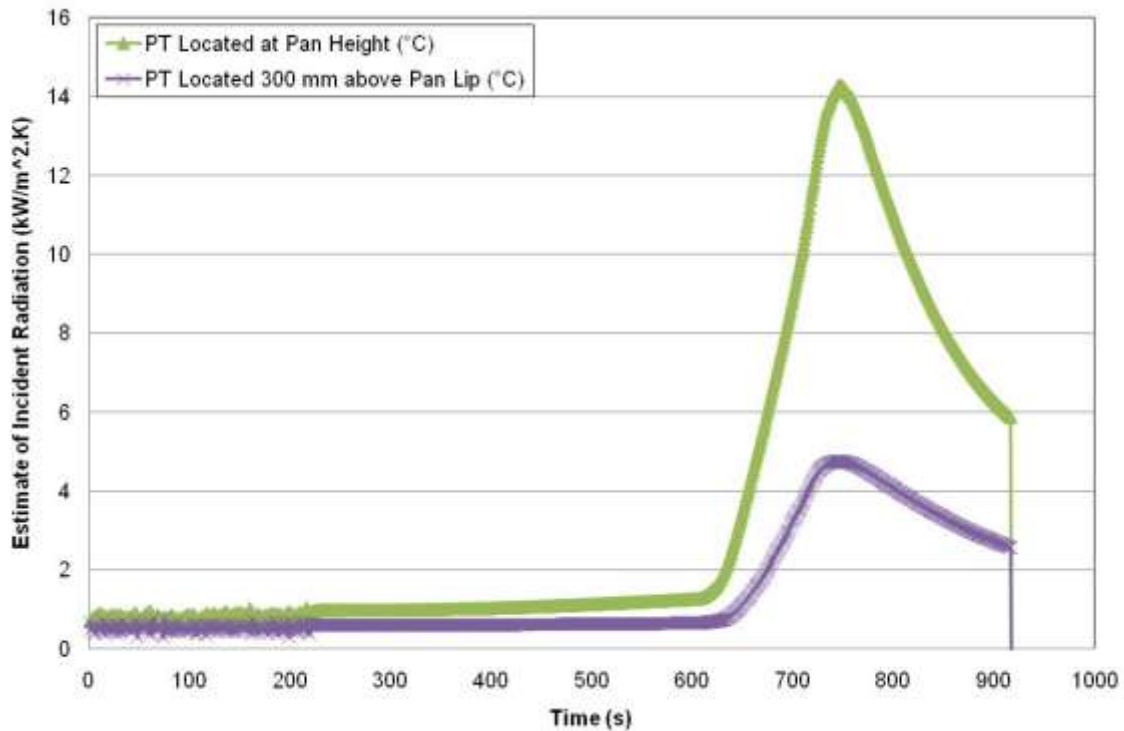


Figure 118: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 31.

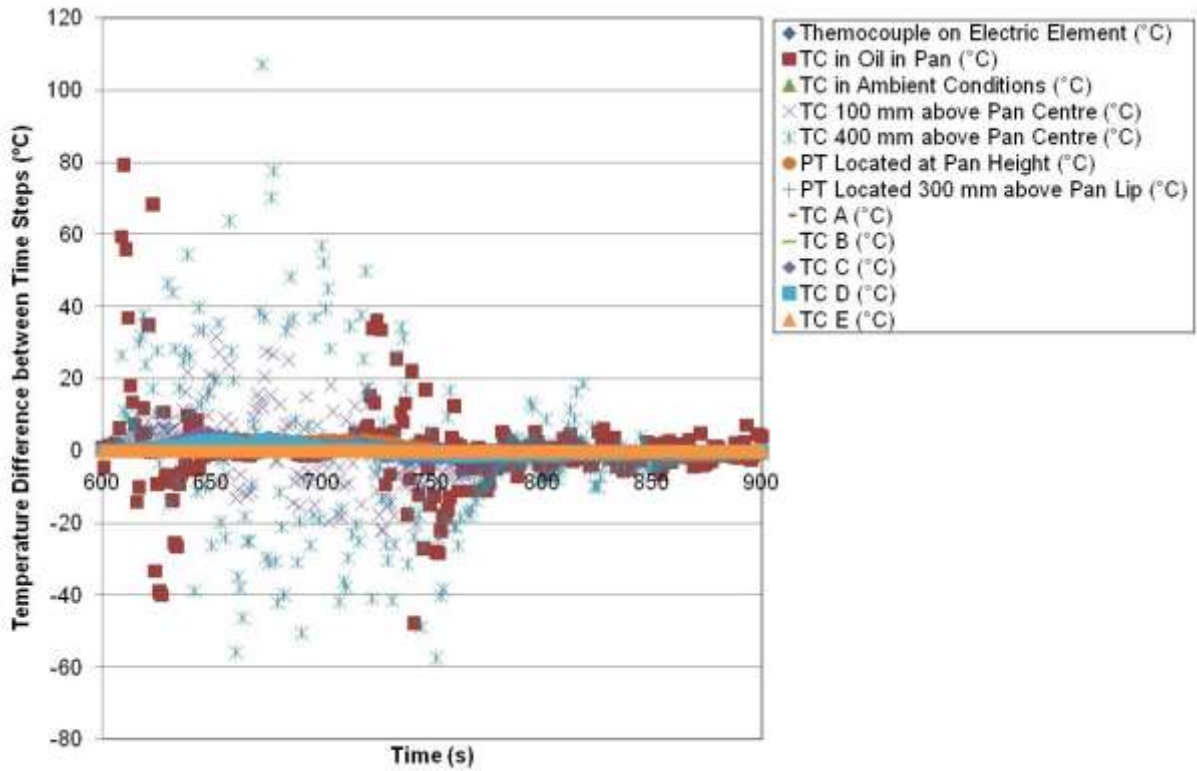


Figure 119: Differences of each of the variable temperatures to between sequential time steps for Test 31.

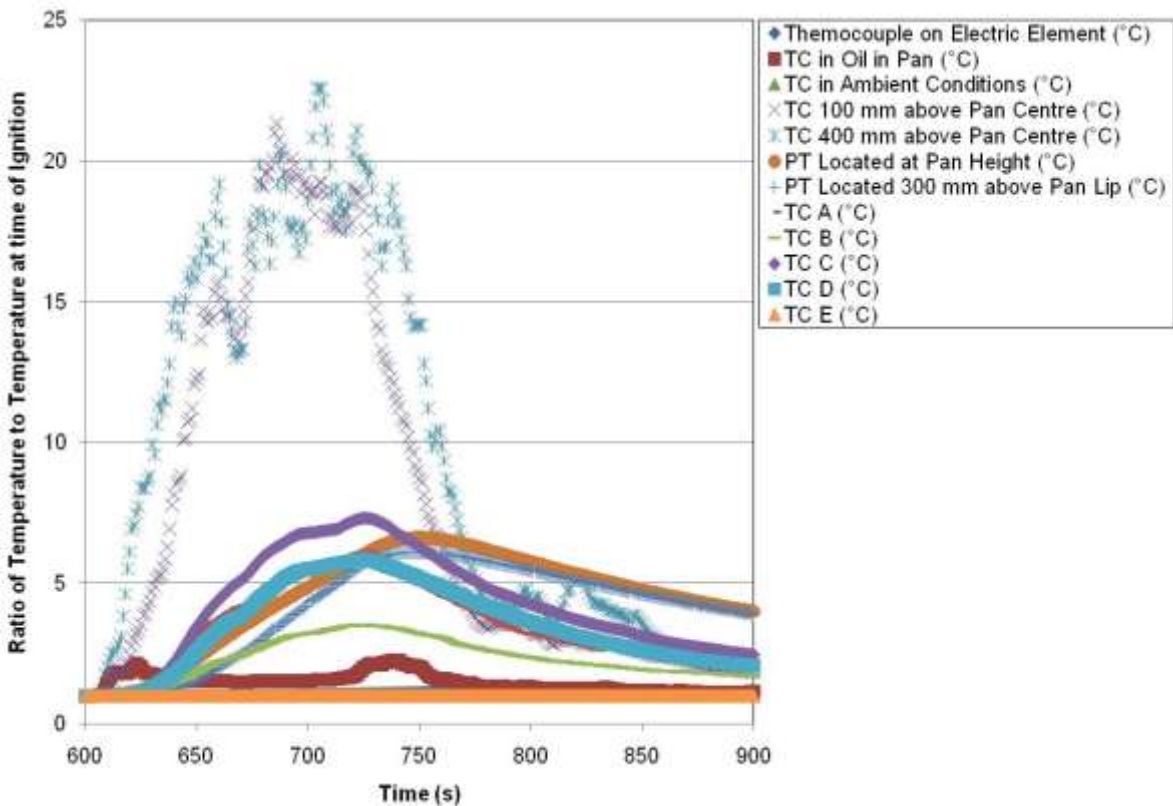


Figure 120: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 31.



### A.32 Test 32 – Electric element, Skillet, 200 ml Canola oil, Cup of water added

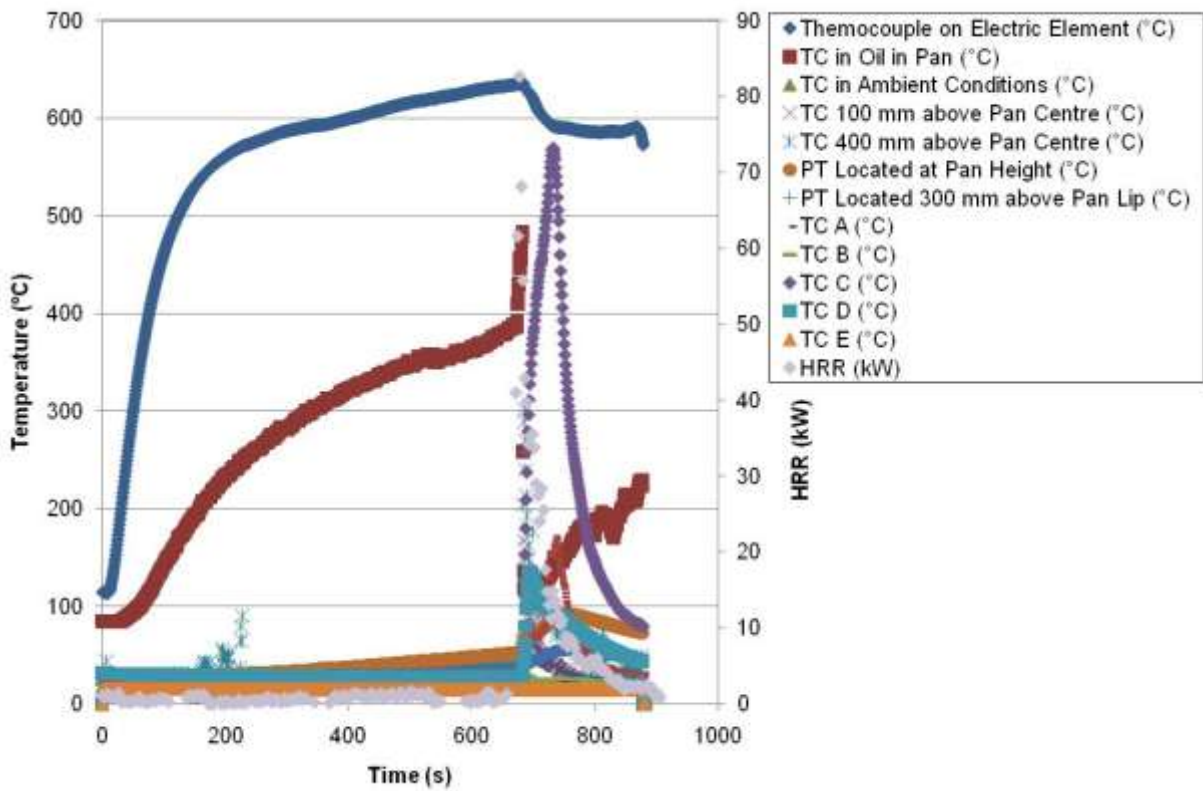


Figure 121: Measured temperatures of the thermocouples and plate thermometers for Test 32.

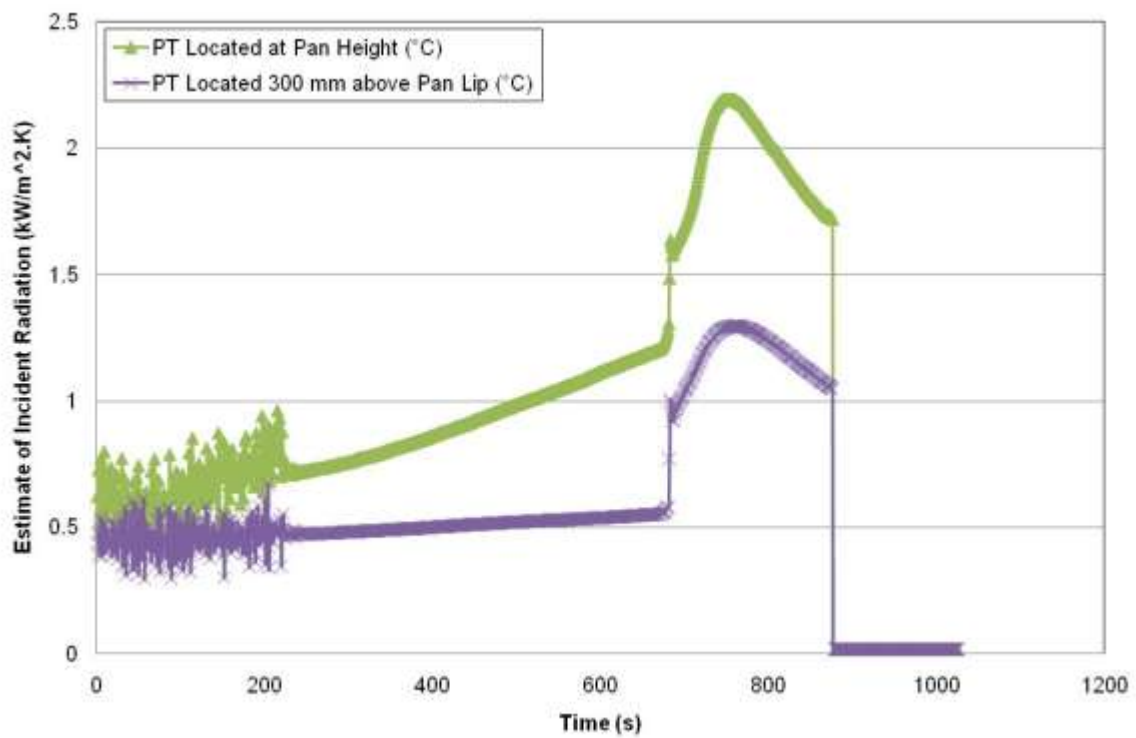


Figure 122: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 32.

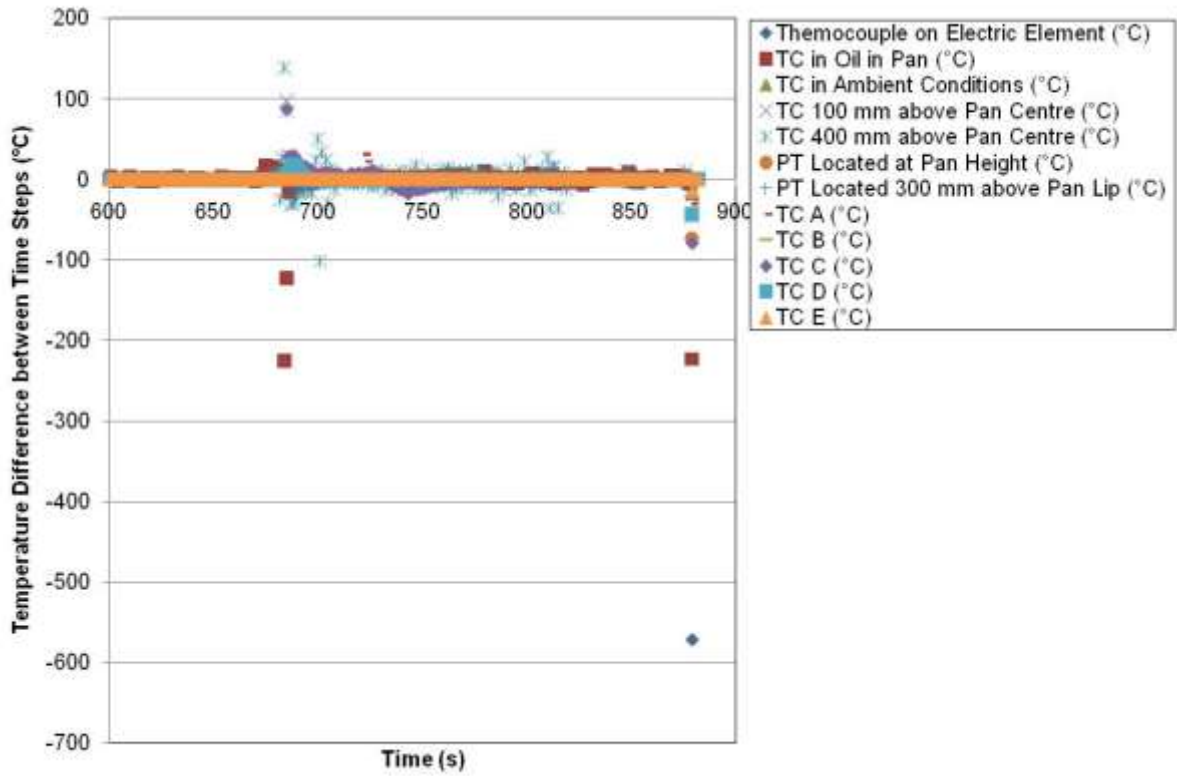


Figure 123: Differences of each of the variable temperatures to between sequential time steps for Test 32.

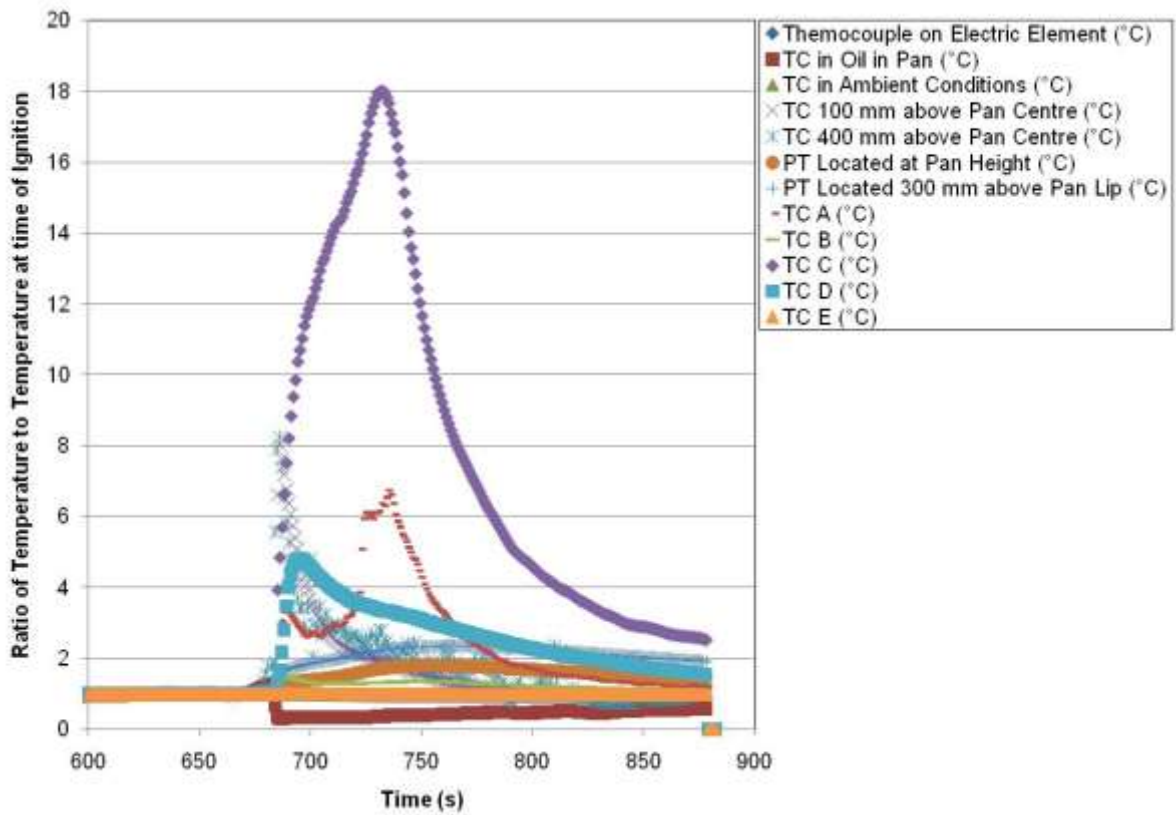


Figure 124: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 32.

### A.33 Test 33 – Electric element, Skillet, 200 ml Canola oil, Cup of water added

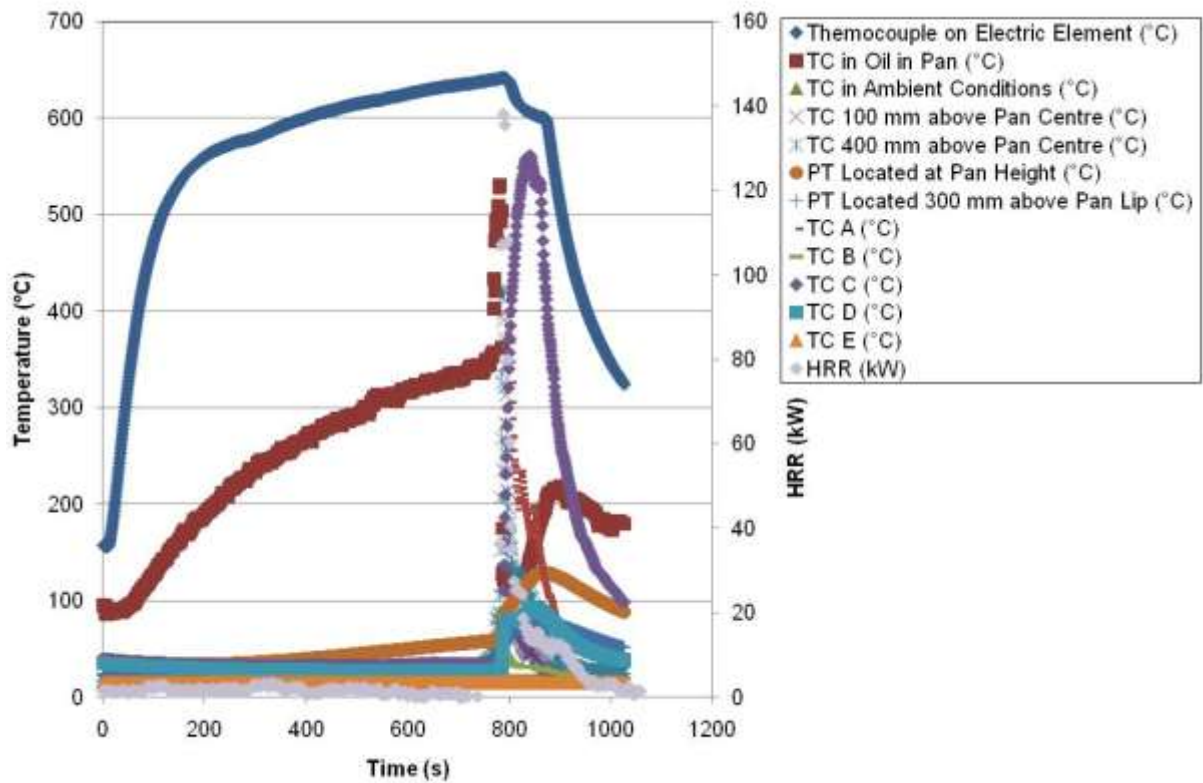


Figure 125: Measured temperatures of the thermocouples and plate thermometers for Test 33.

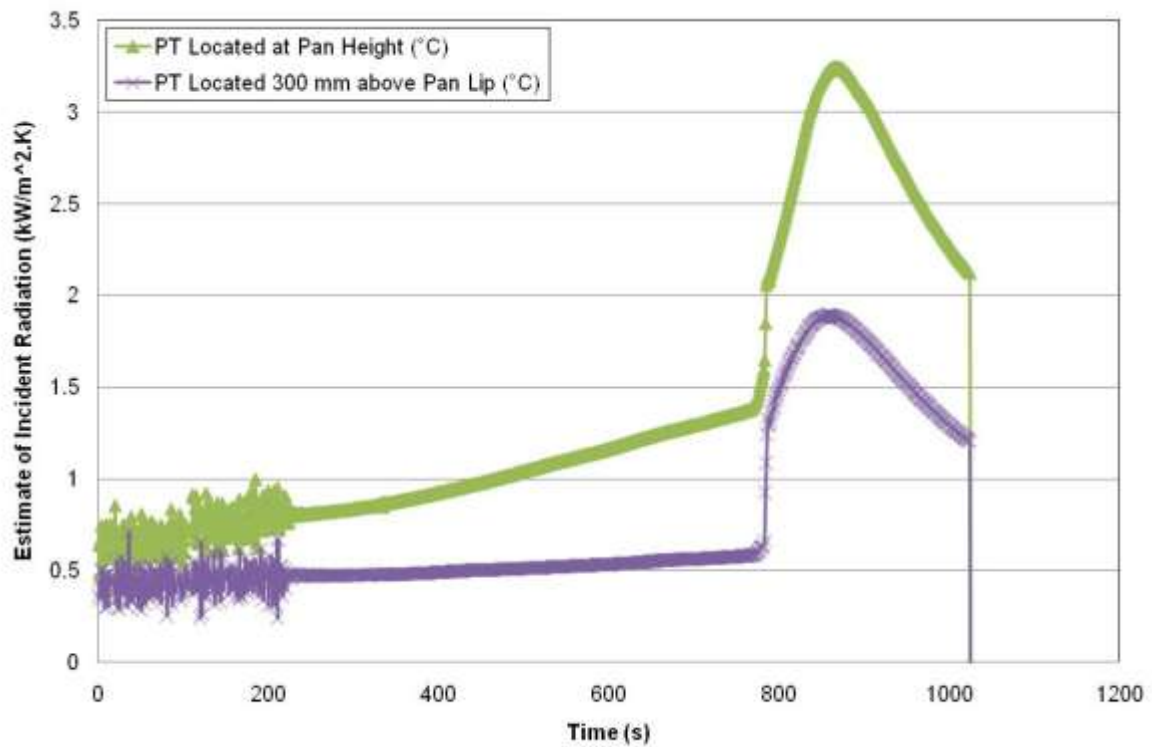


Figure 126: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 33.

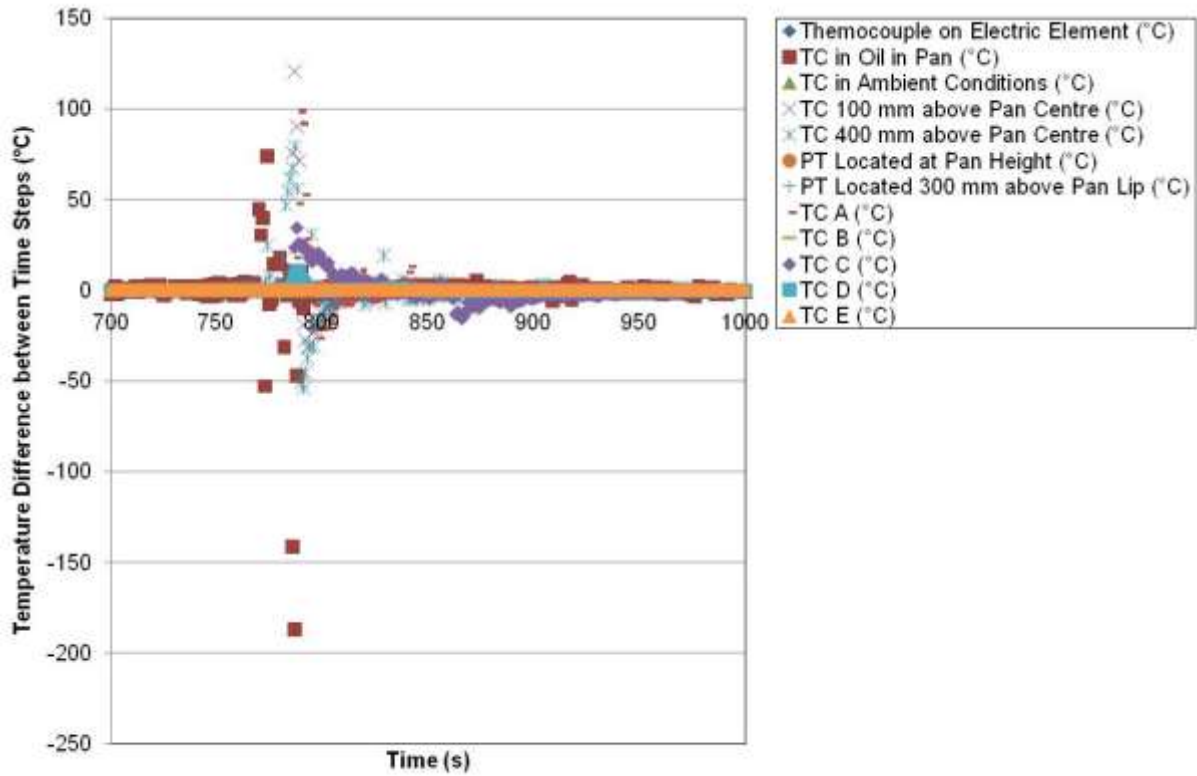


Figure 127: Differences of each of the variable temperatures to between sequential time steps for Test 33.

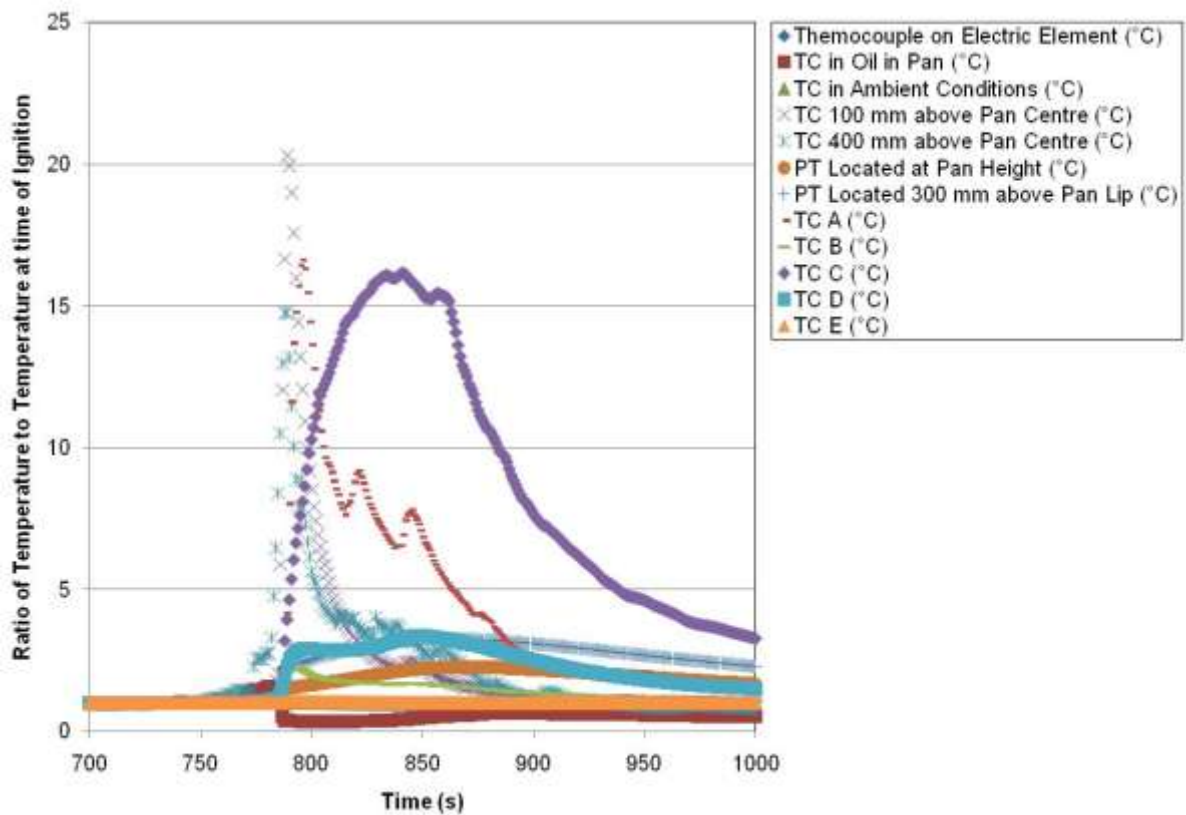


Figure 128: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 33.

**A.34 Test 34 – Electric element, Skillet, 200 ml Canola oil, Cup of water added (poured more slowly than Tests 32 or 33)**

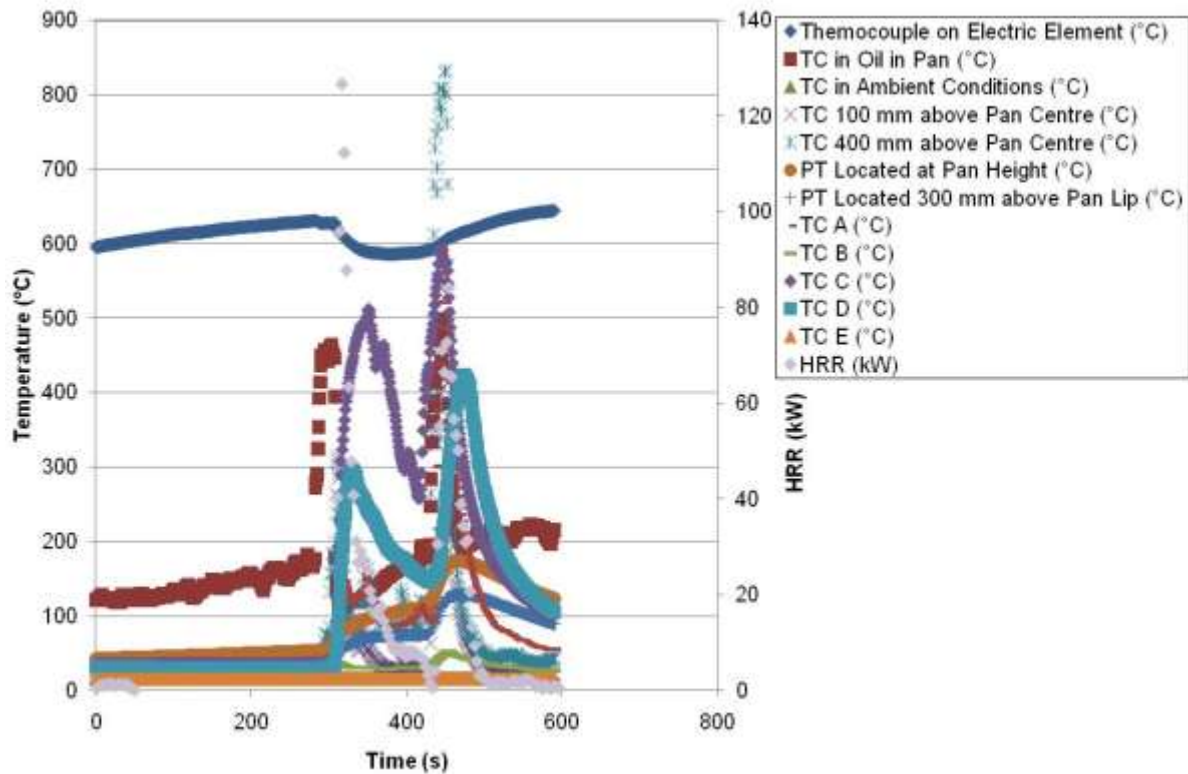


Figure 129: Measured temperatures of the thermocouples and plate thermometers for Test 34.

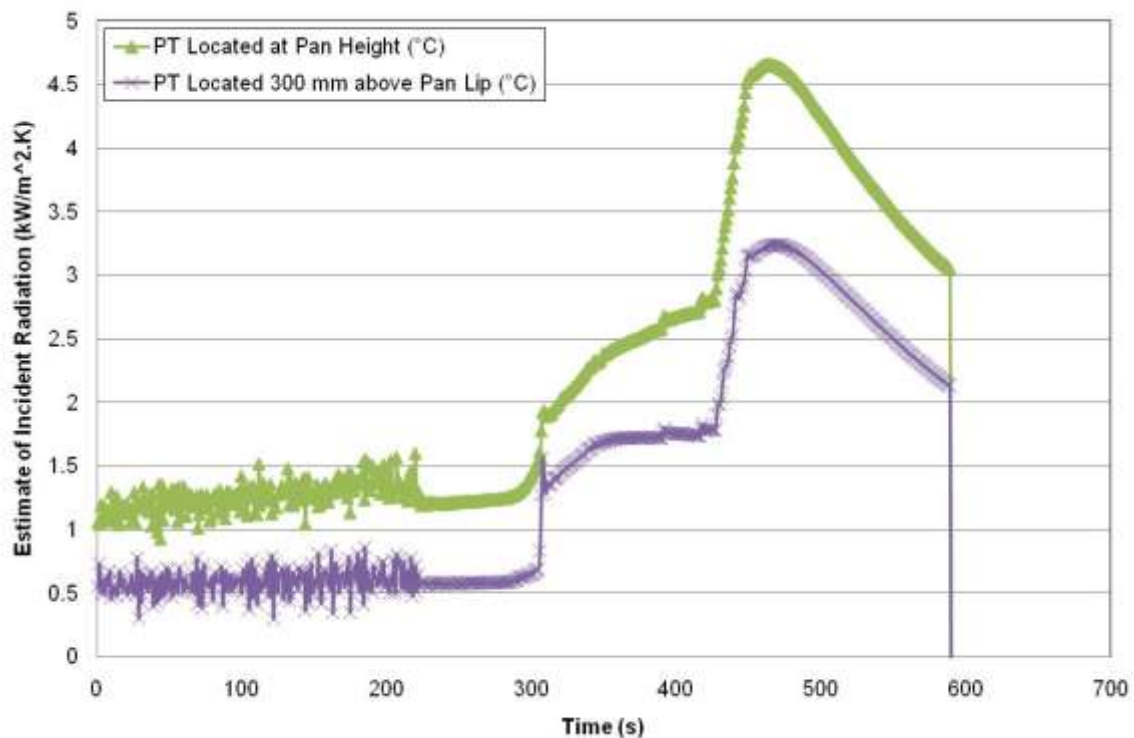


Figure 130: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 34.

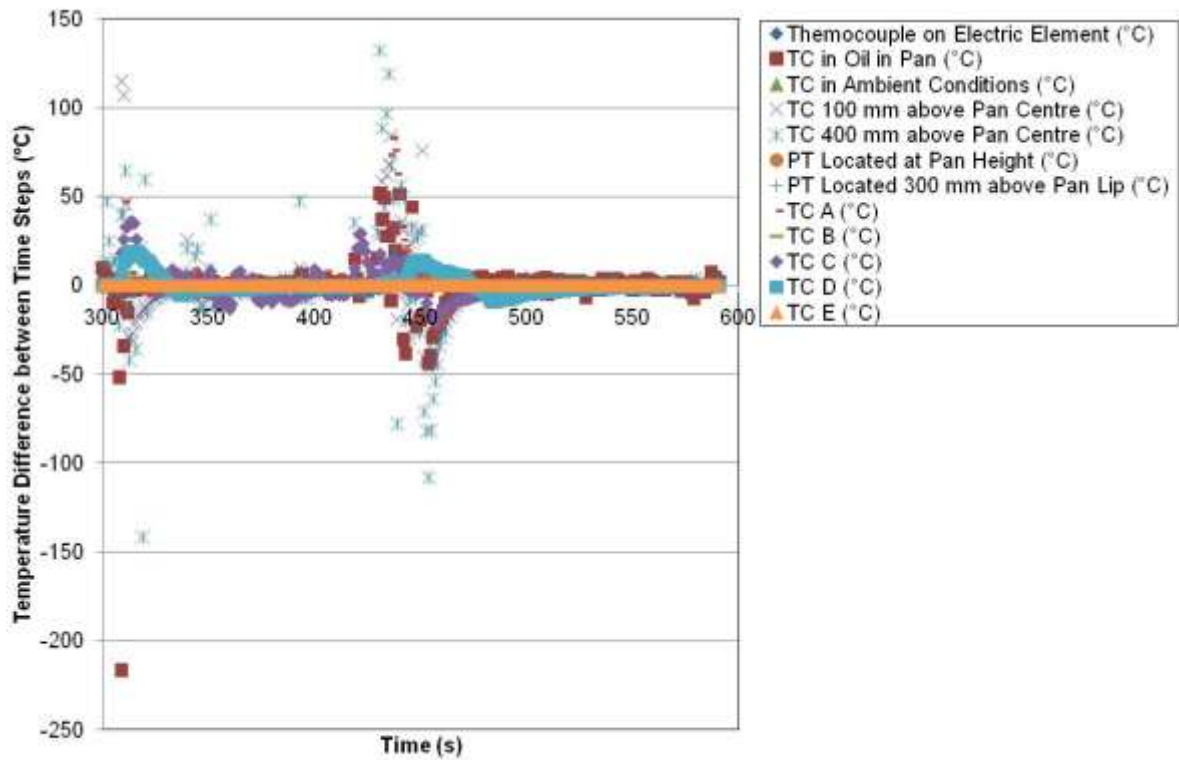


Figure 131: Differences of each of the variable temperatures to between sequential time steps for Test 34.

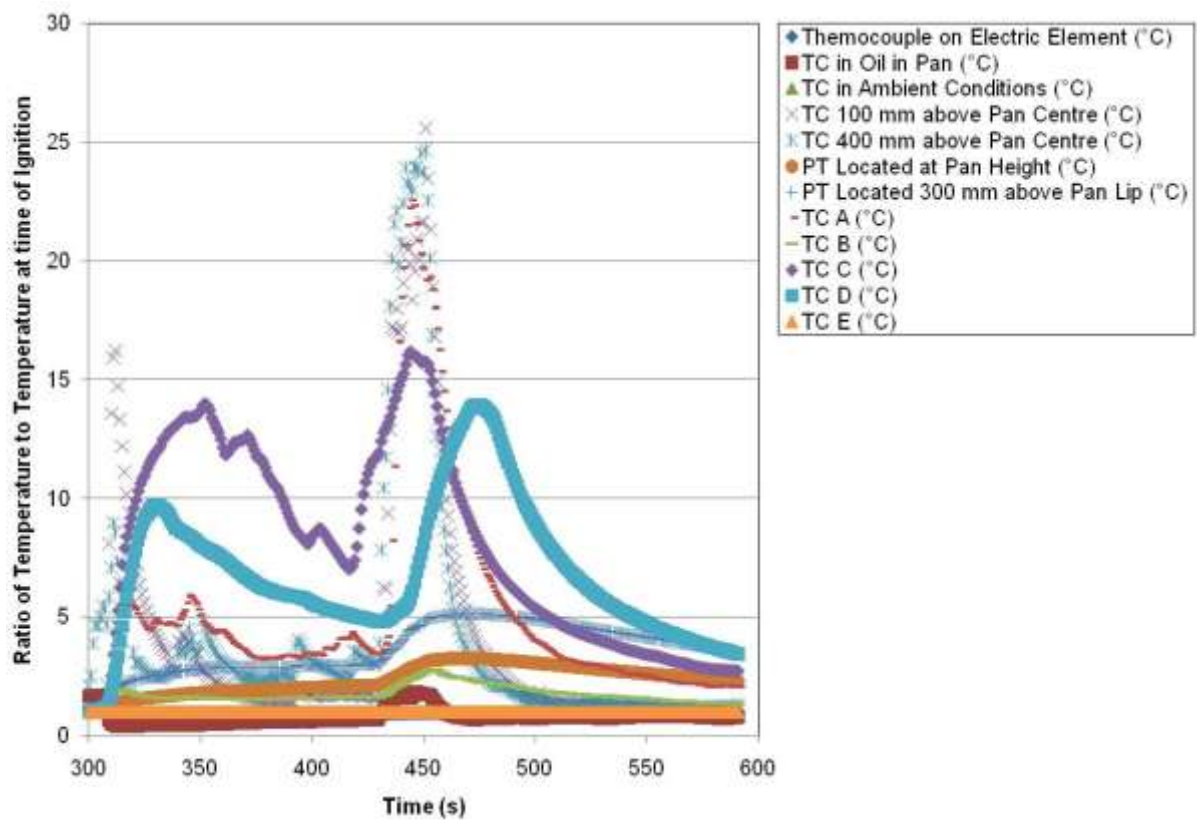


Figure 132: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 34.

## A.35 Test 35

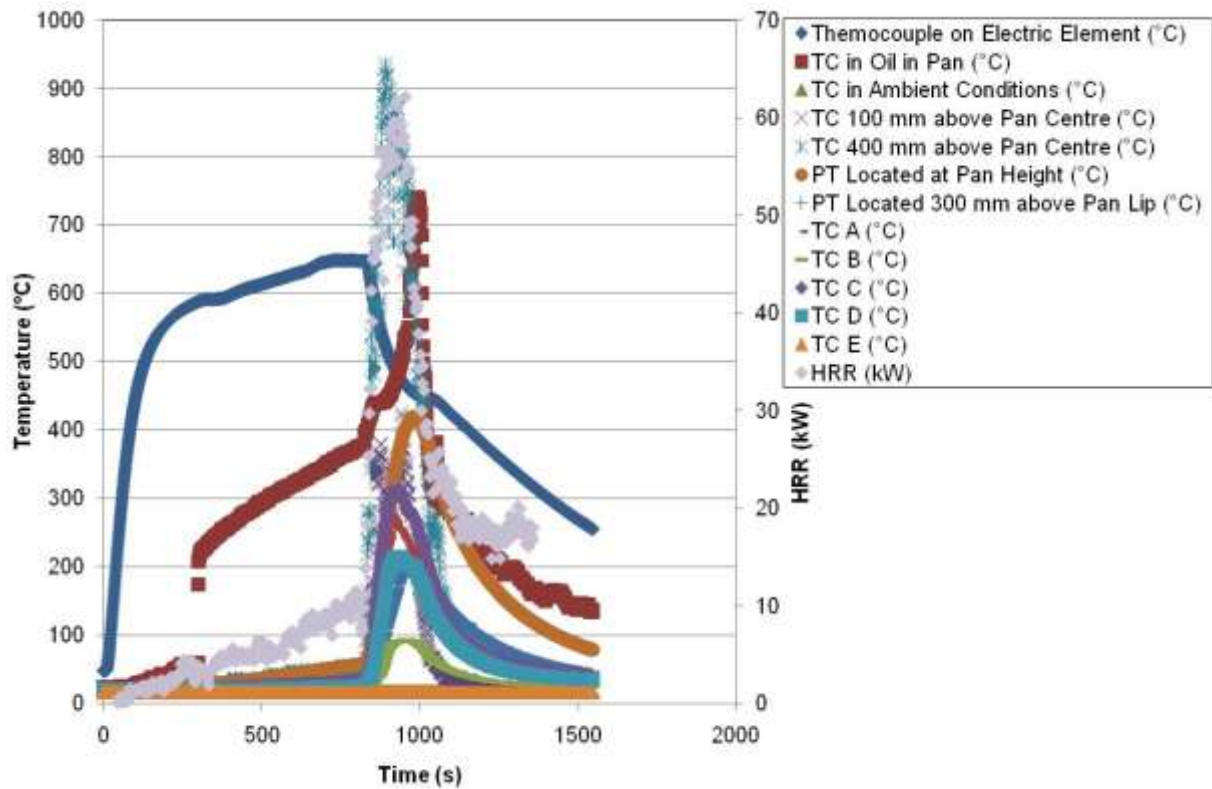


Figure 133: Measured temperatures of the thermocouples and plate thermometers for Test 35.

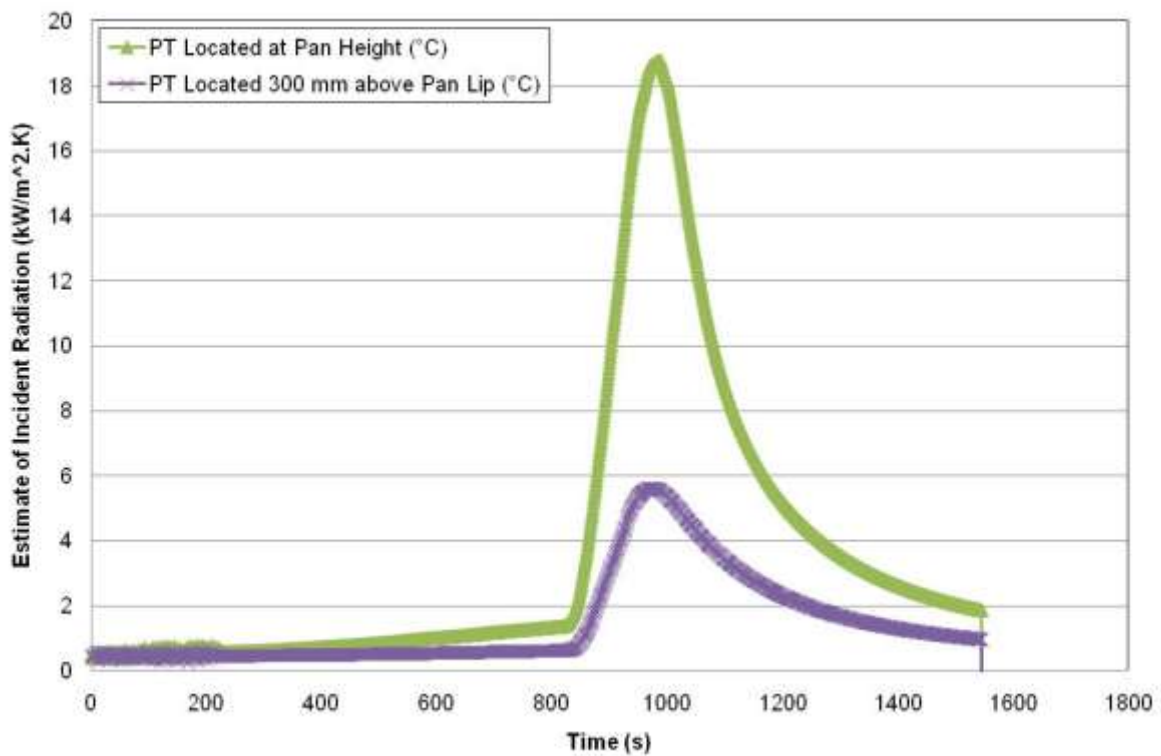


Figure 134: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 35.

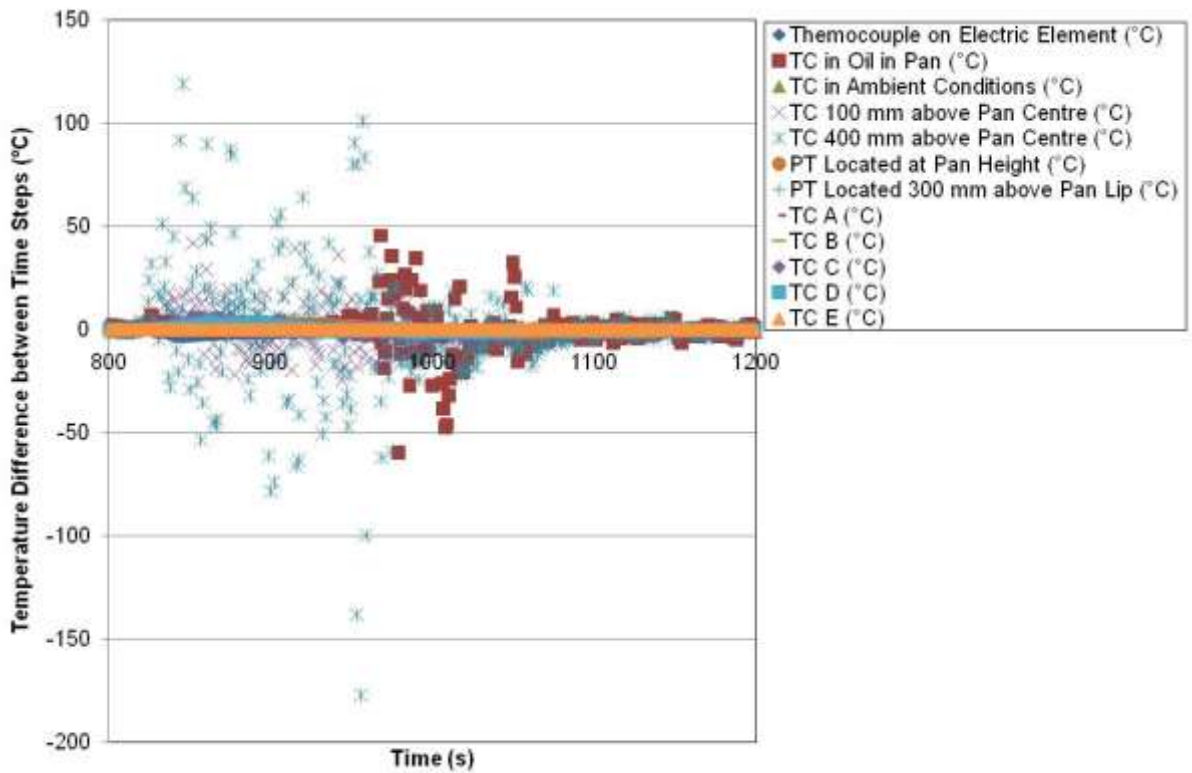


Figure 135: Differences of each of the variable temperatures to between sequential time steps for Test 35.

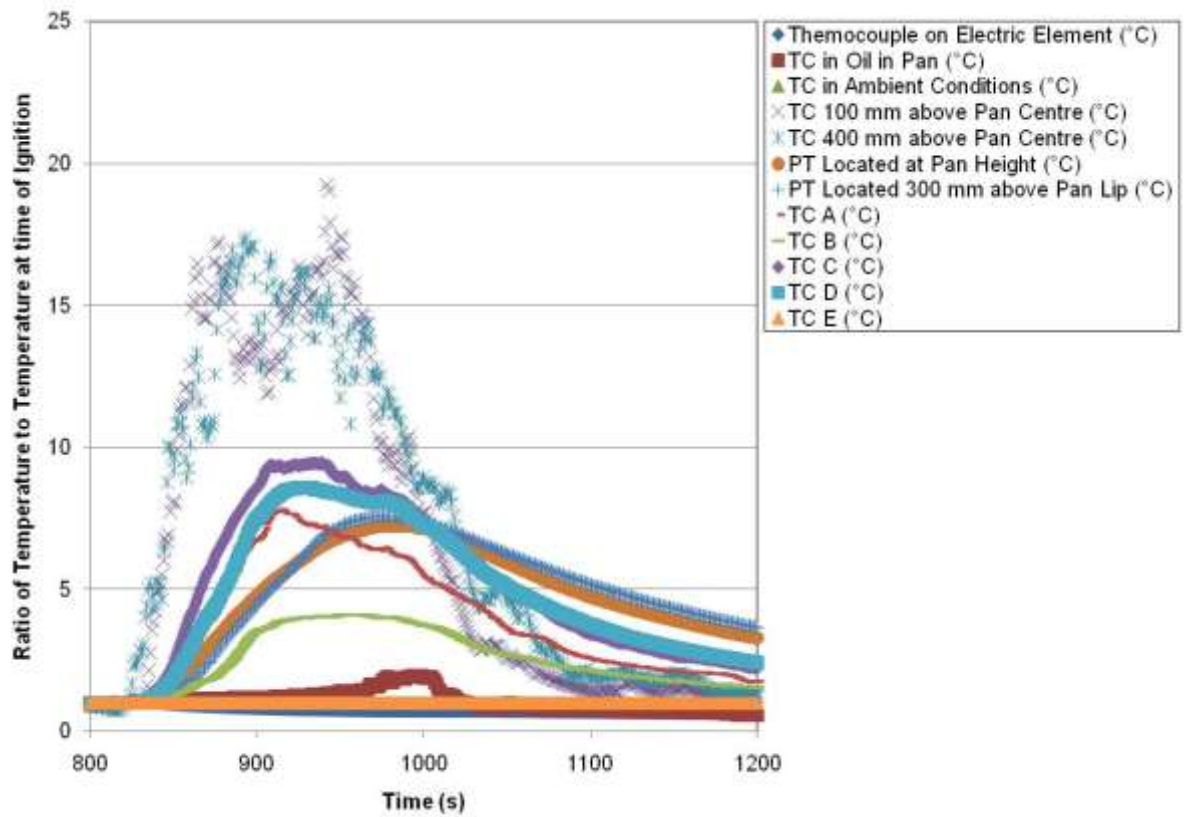


Figure 136: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 35.



## A.36 Test 36

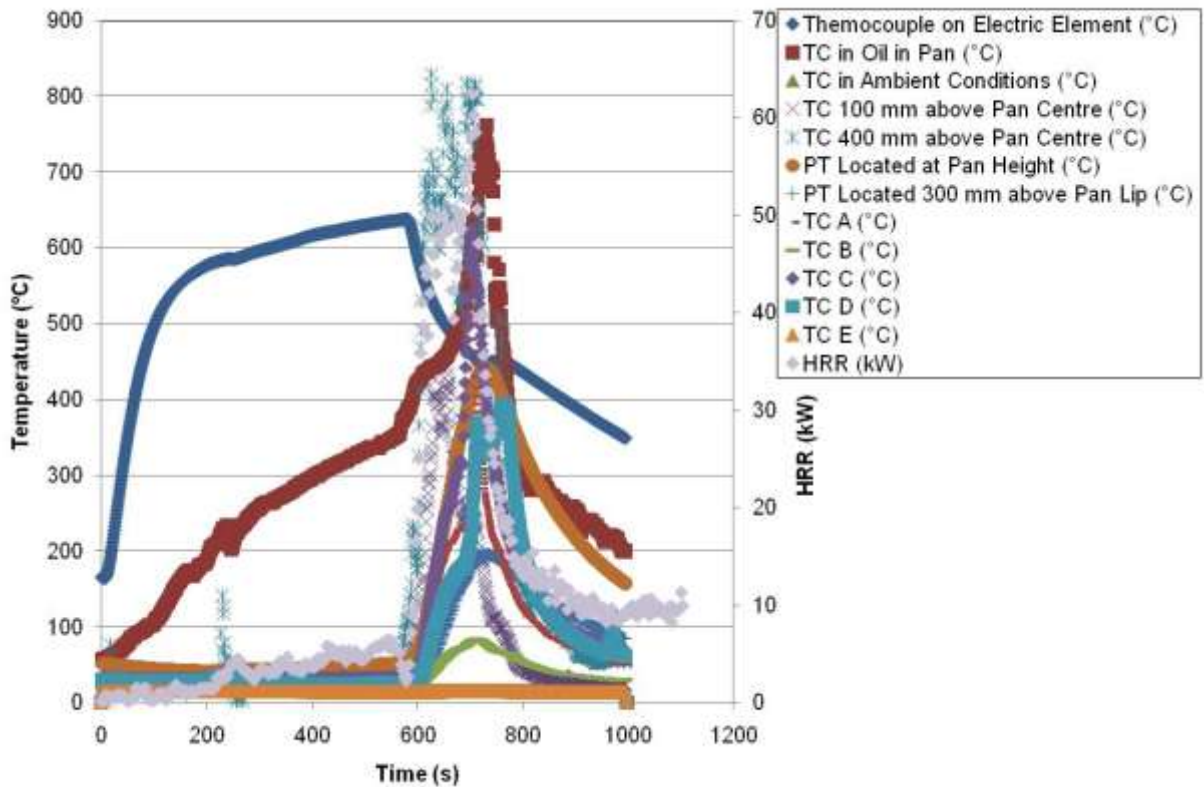


Figure 137: Measured temperatures of the thermocouples and plate thermometers for Test 36.

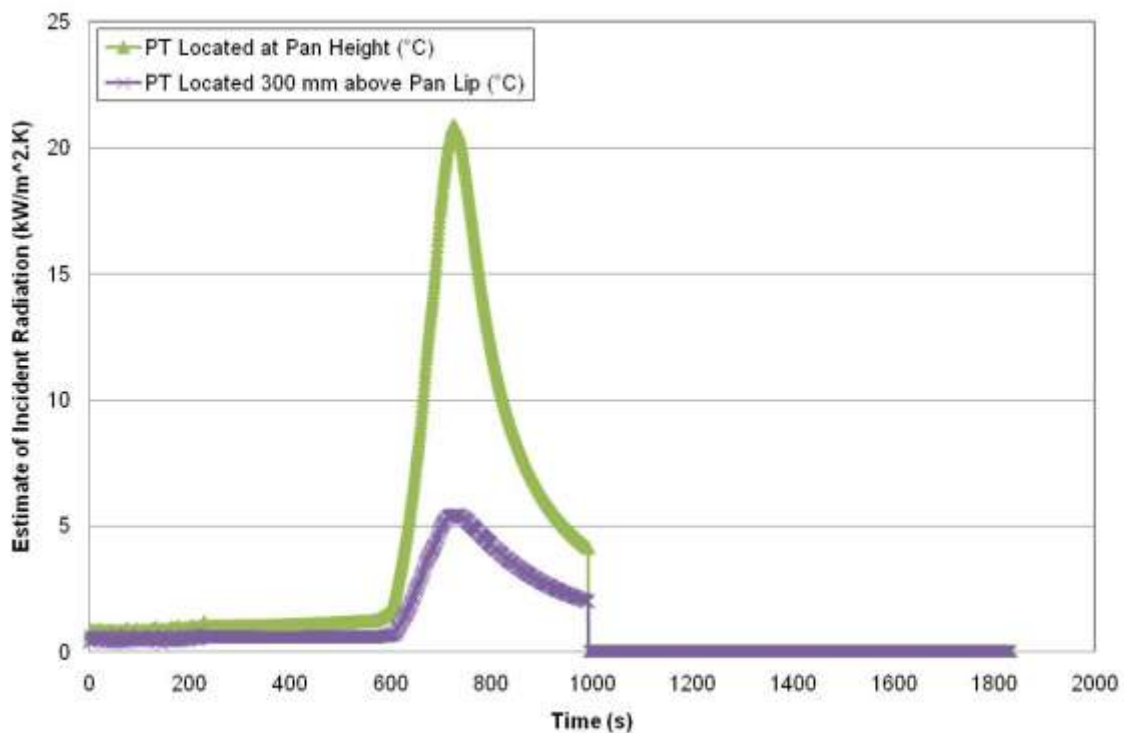


Figure 138: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 36.

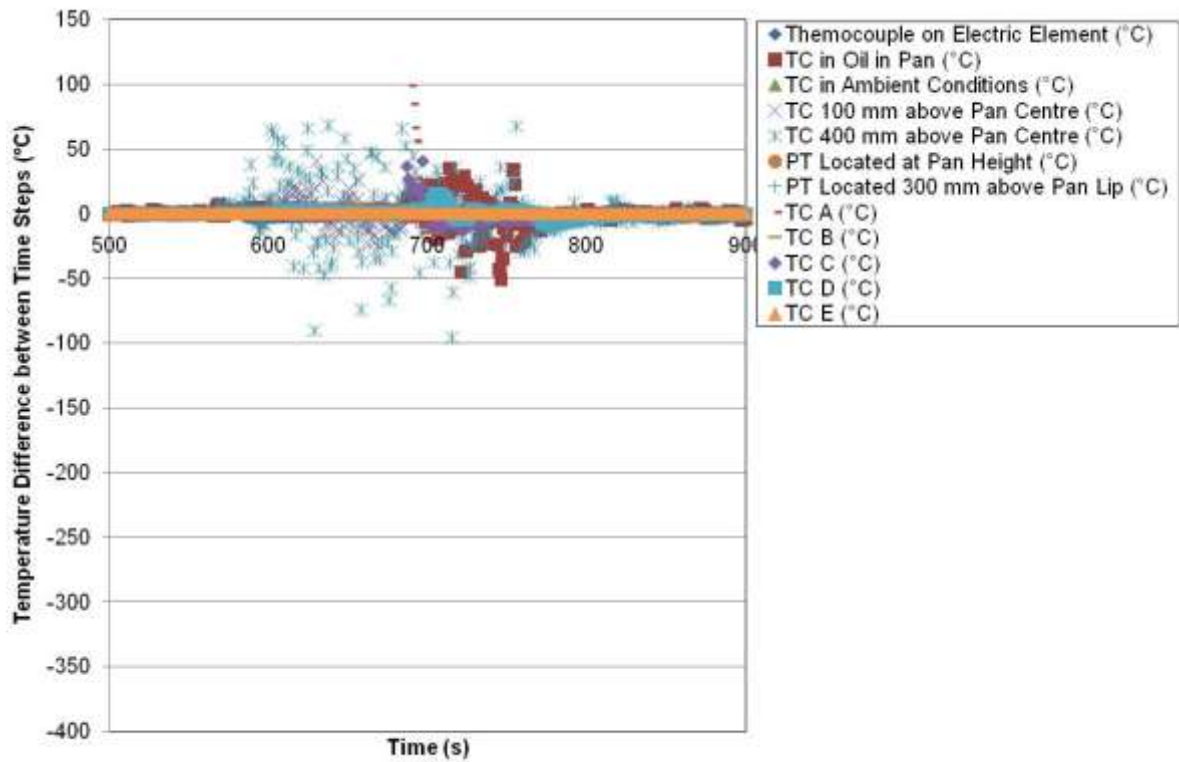


Figure 139: Differences of each of the variable temperatures to between sequential time steps for Test 36.

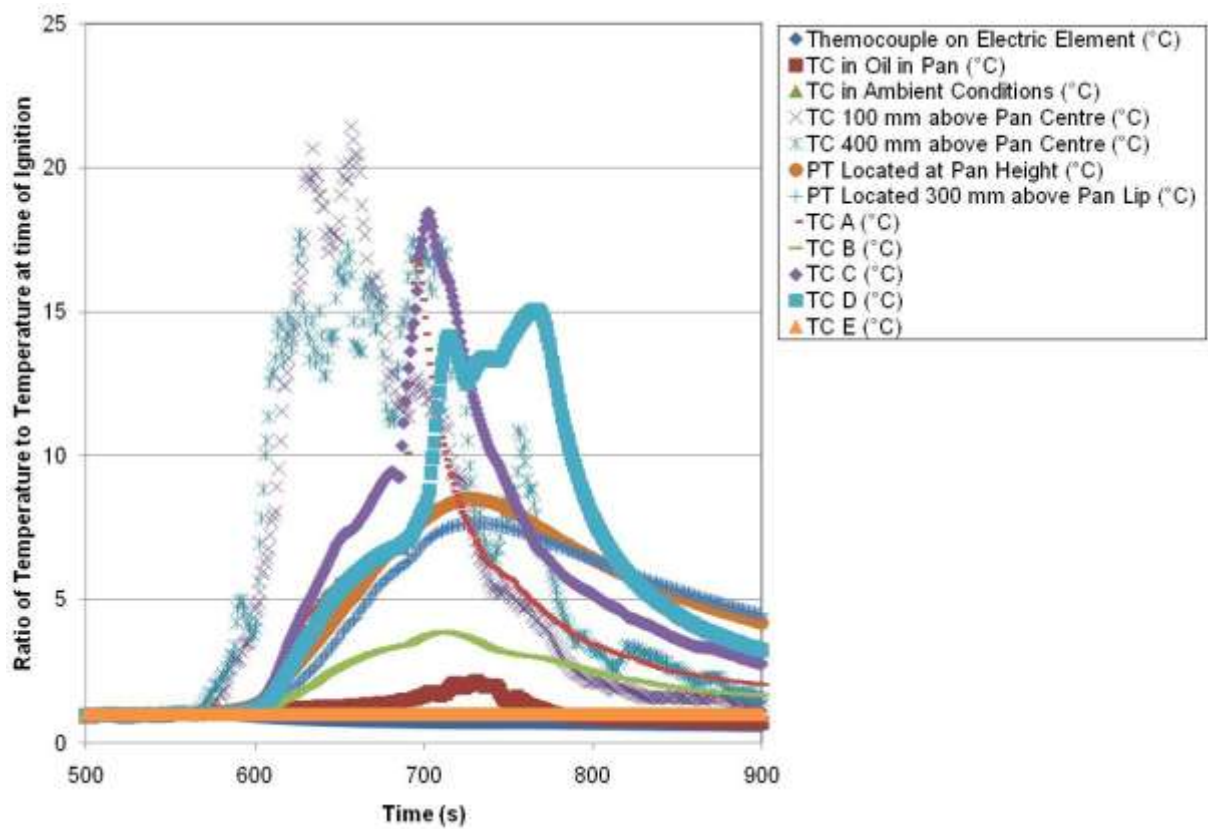


Figure 140: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 36.

### A.37 Test 37

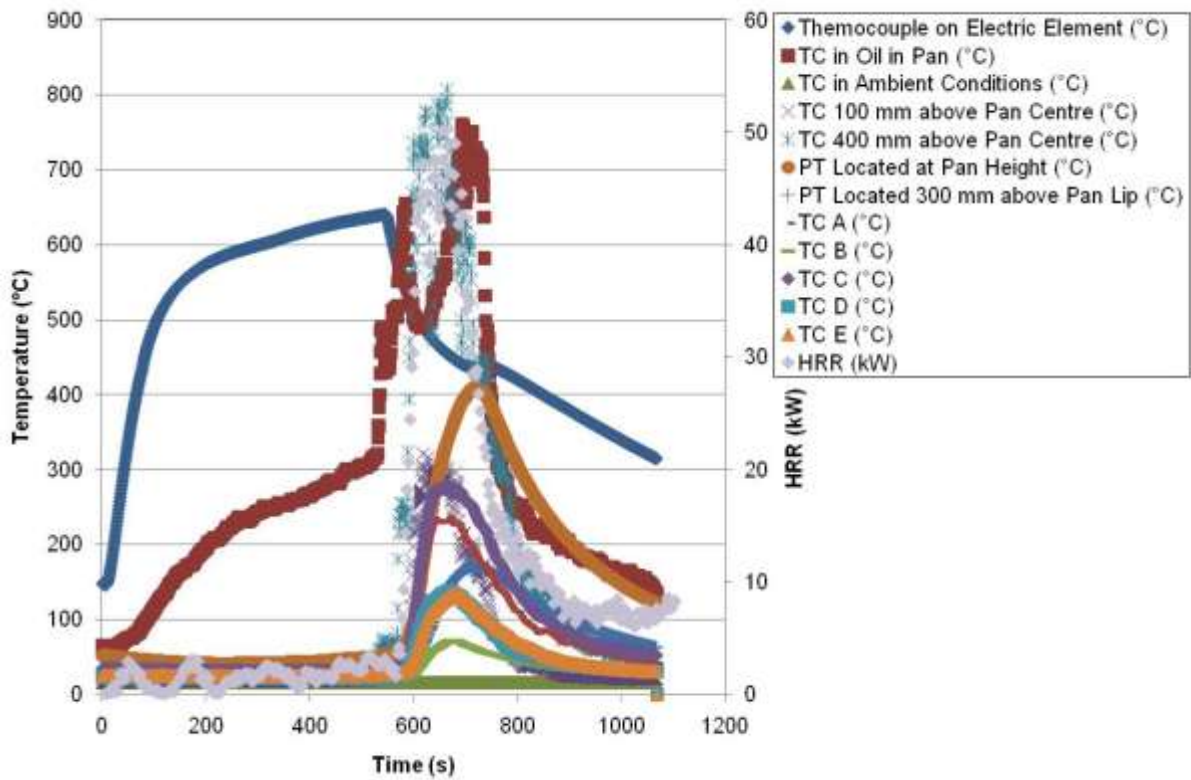


Figure 141: Measured temperatures of the thermocouples and plate thermometers for Test 37.

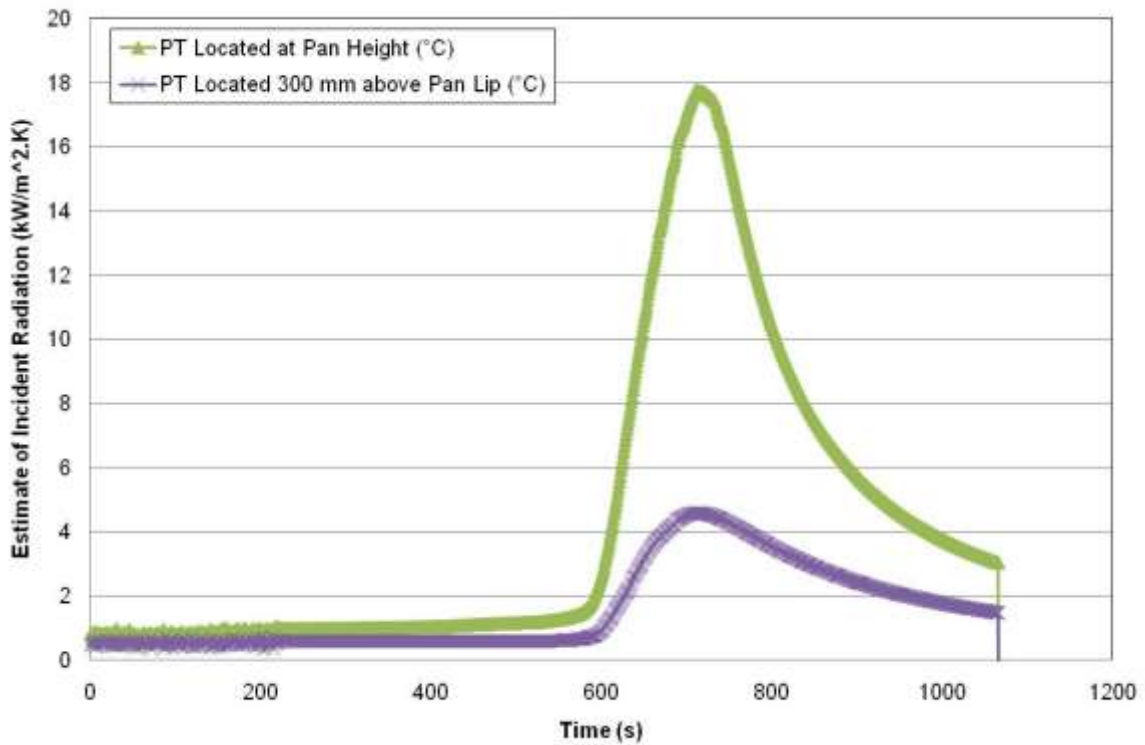


Figure 142: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 37.

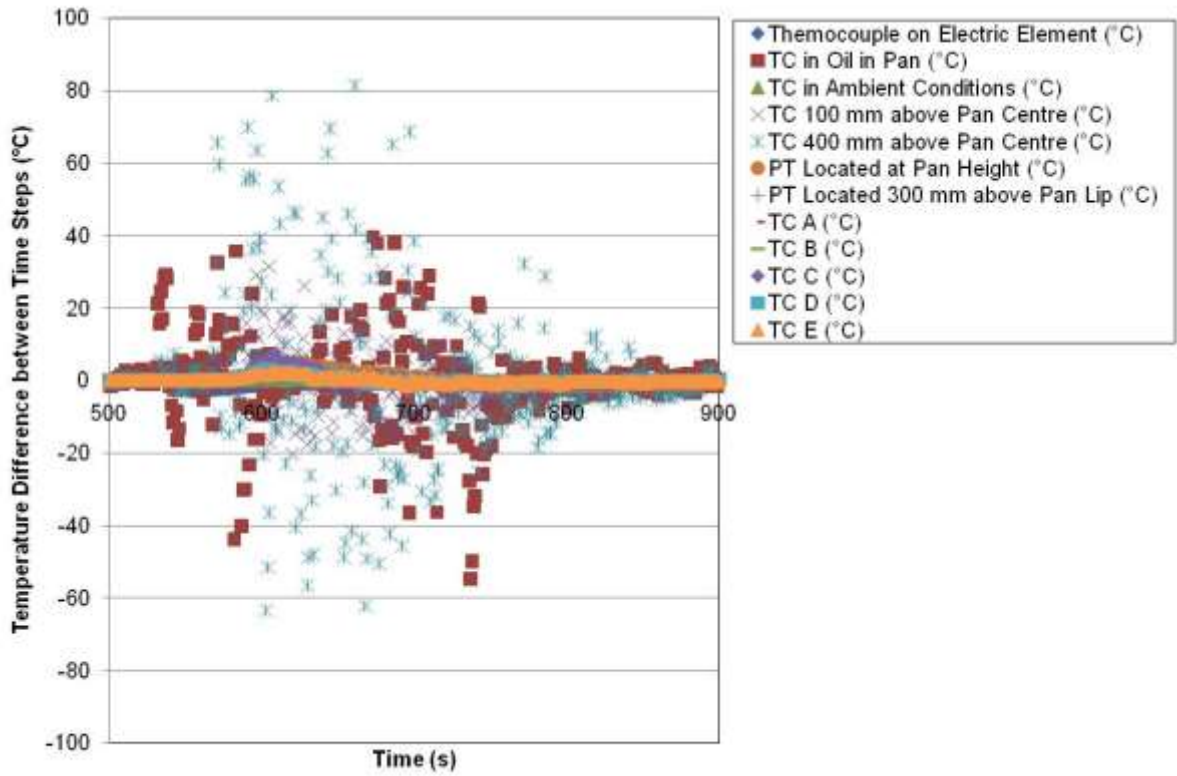


Figure 143: Differences of each of the variable temperatures to between sequential time steps for Test 37.

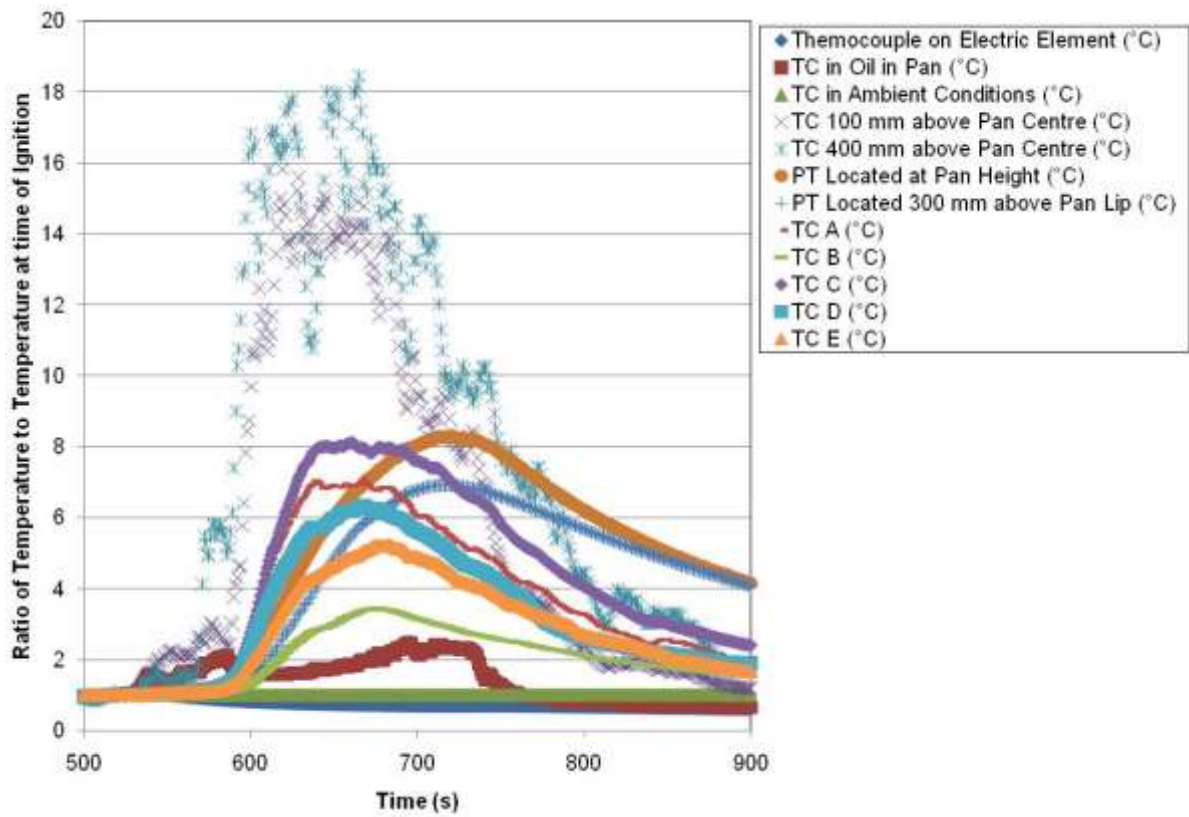


Figure 144: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 37.

## A.38 Test 38

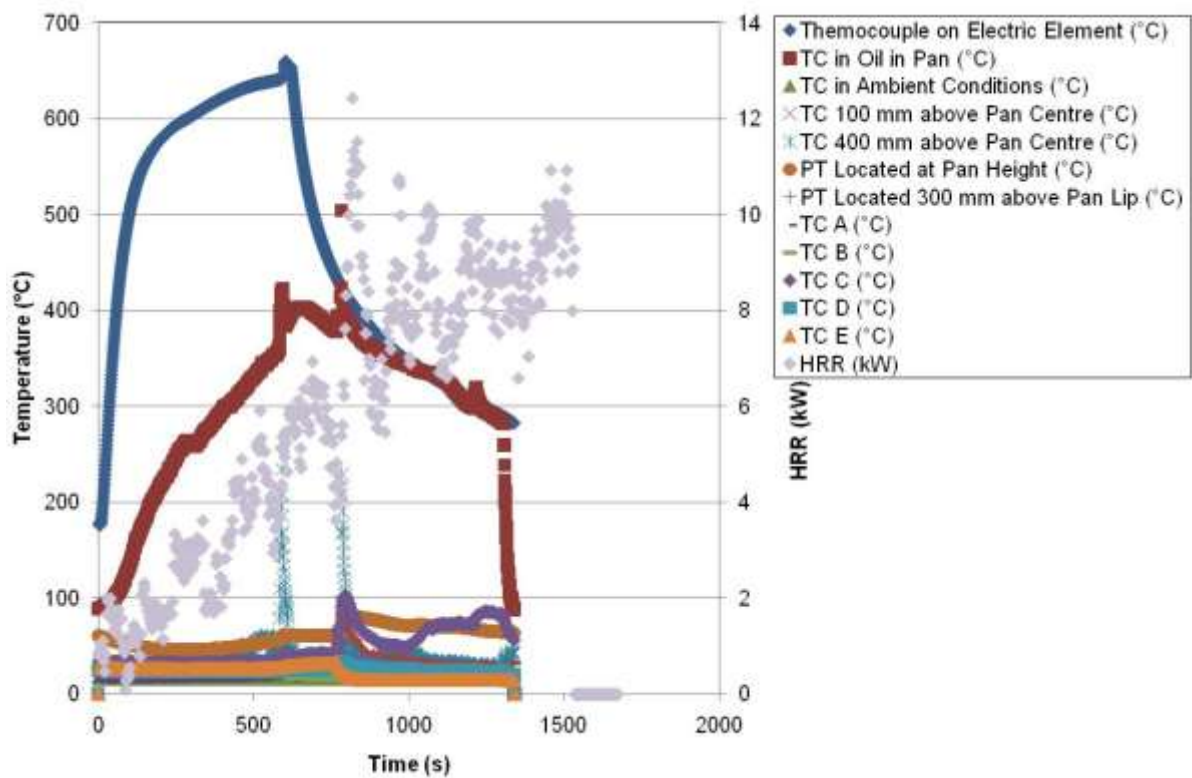


Figure 145: Measured temperatures of the thermocouples and plate thermometers for Test 38.

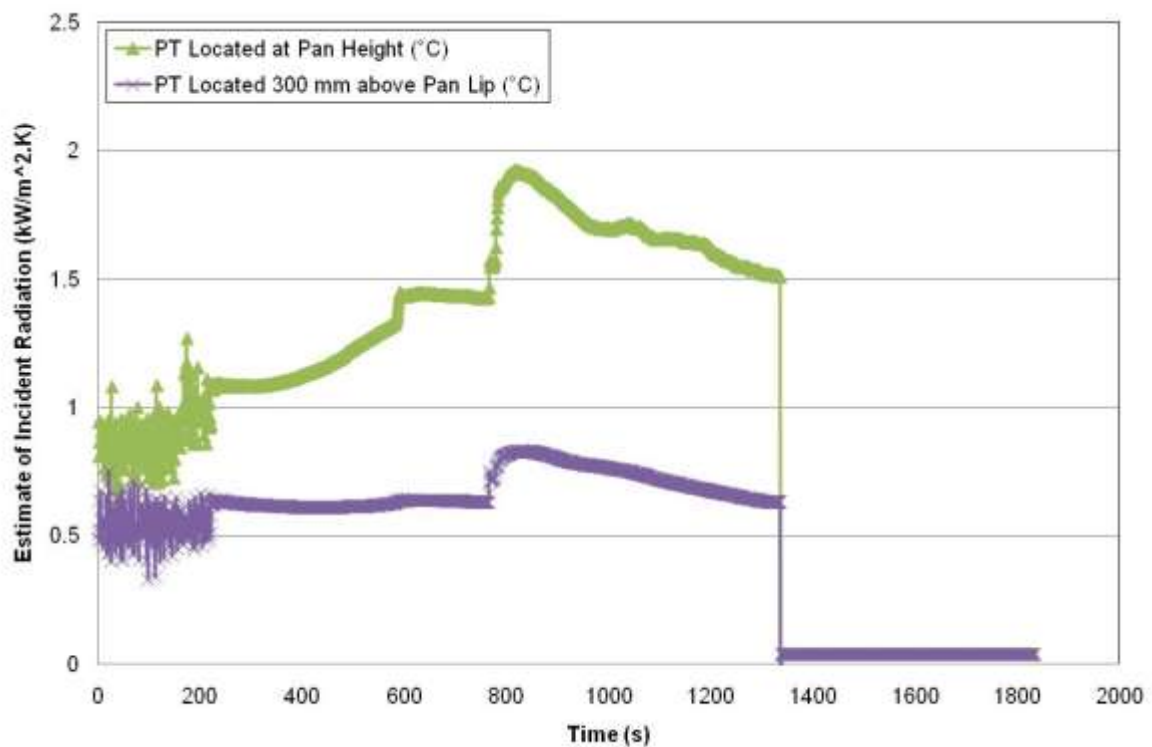


Figure 146: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 38.

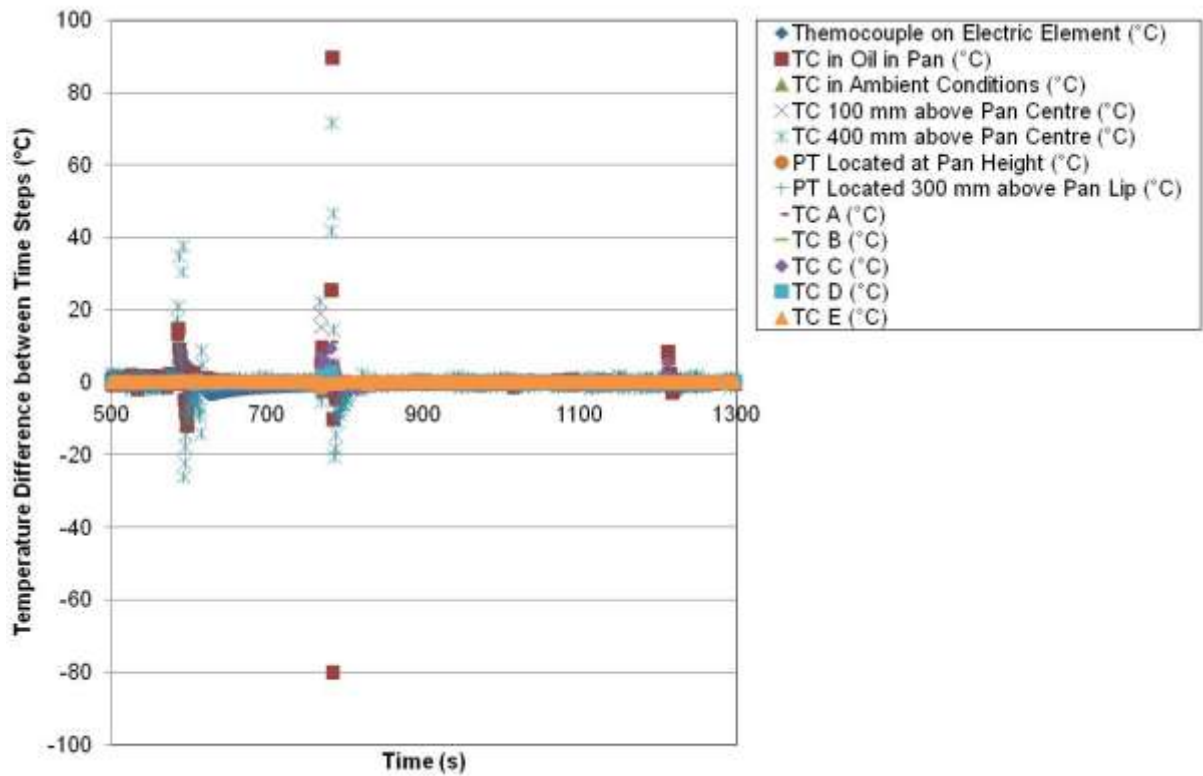


Figure 147: Differences of each of the variable temperatures to between sequential time steps for Test 38.

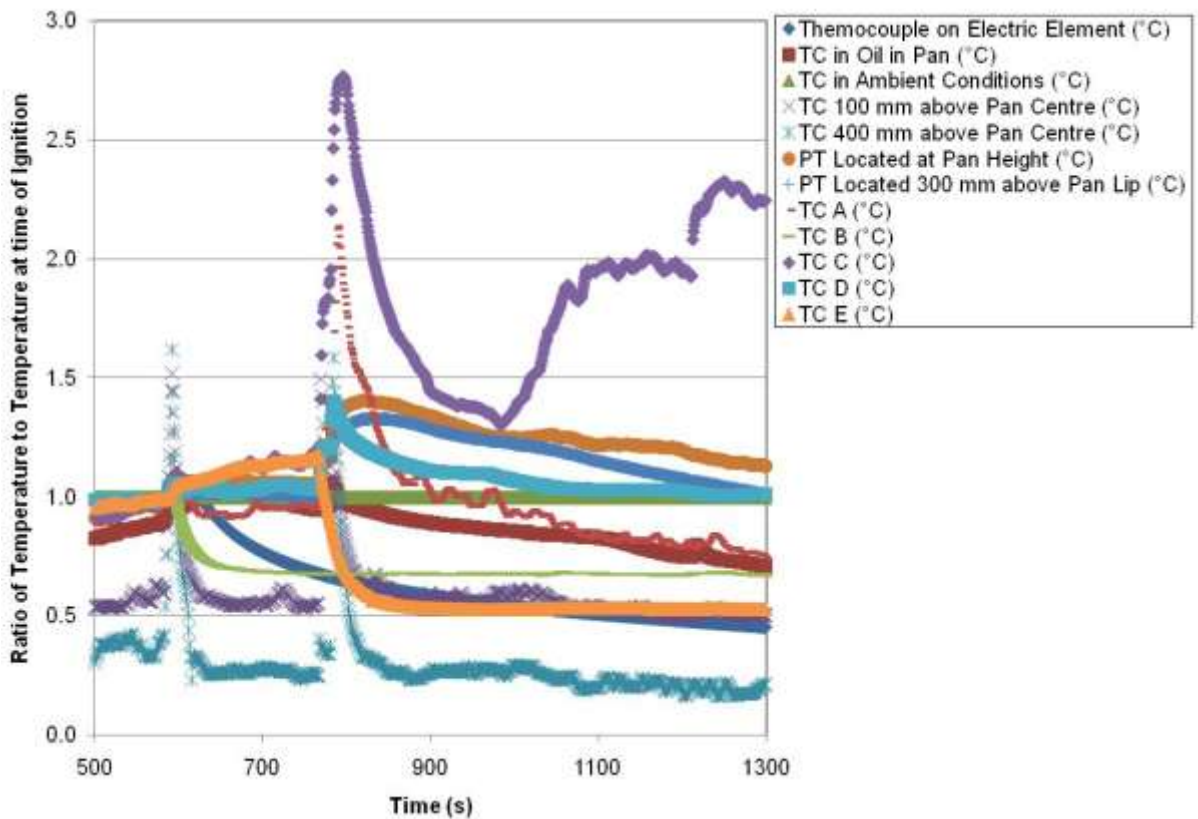


Figure 148: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 38.

## A.39 Test 39

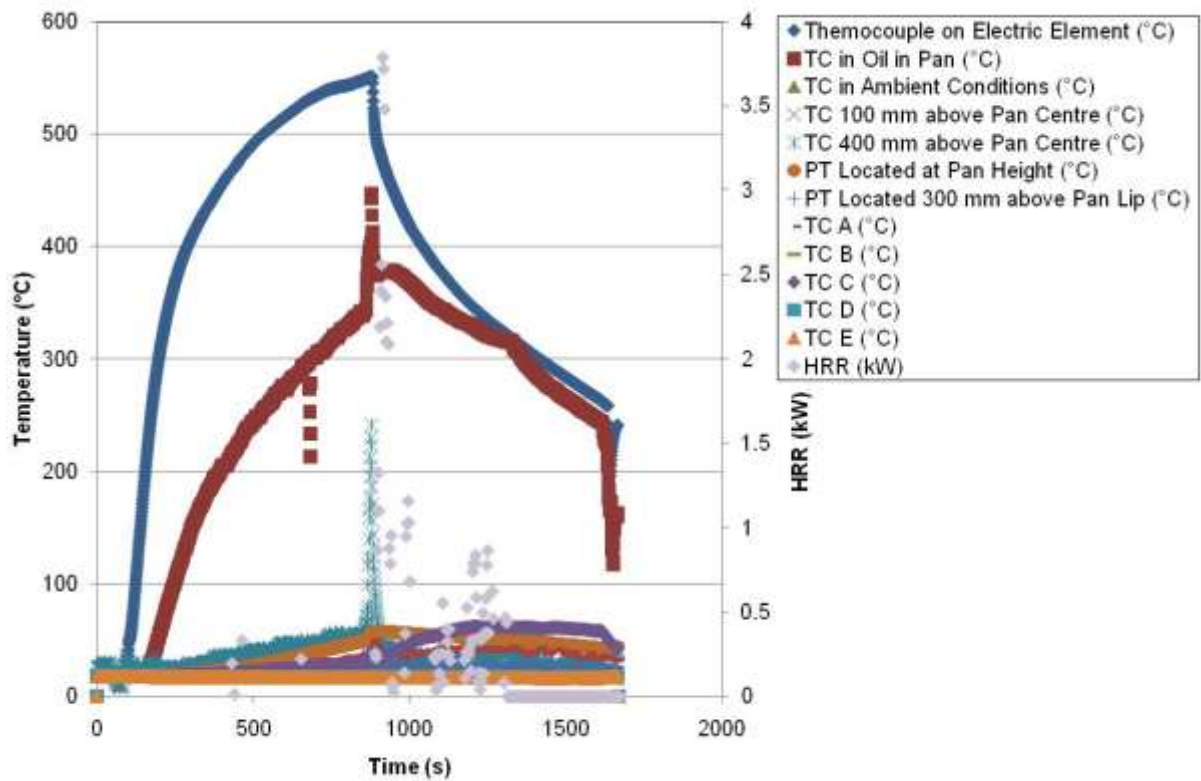


Figure 149: Measured temperatures of the thermocouples and plate thermometers for Test 39.

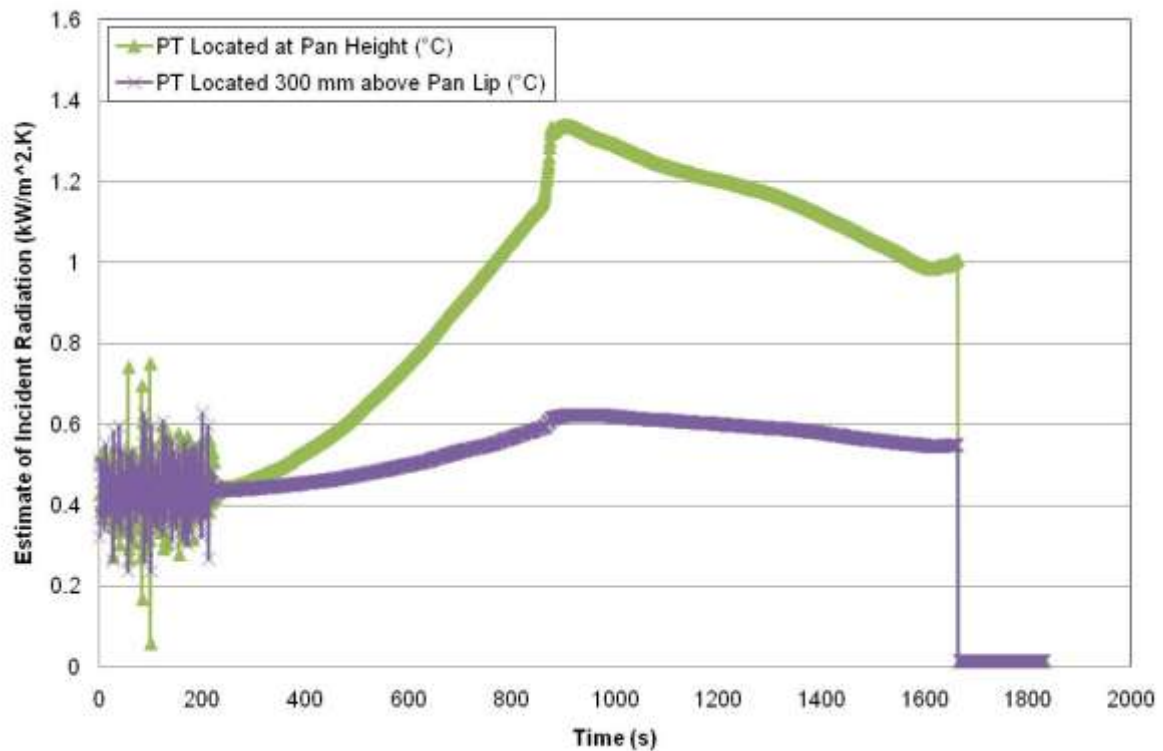


Figure 150: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 39.

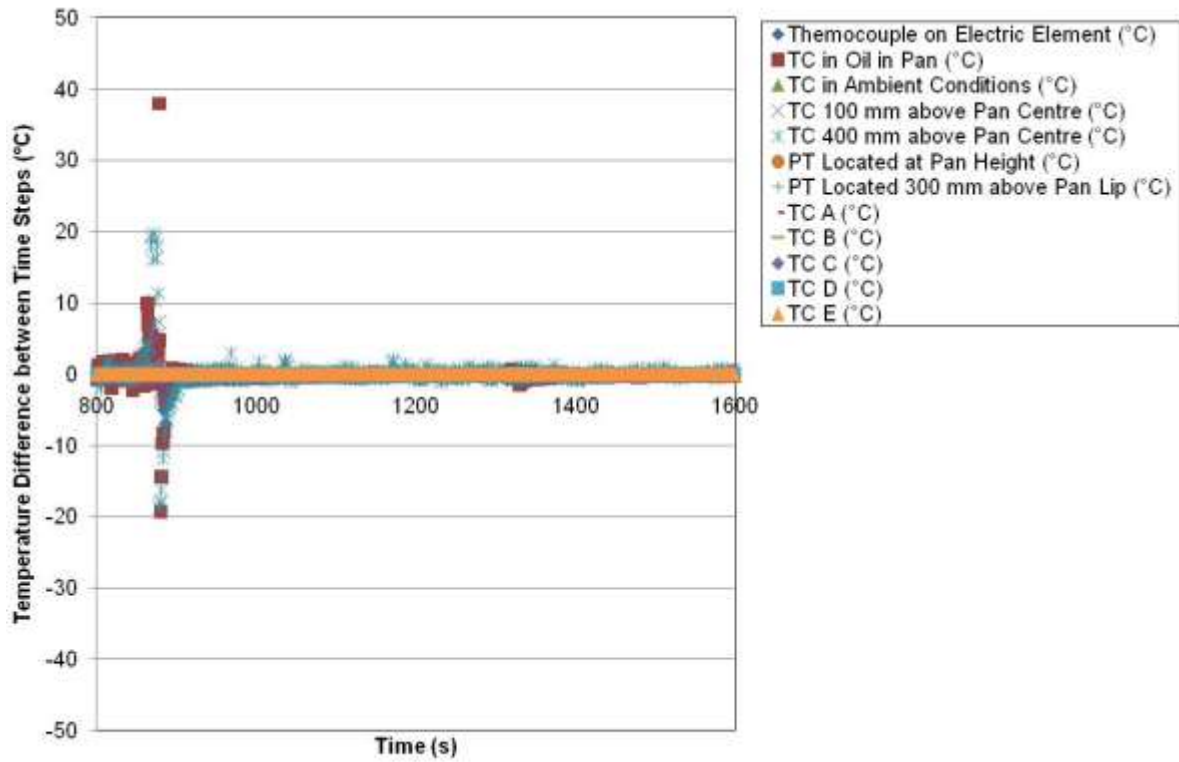


Figure 151: Differences of each of the variable temperatures to between sequential time steps for Test 39.

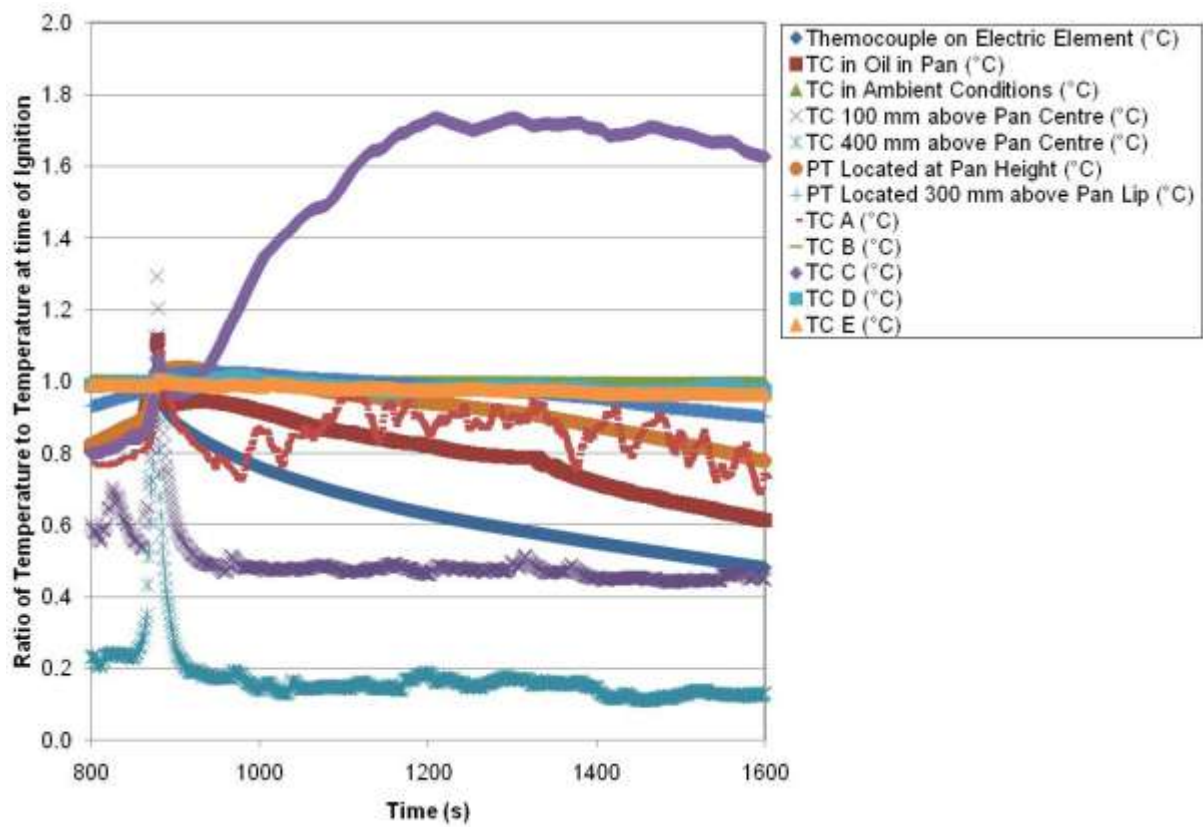


Figure 152: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 39.



## A.40 Test 40

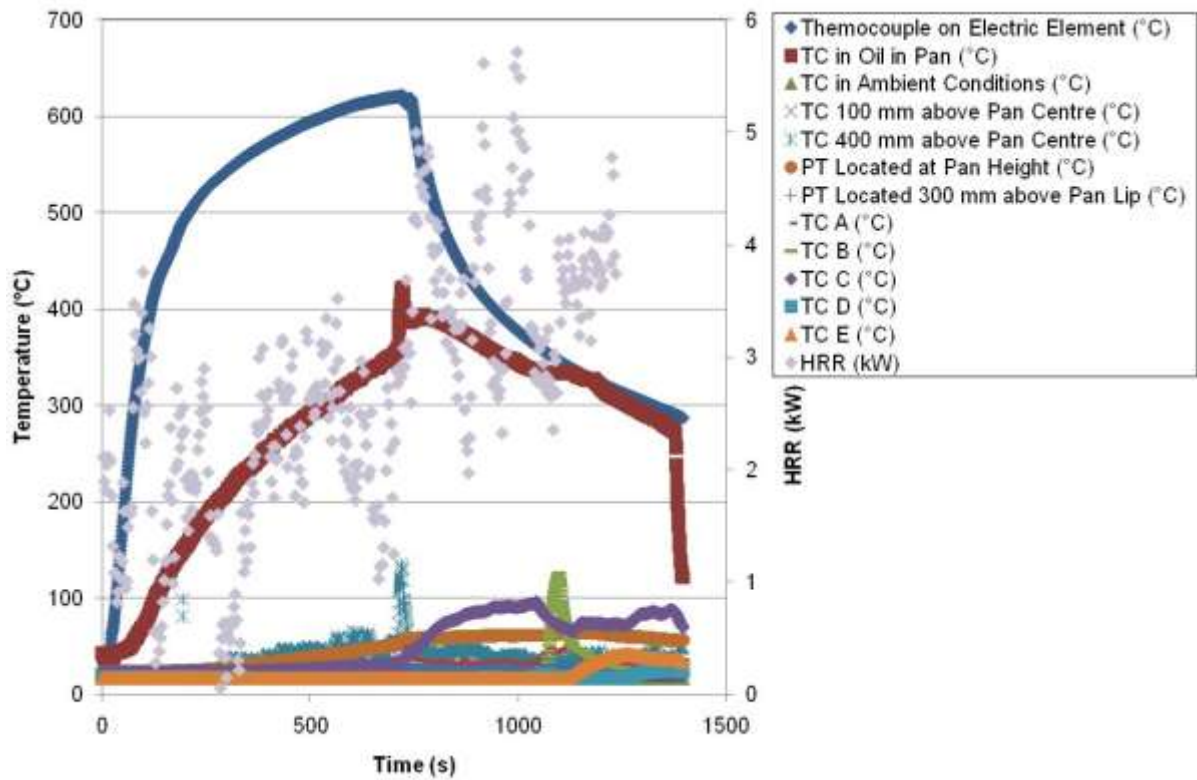


Figure 153: Measured temperatures of the thermocouples and plate thermometers for Test 40.

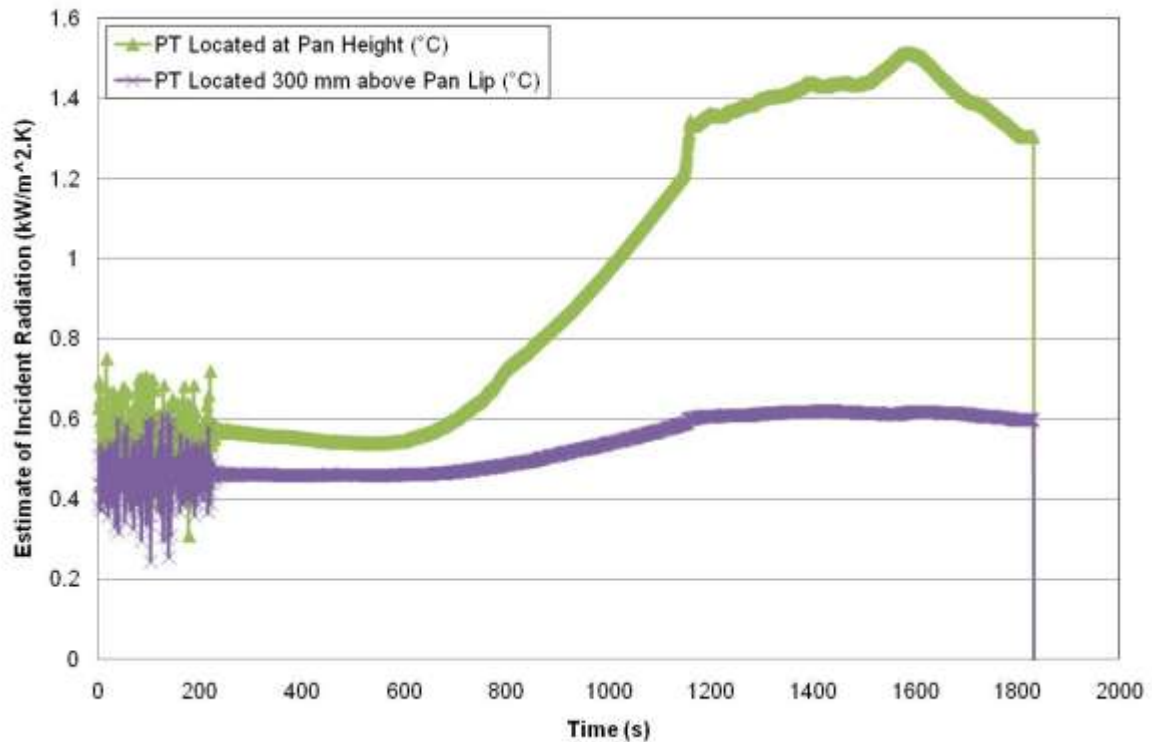


Figure 154: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 40.

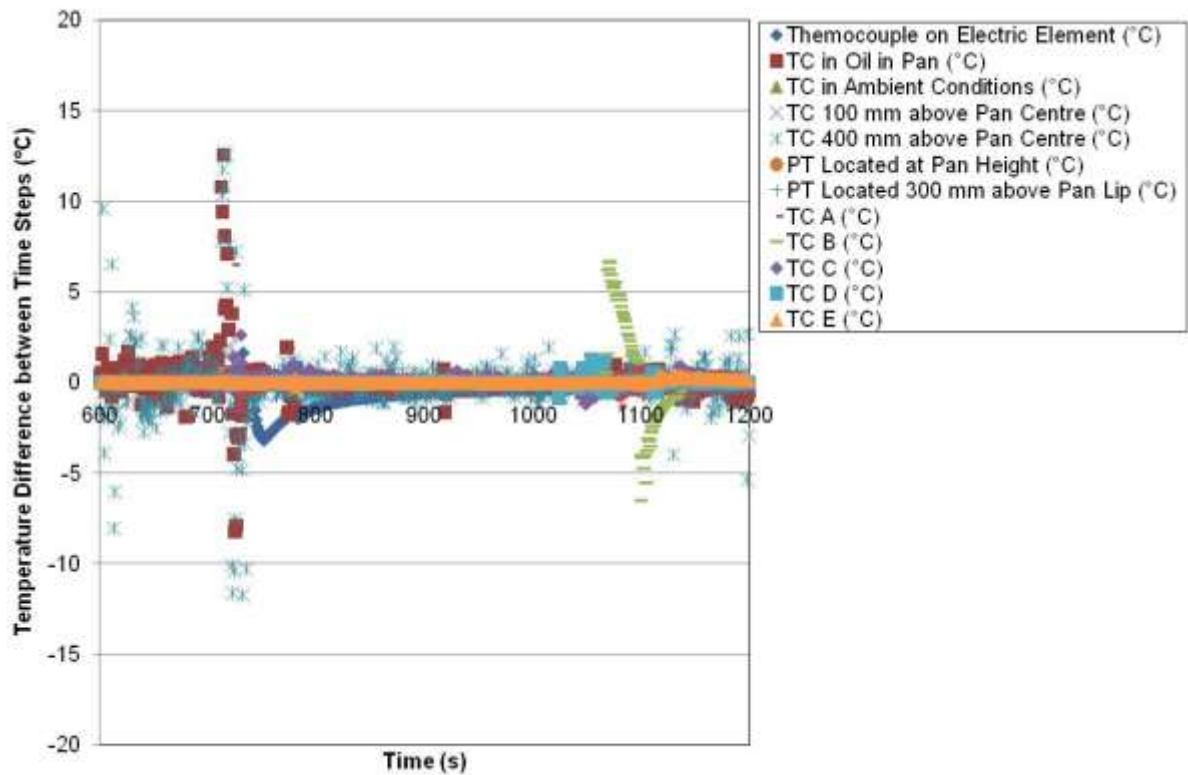


Figure 155: Differences of each of the variable temperatures to between sequential time steps for Test 40.

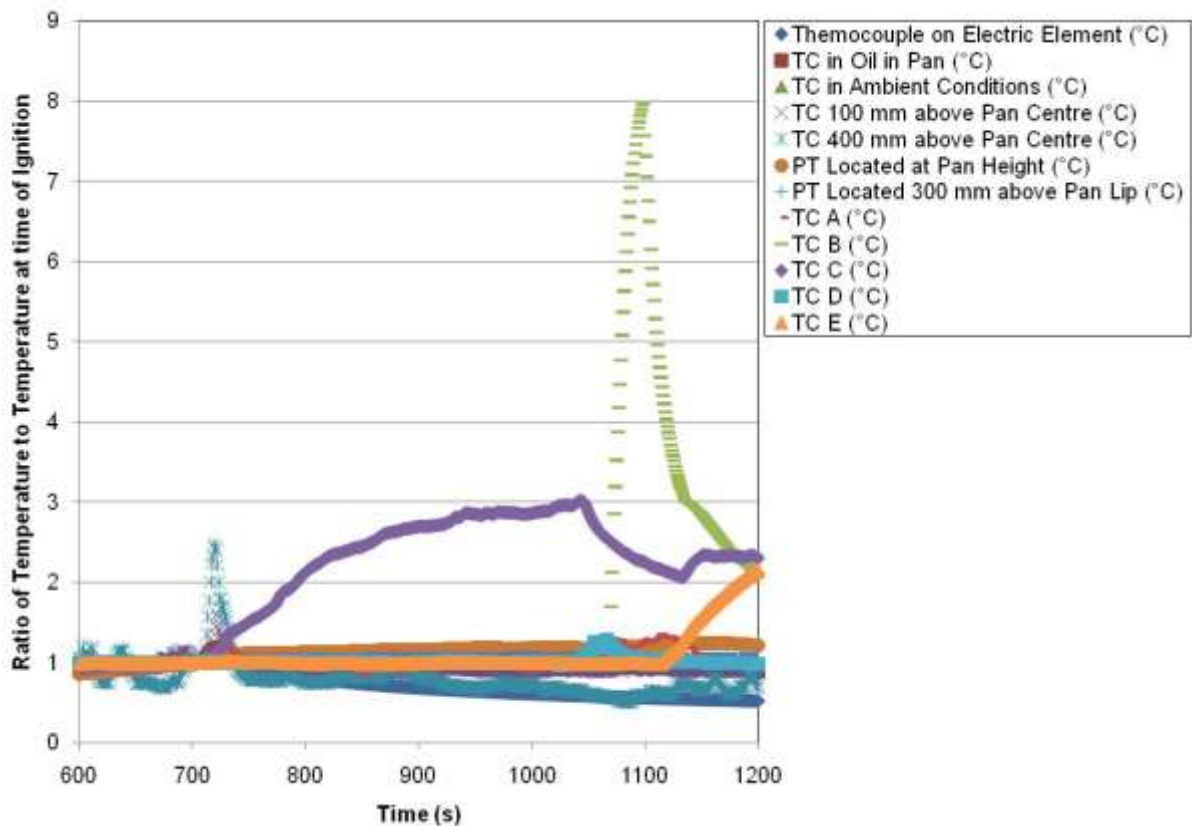


Figure 156: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 40.

## A.41 Test 41

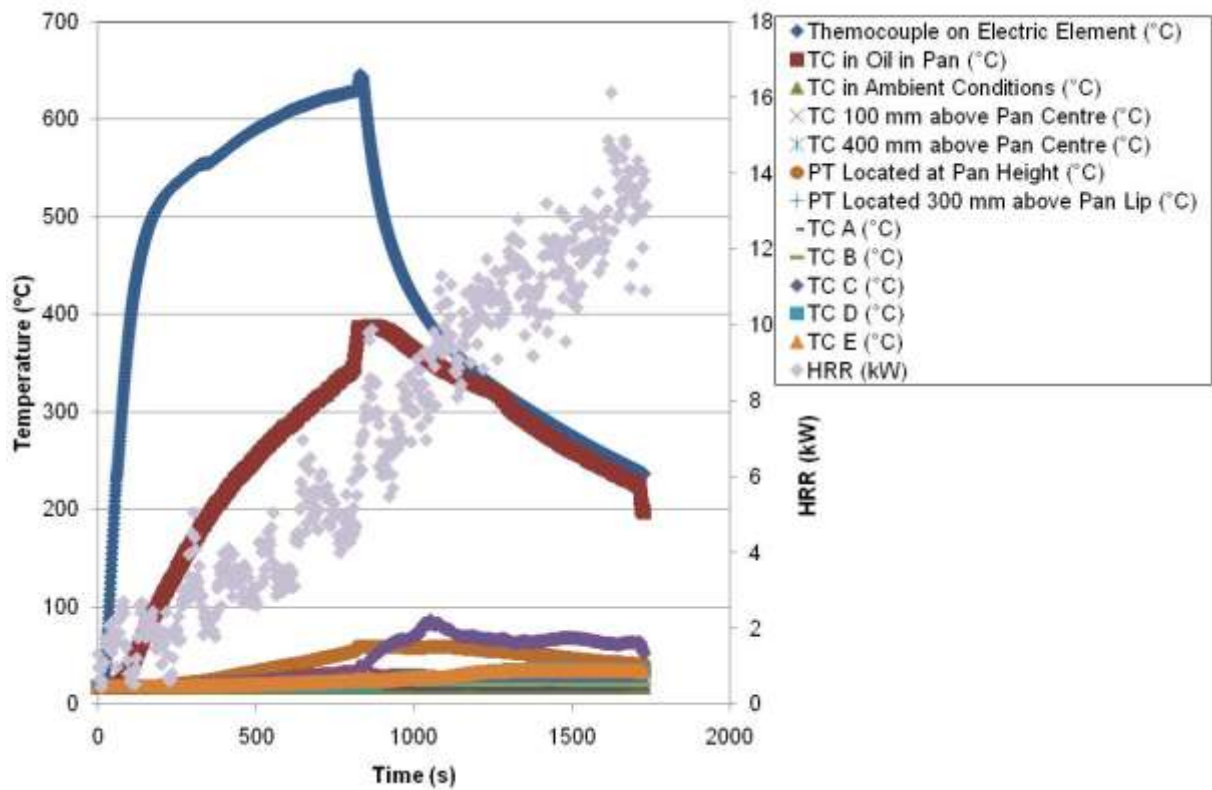


Figure 157: Measured temperatures of the thermocouples and plate thermometers for Test 41.

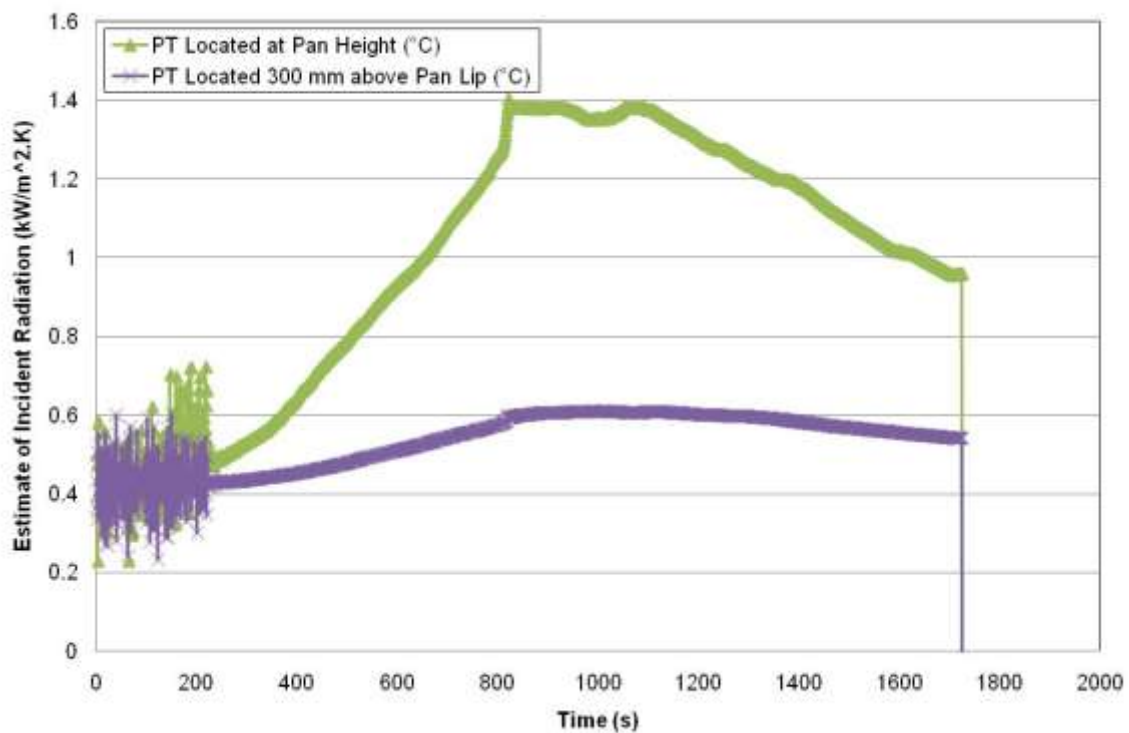


Figure 158: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 41.

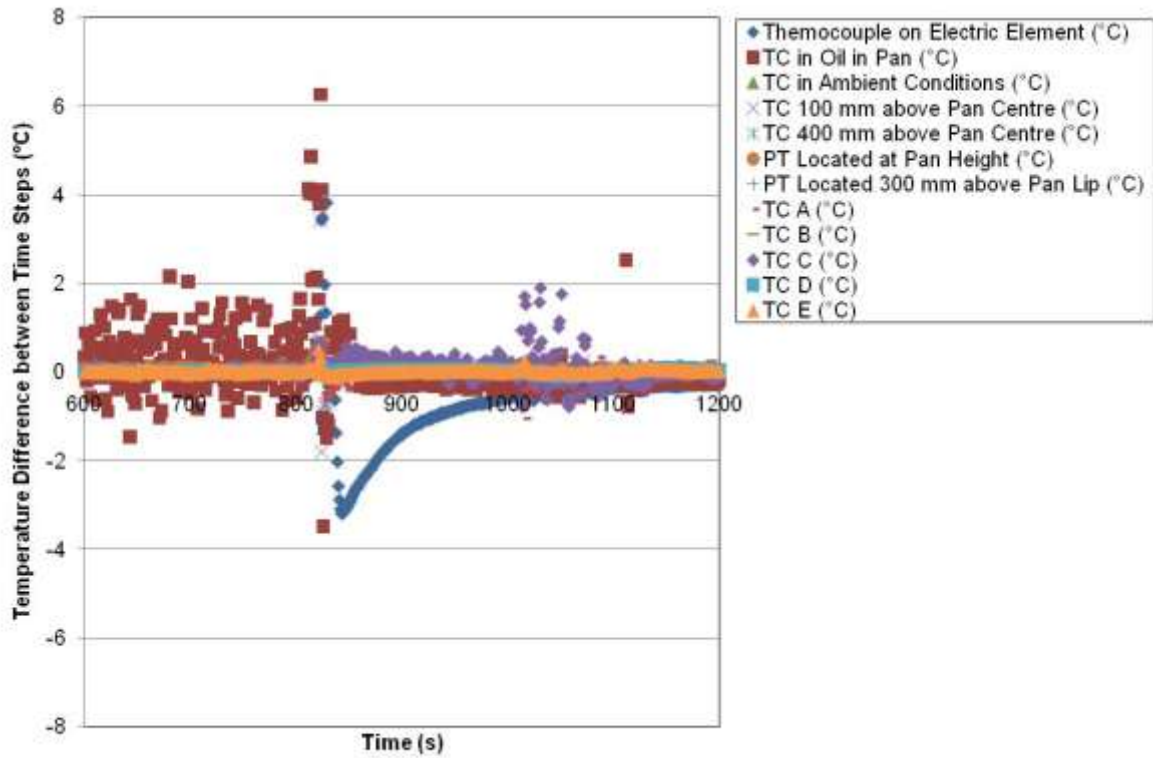


Figure 159: Differences of each of the variable temperatures to between sequential time steps for Test 41.

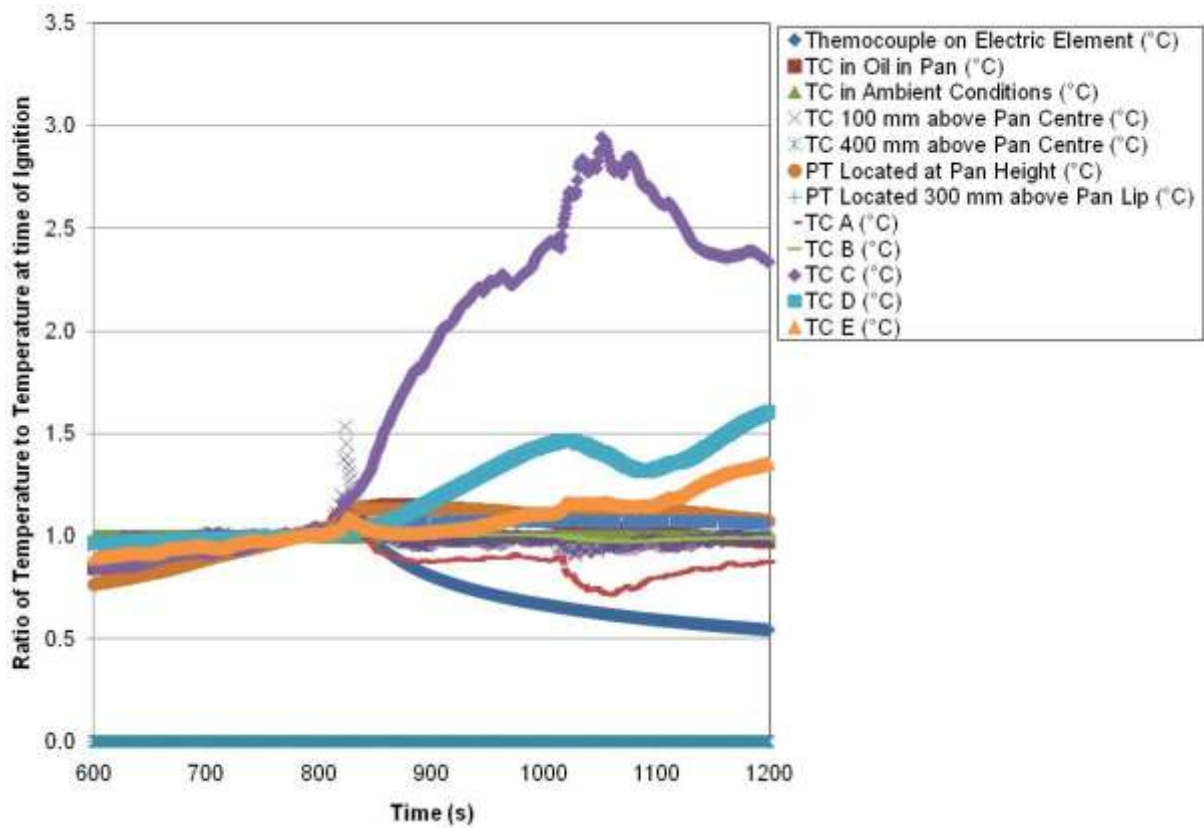


Figure 160: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 41.

## A.42 Test 42

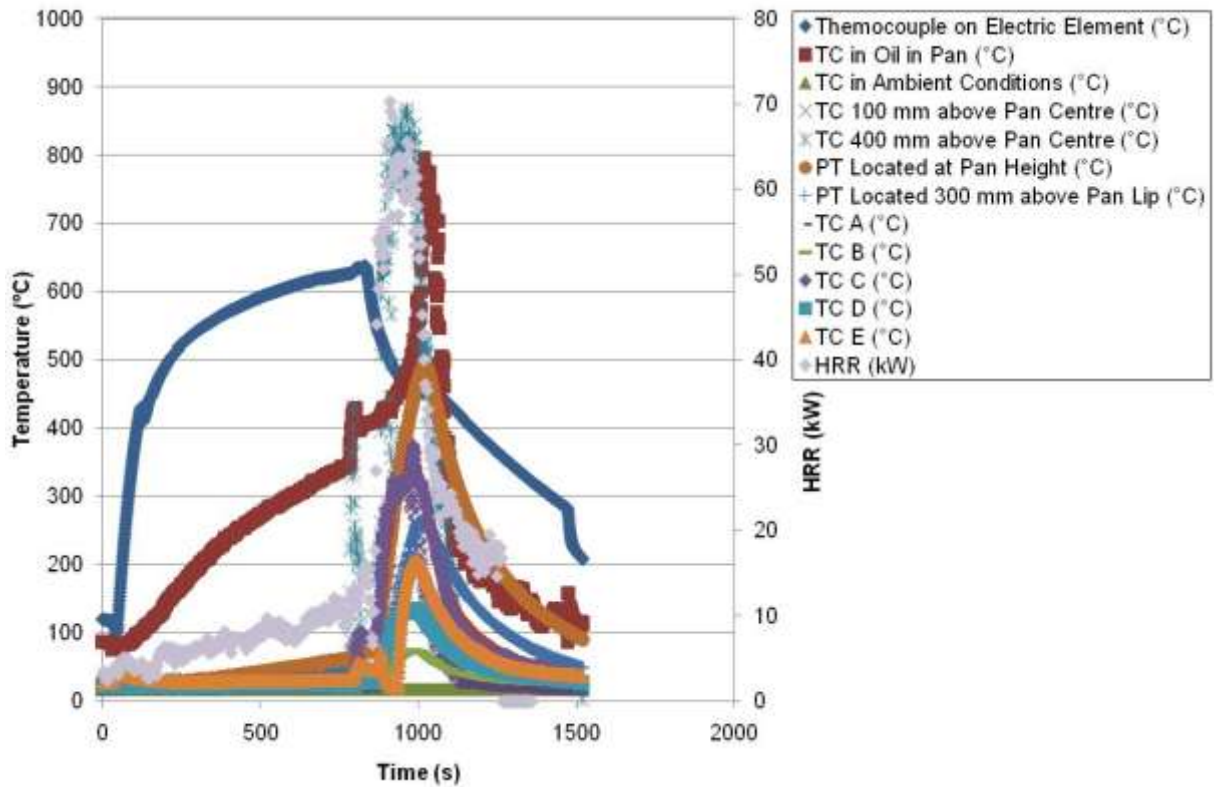


Figure 161: Measured temperatures of the thermocouples and plate thermometers for Test 42.

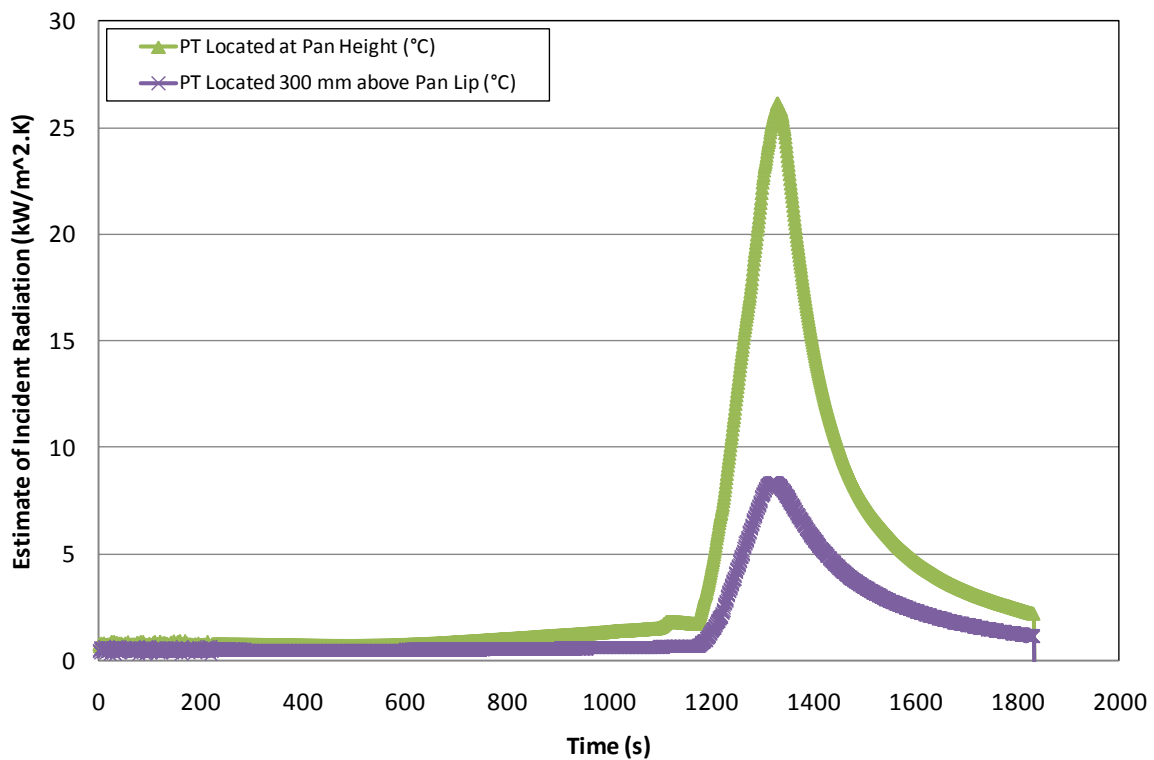


Figure 162: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 42.

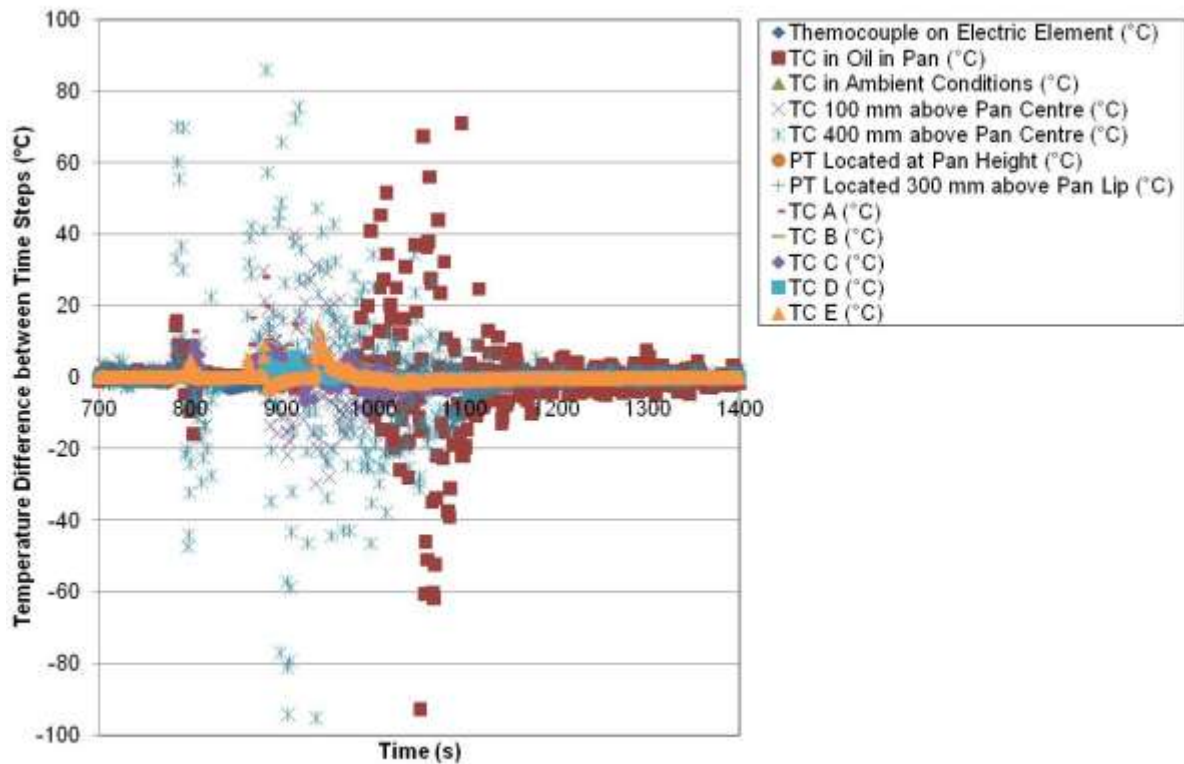


Figure 163: Differences of each of the variable temperatures to between sequential time steps for Test 42.

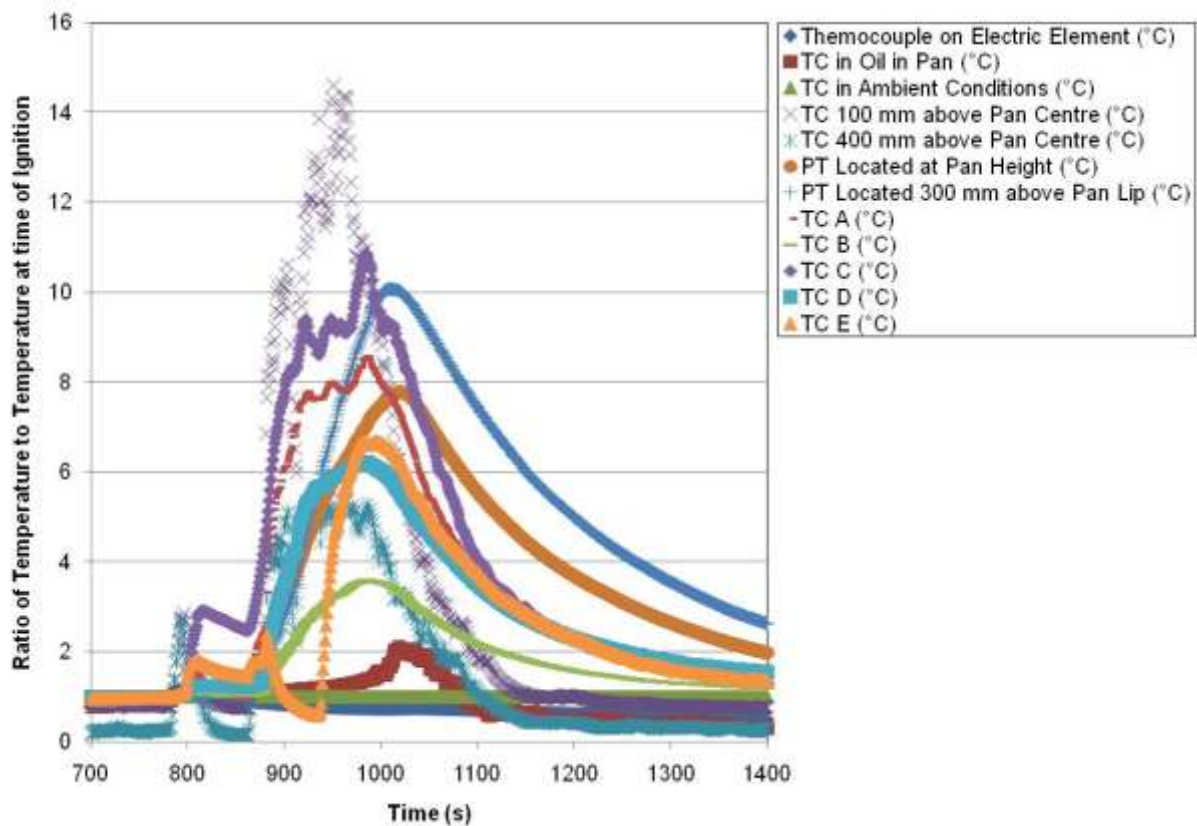


Figure 164: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 42.

## A.43 Test 43

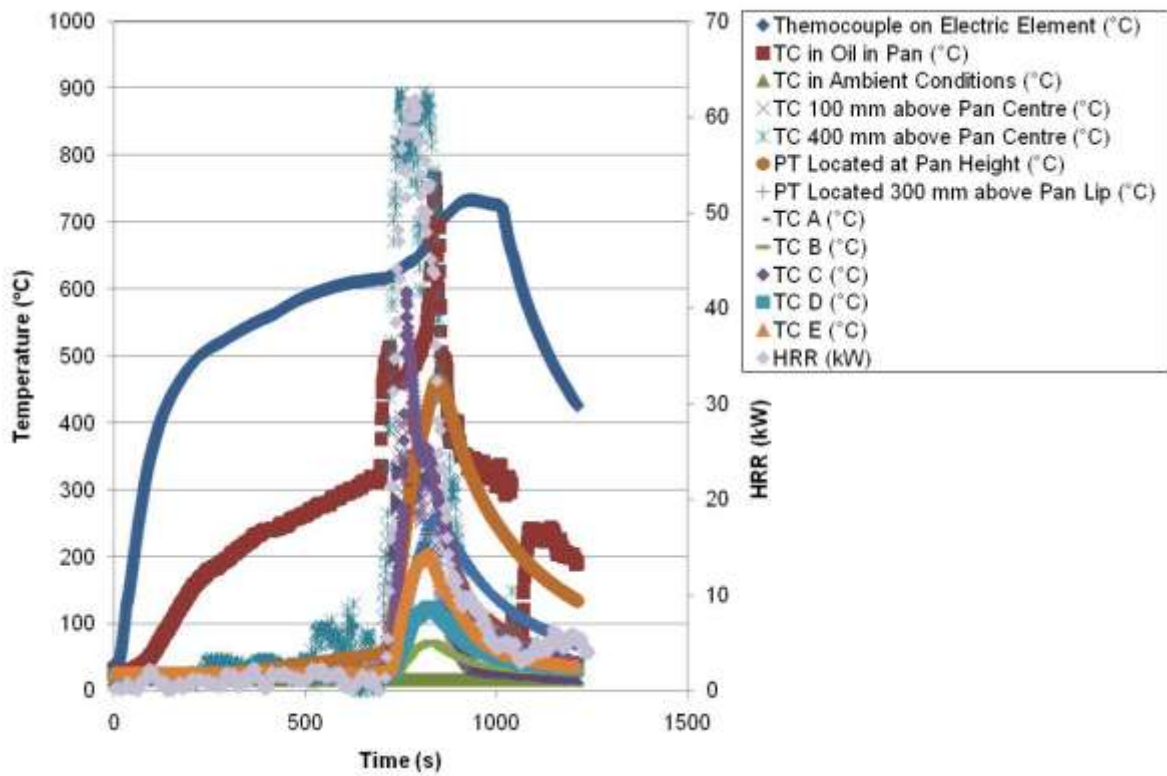


Figure 165: Measured temperatures of the thermocouples and plate thermometers for Test 43.

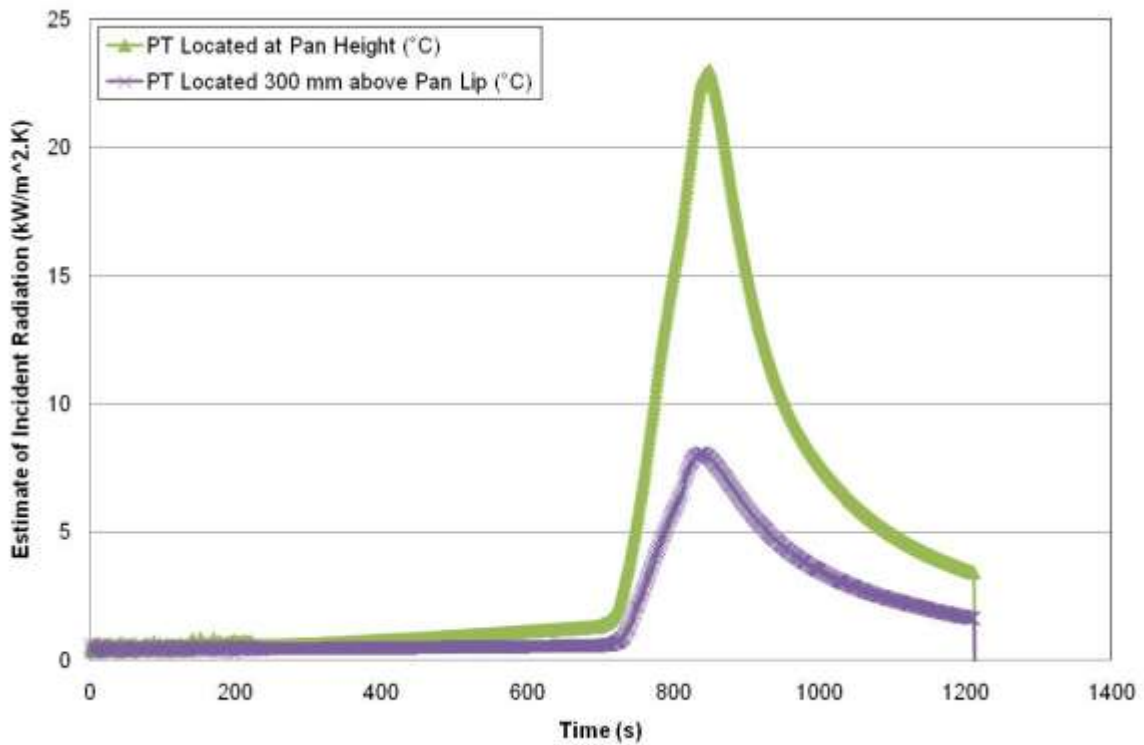


Figure 166: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 43.

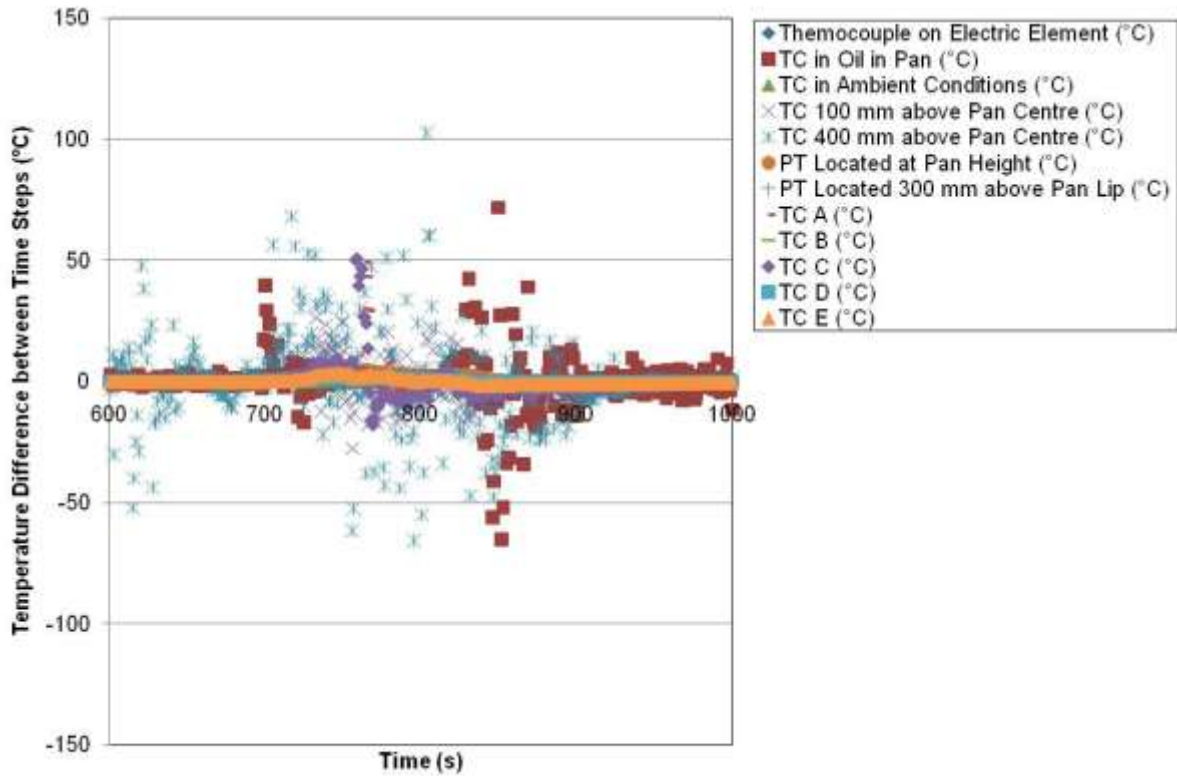


Figure 167: Differences of each of the variable temperatures to between sequential time steps for Test 43.

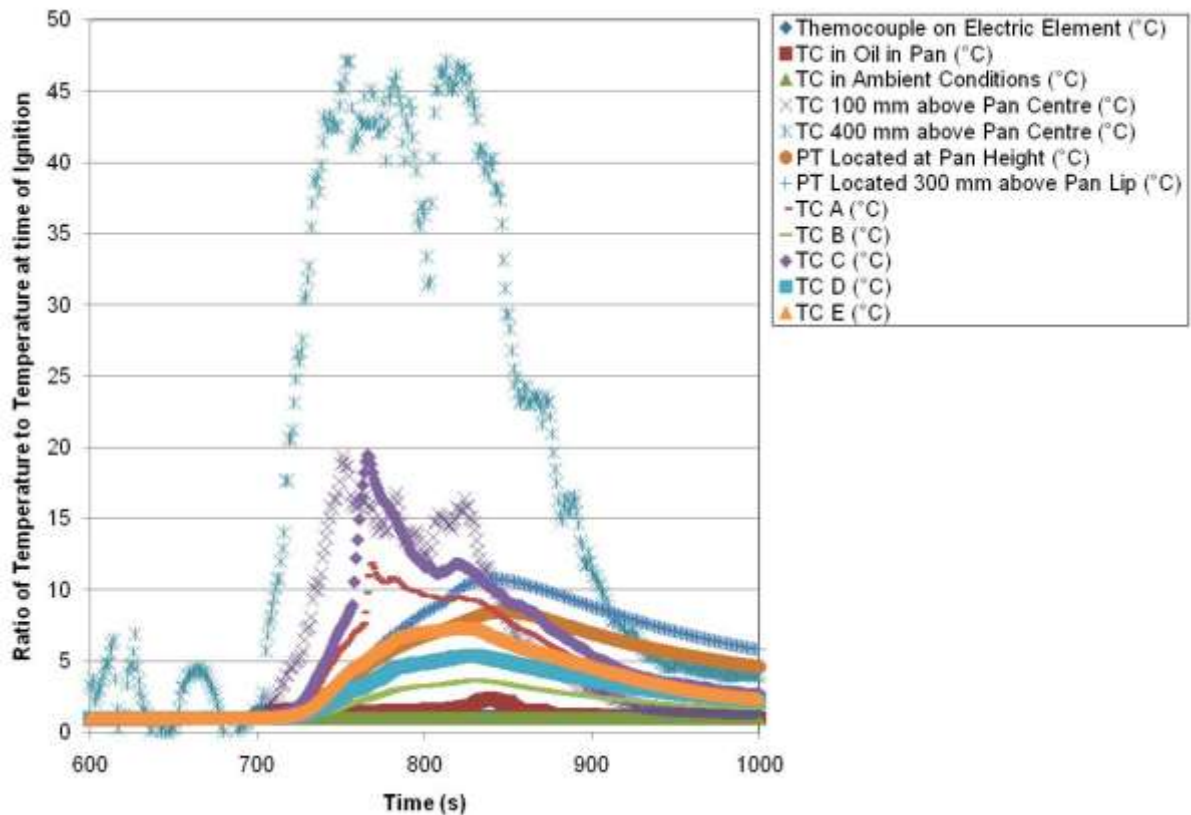


Figure 168: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 43.



## A.44 Test 44 – Aborted due to electrical contact failure

### A.45 Test 45

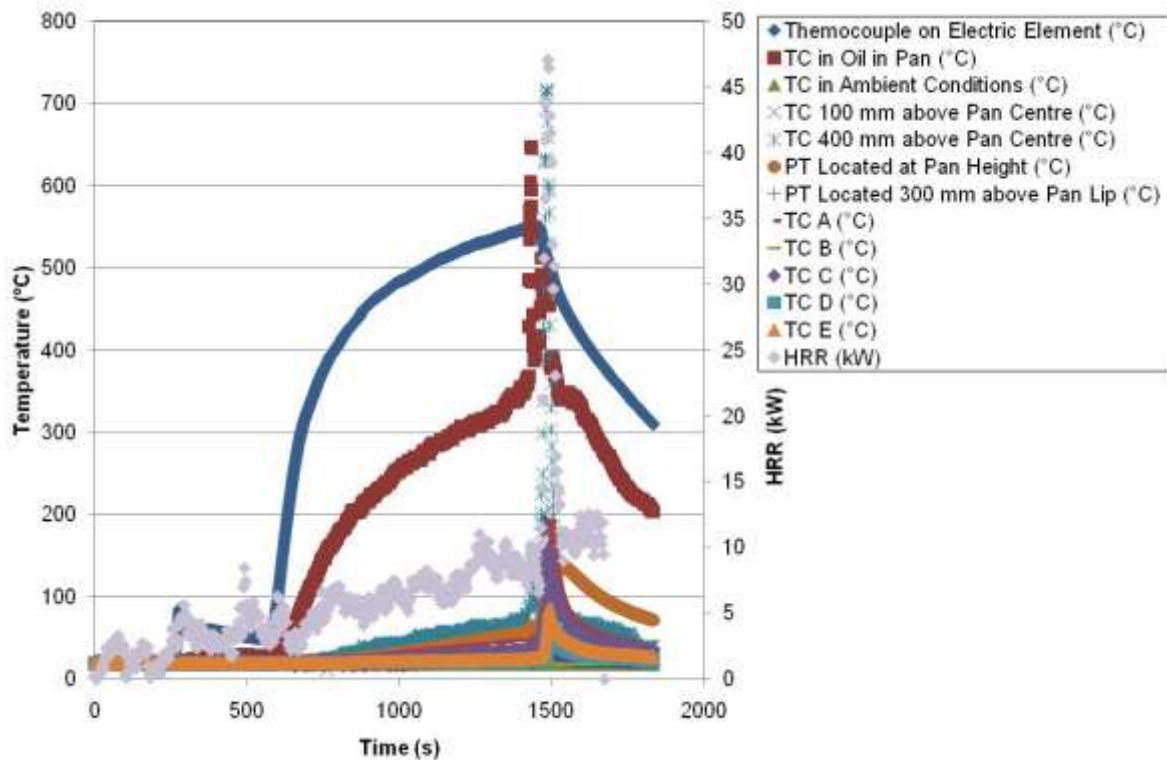


Figure 169: Measured temperatures of the thermocouples and plate thermometers for Test 44.

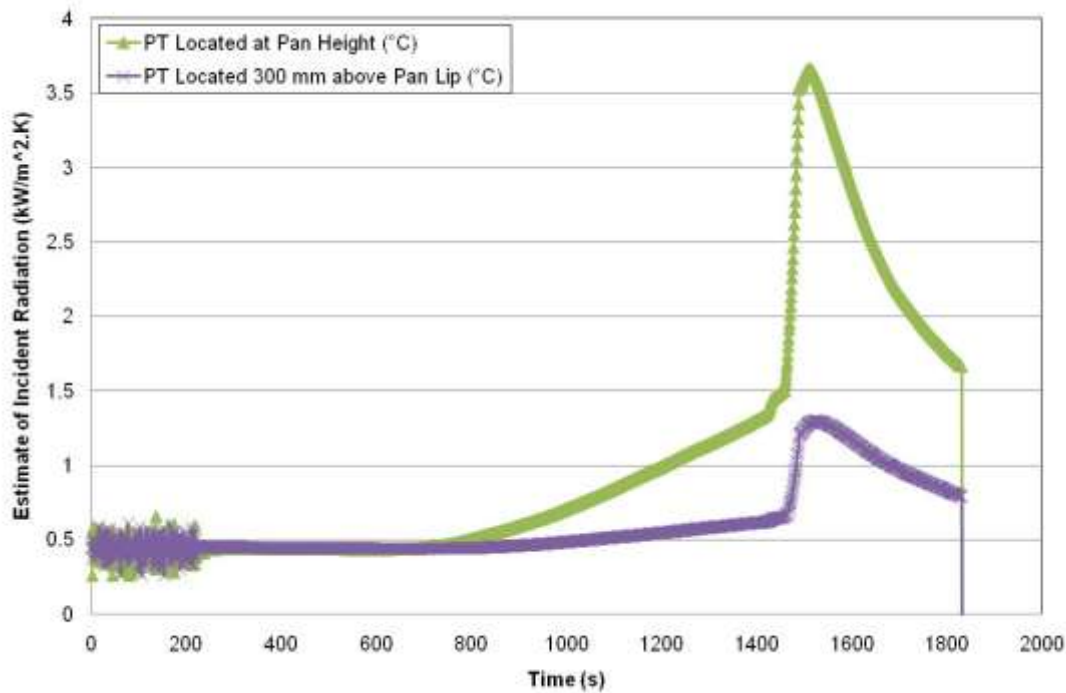


Figure 170: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 44.

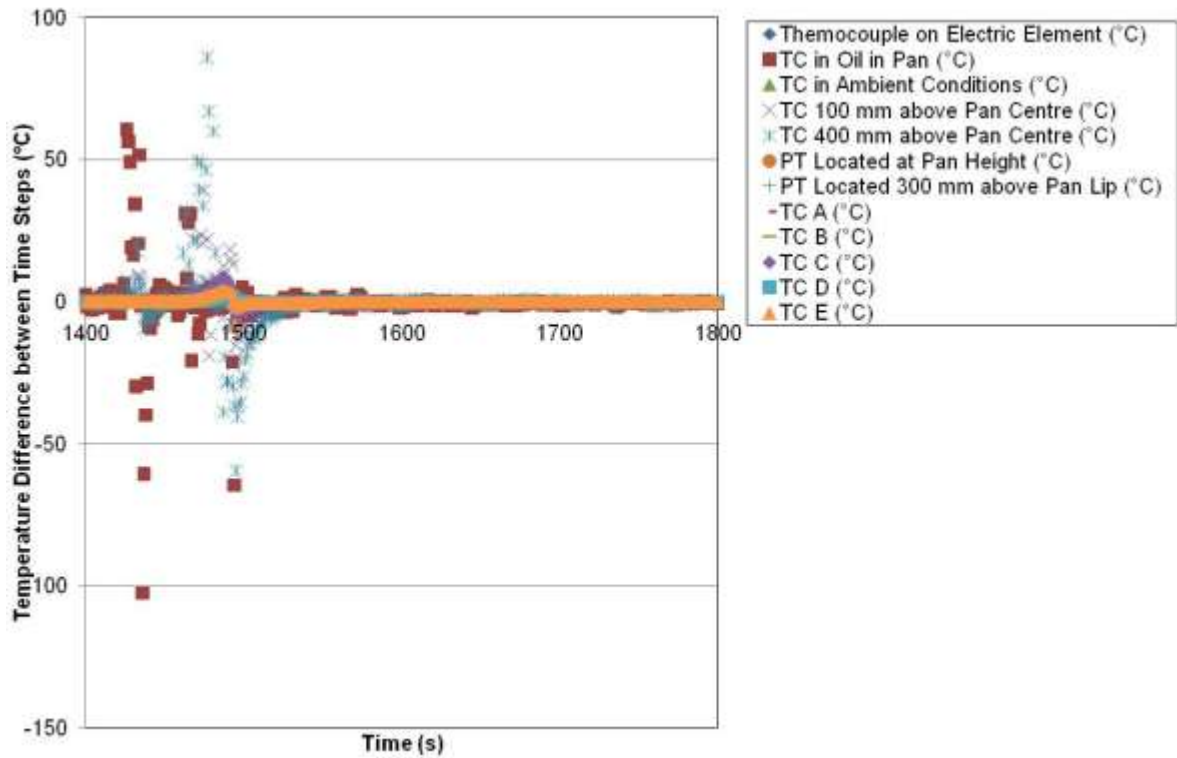


Figure 171: Differences of each of the variable temperatures to between sequential time steps for Test 44.

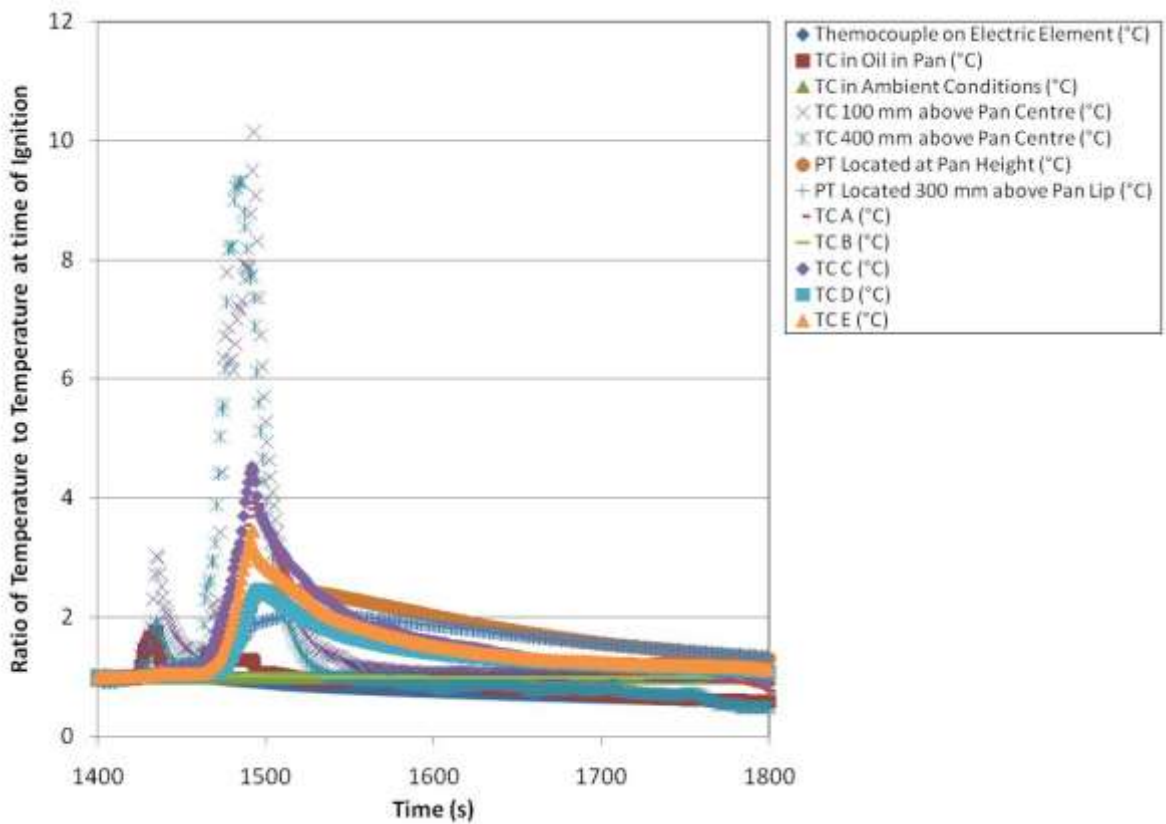


Figure 172: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 44.

## A.46 Test 46 – Aborted due to electrical contact failure

### A.47 Test 47

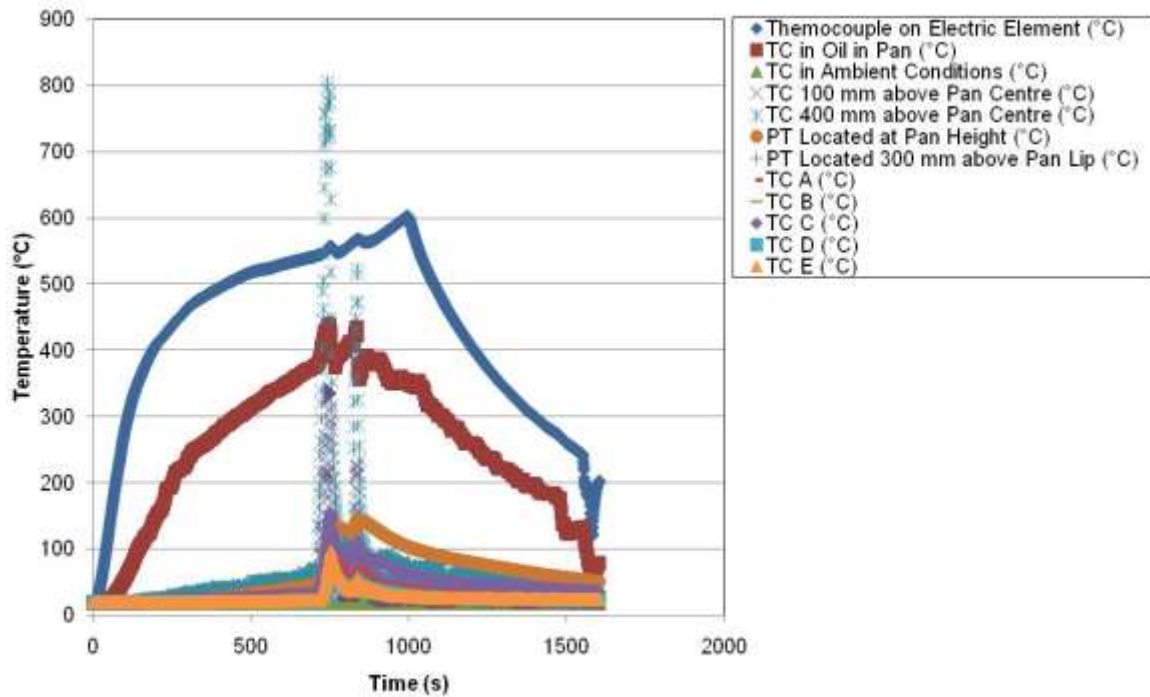


Figure 173: Measured temperatures of the thermocouples and plate thermometers for Test 45.

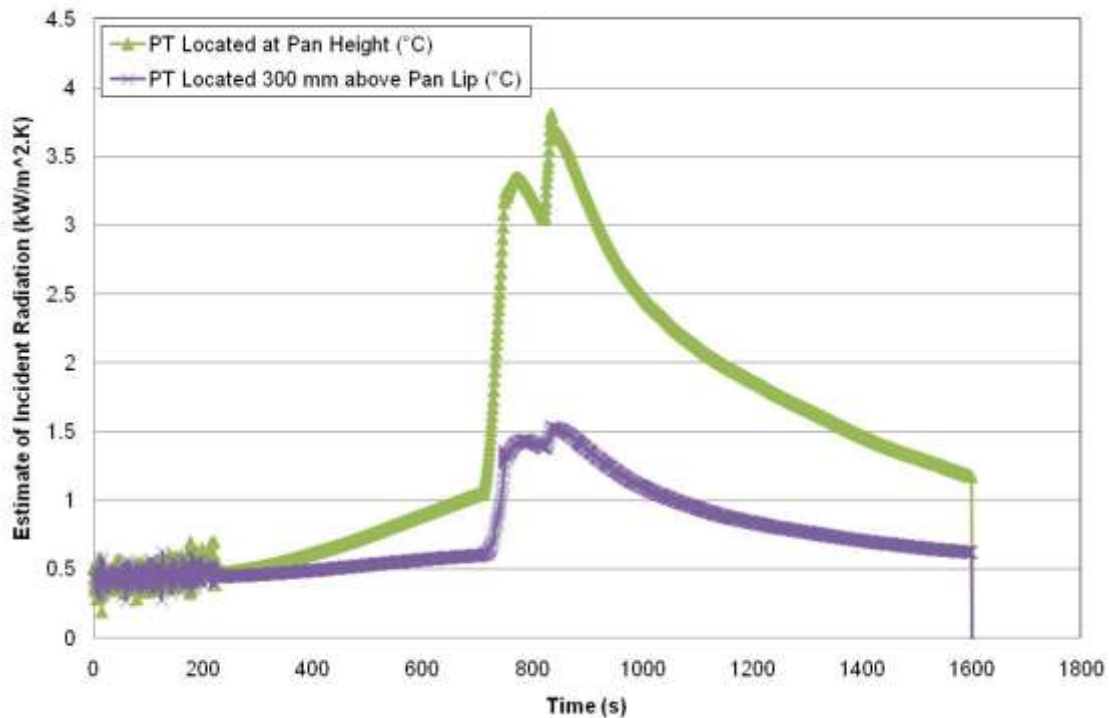


Figure 174: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 45.

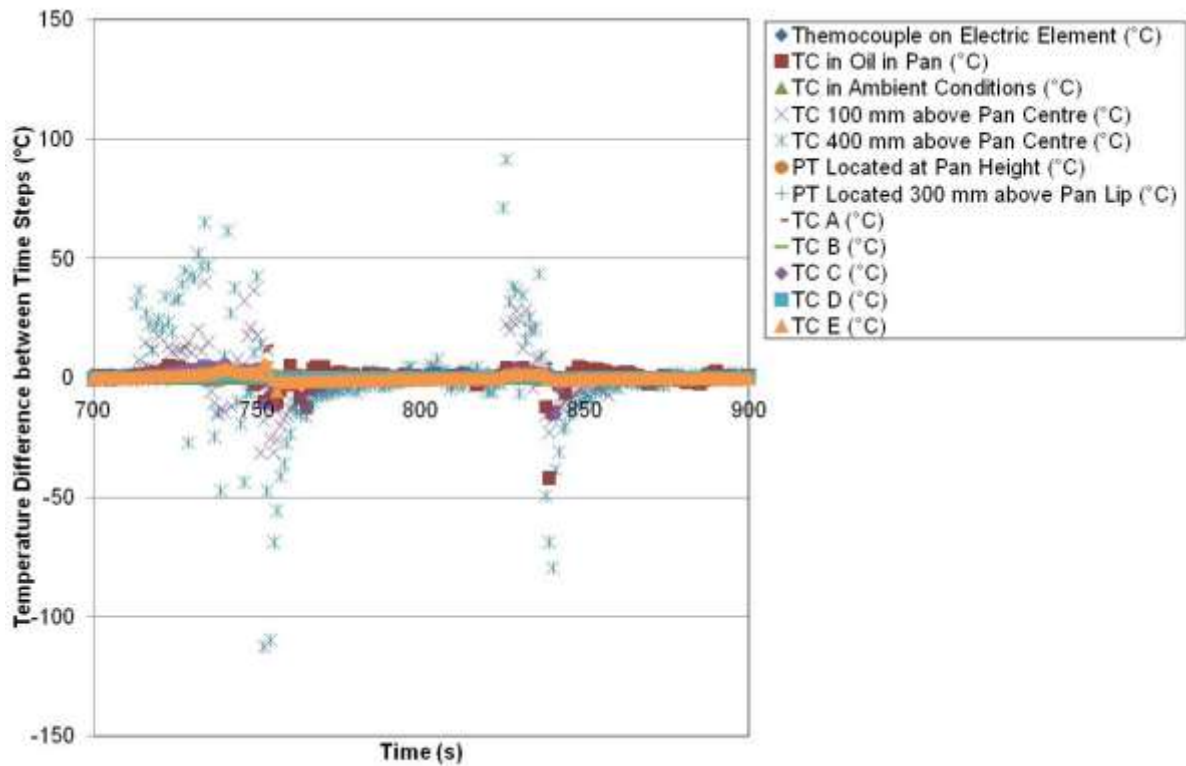


Figure 175: Differences of each of the variable temperatures to between sequential time steps for Test 45.

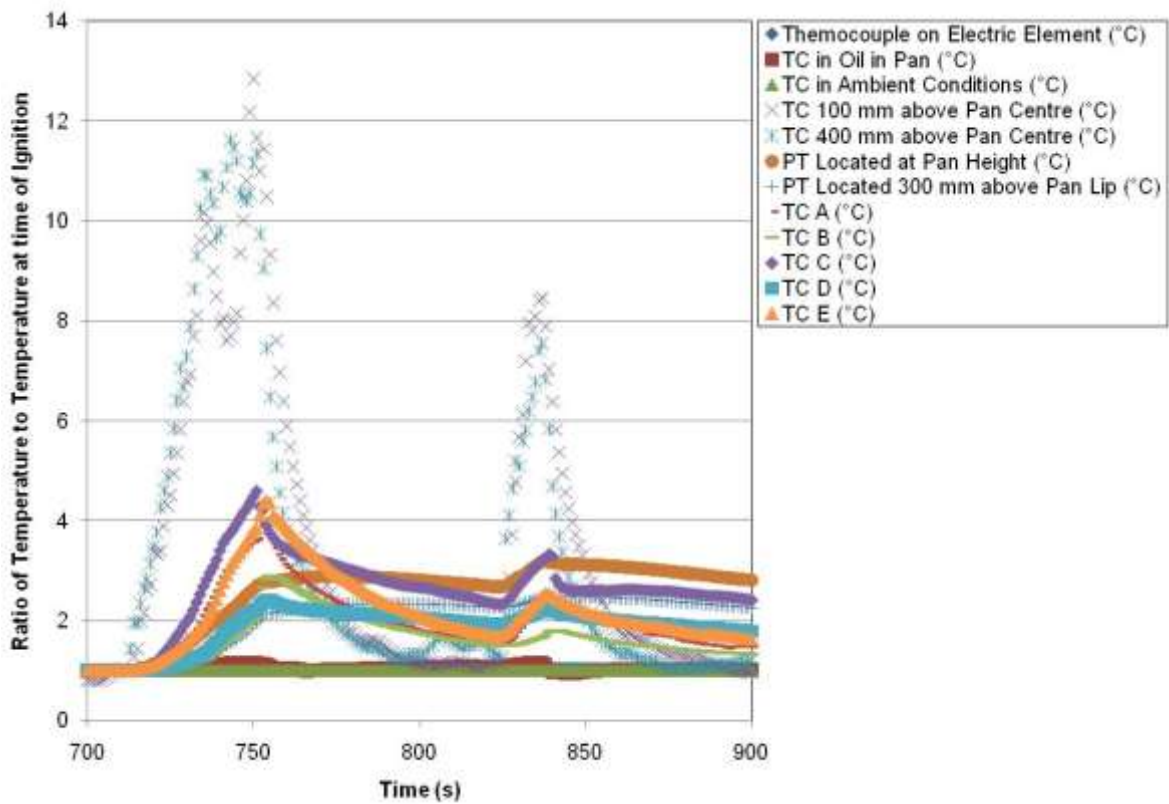


Figure 176: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 45.

## A.48 Test 48

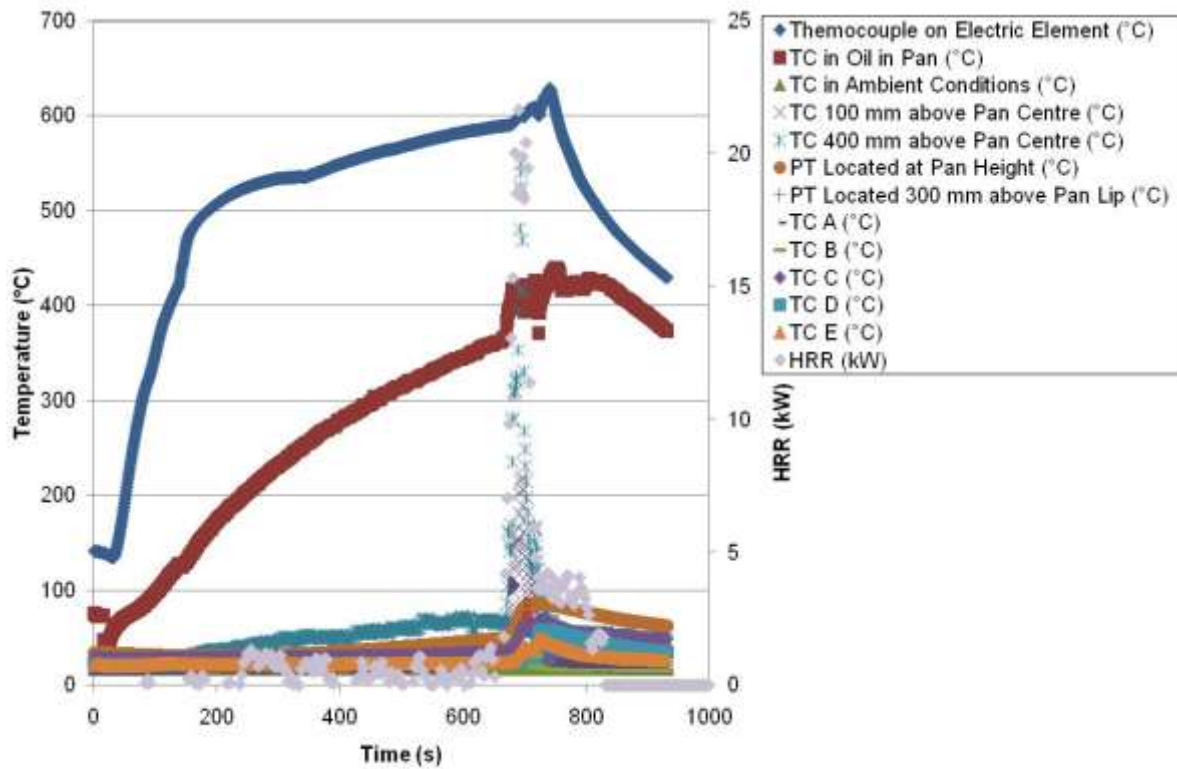


Figure 177: Measured temperatures of the thermocouples and plate thermometers for Test 46.

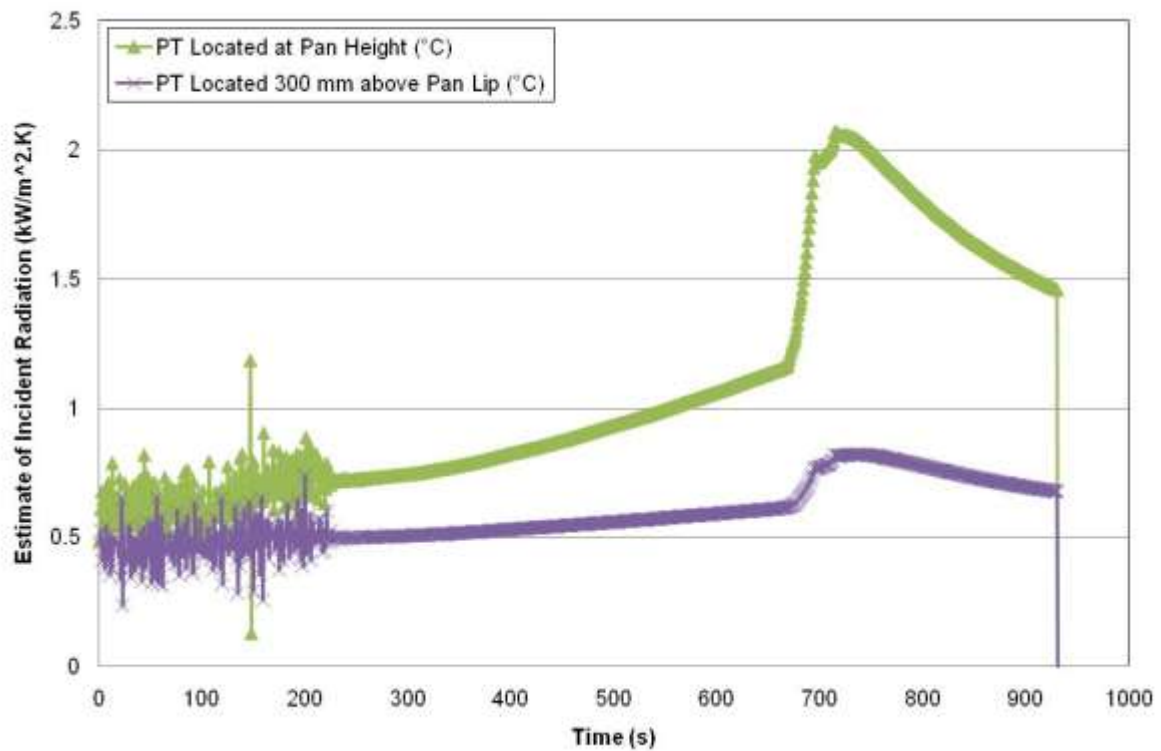


Figure 178: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 46.

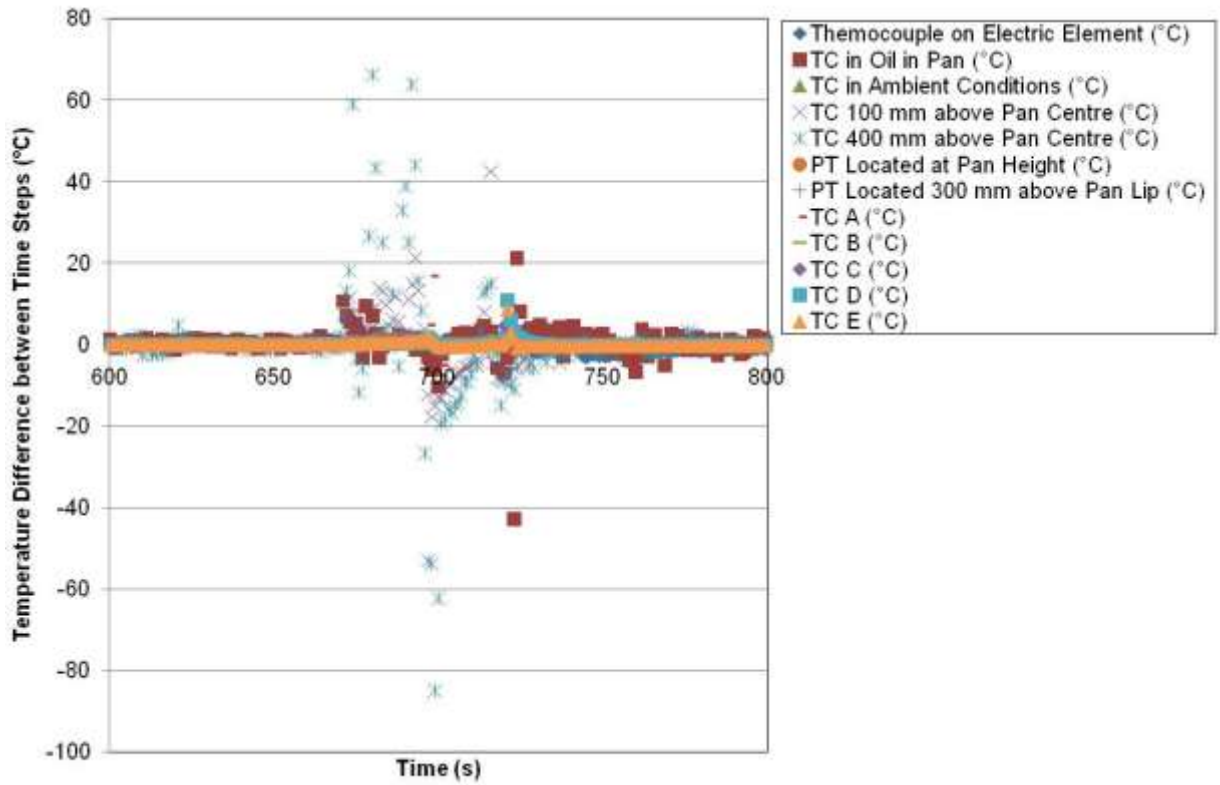


Figure 179: Differences of each of the variable temperatures to between sequential time steps for Test 46.

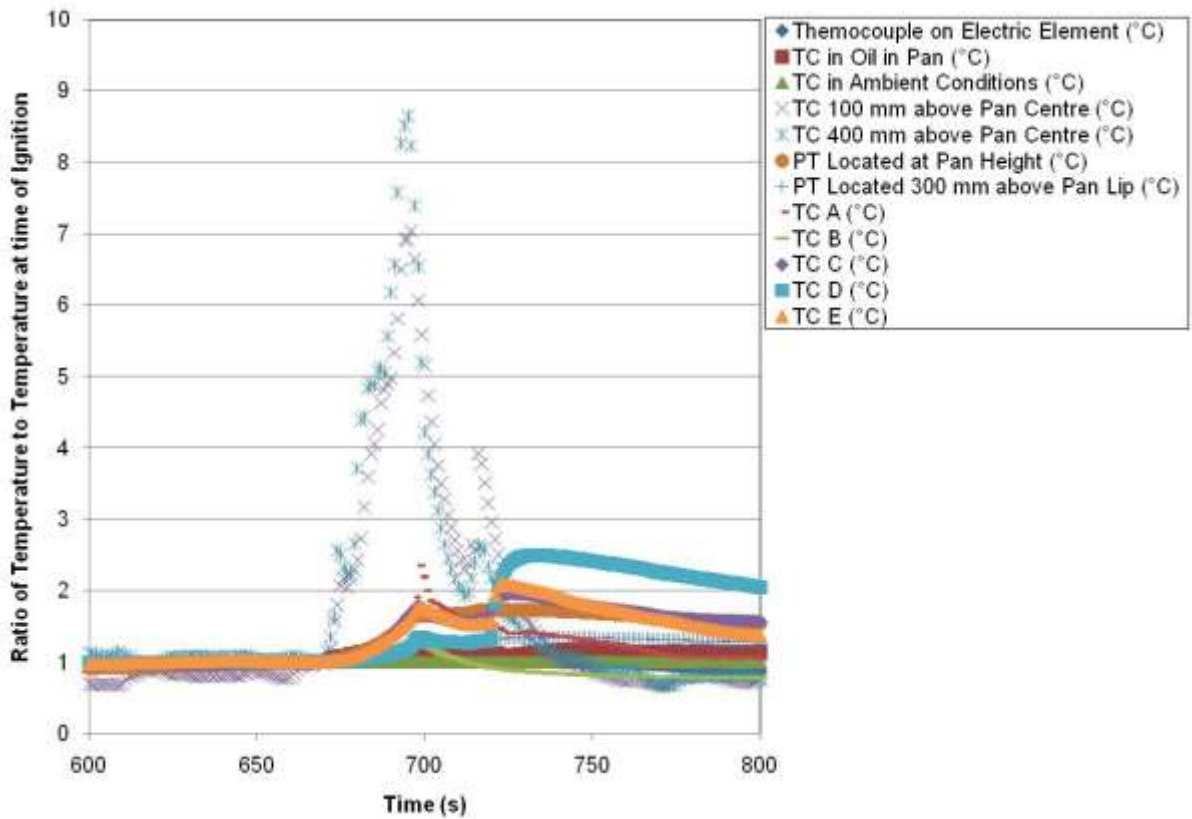


Figure 180: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 46.

## A.49 Test 49

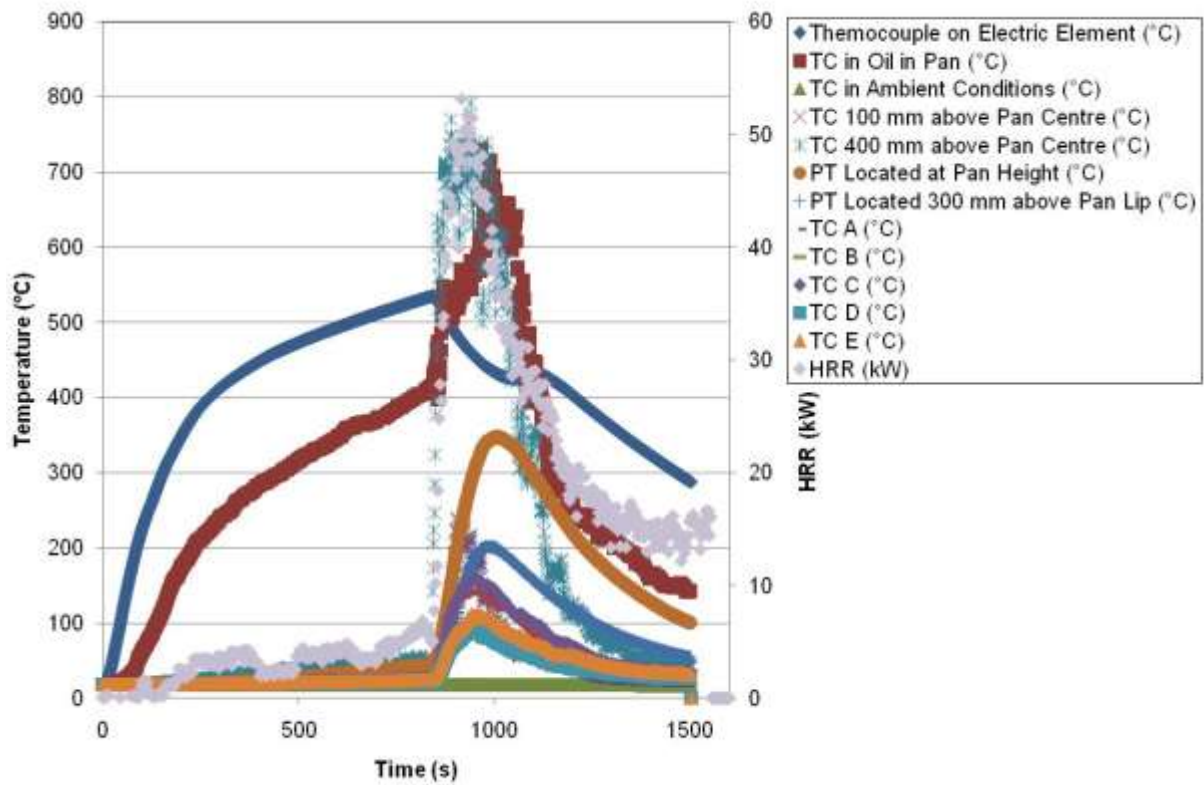


Figure 181: Measured temperatures of the thermocouples and plate thermometers for Test 47.

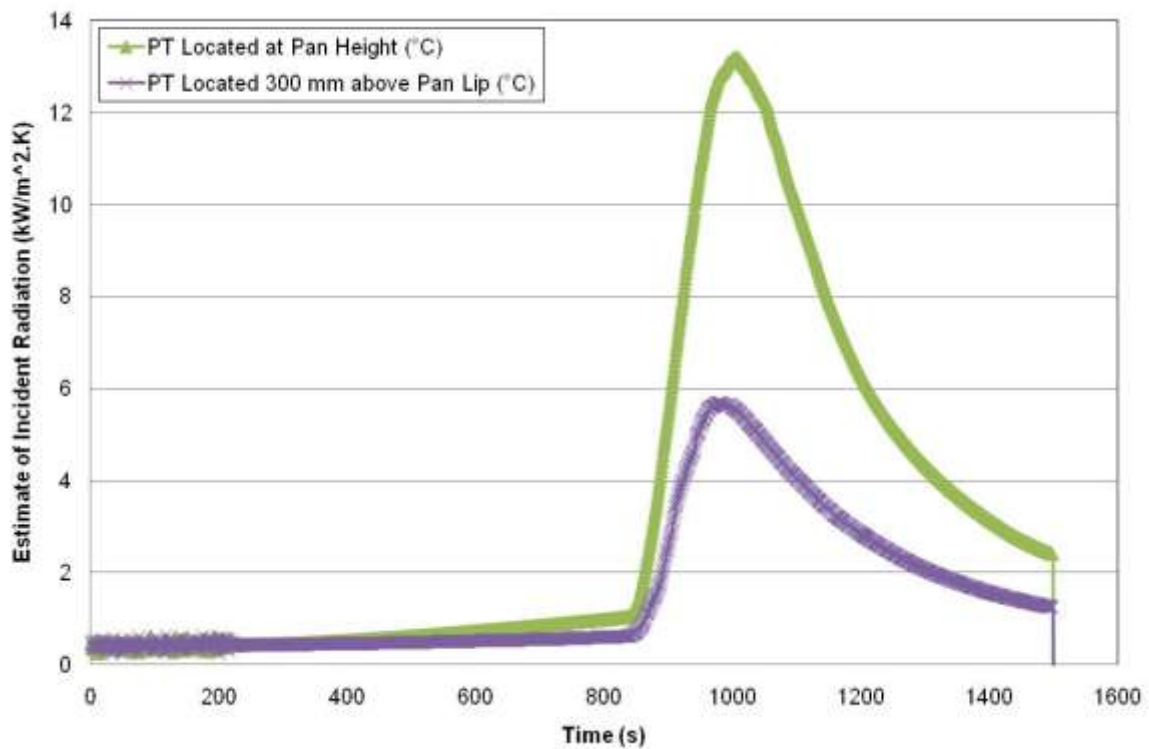


Figure 182: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 47.

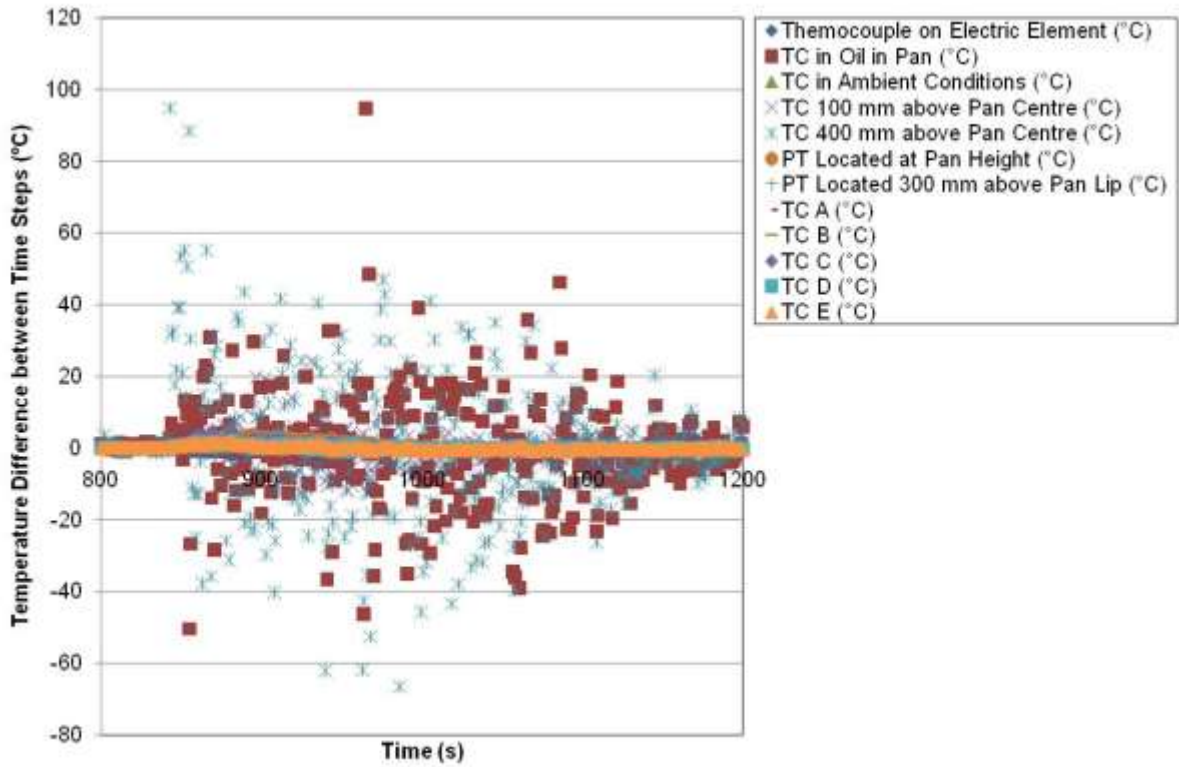


Figure 183: Differences of each of the variable temperatures to between sequential time steps for Test 47.

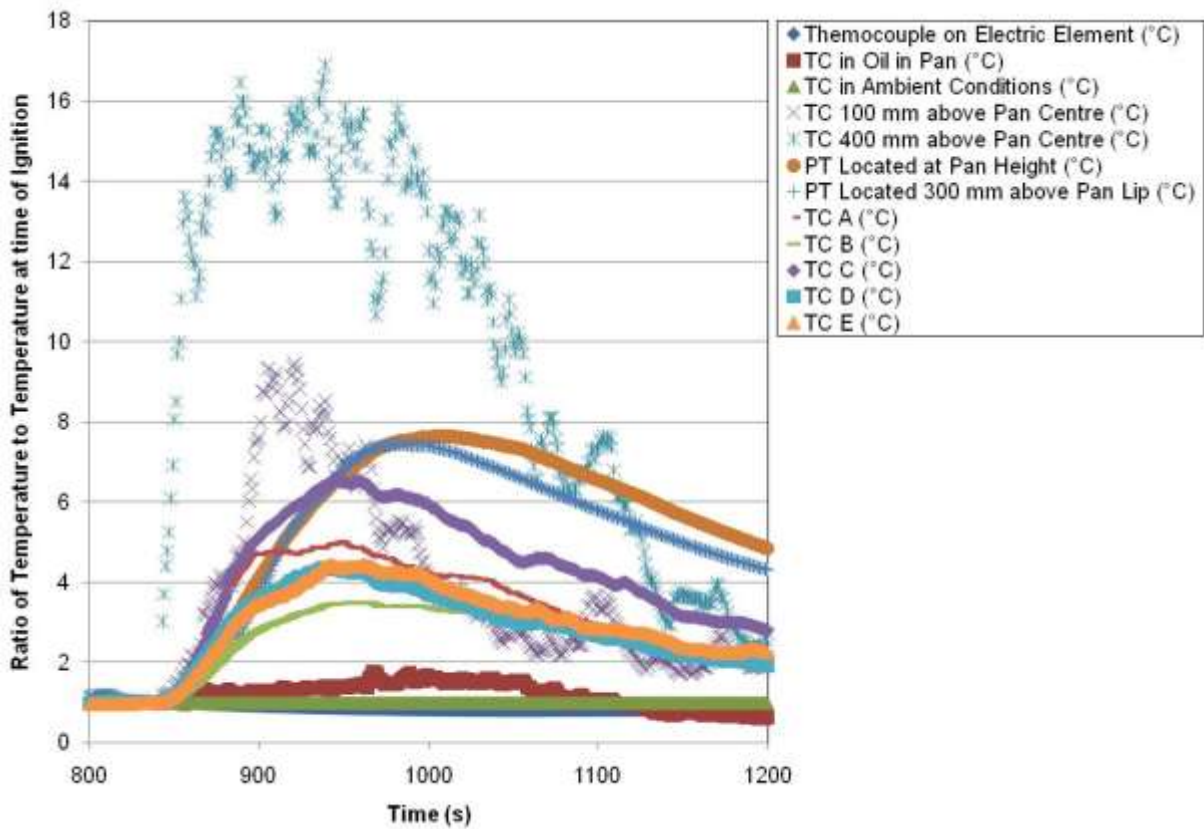


Figure 184: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 47.



## A.50 Test 50

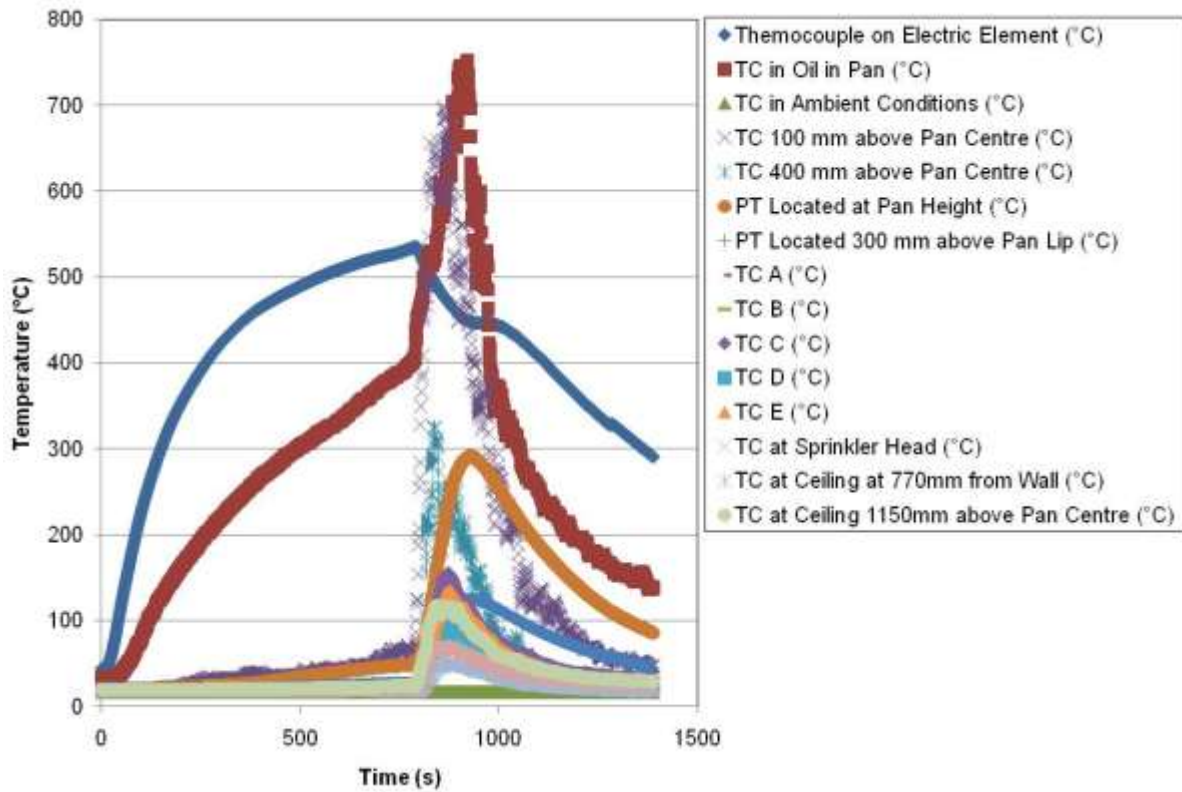


Figure 185: Measured temperatures of the thermocouples and plate thermometers for Test 50.

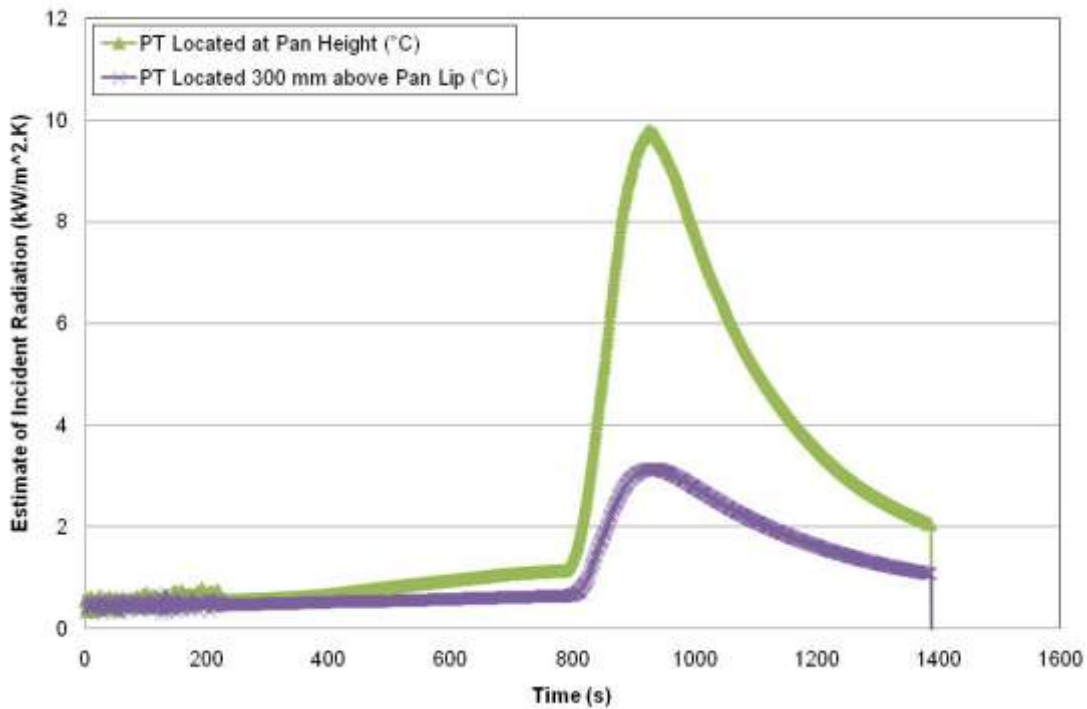


Figure 186: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 50.

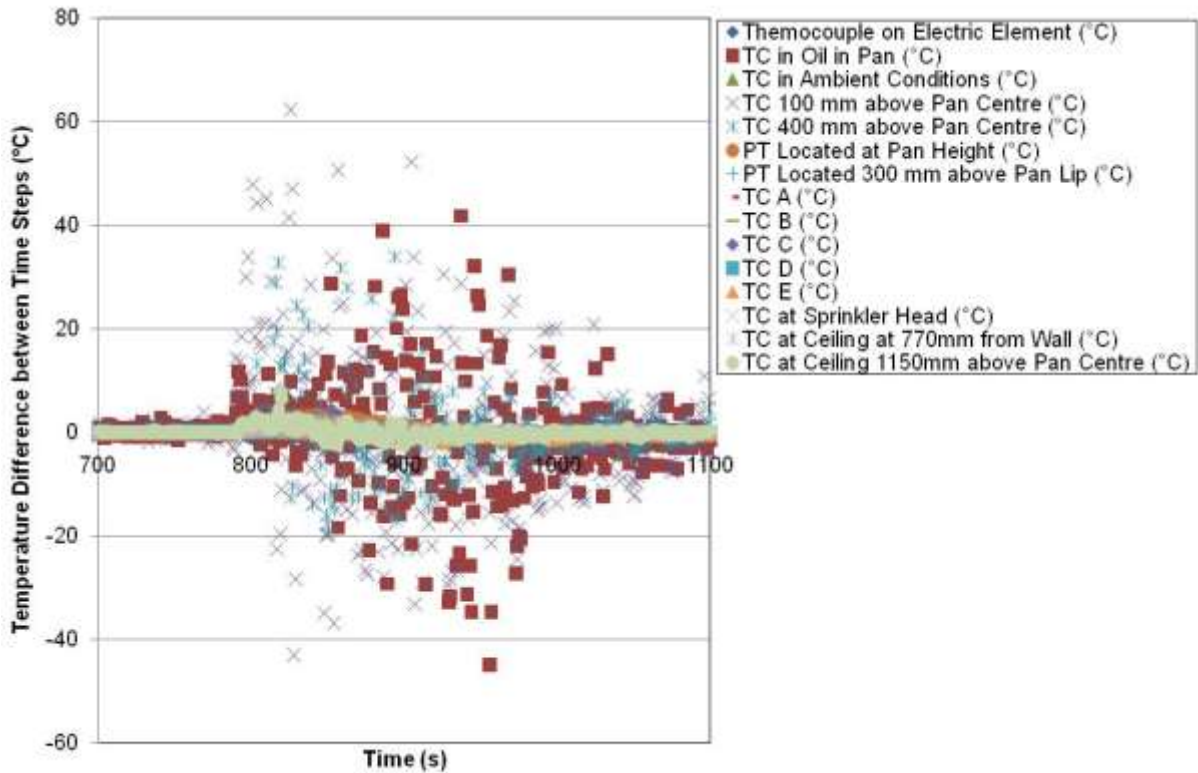


Figure 187: Differences of each of the variable temperatures to between sequential time steps for Test 50.

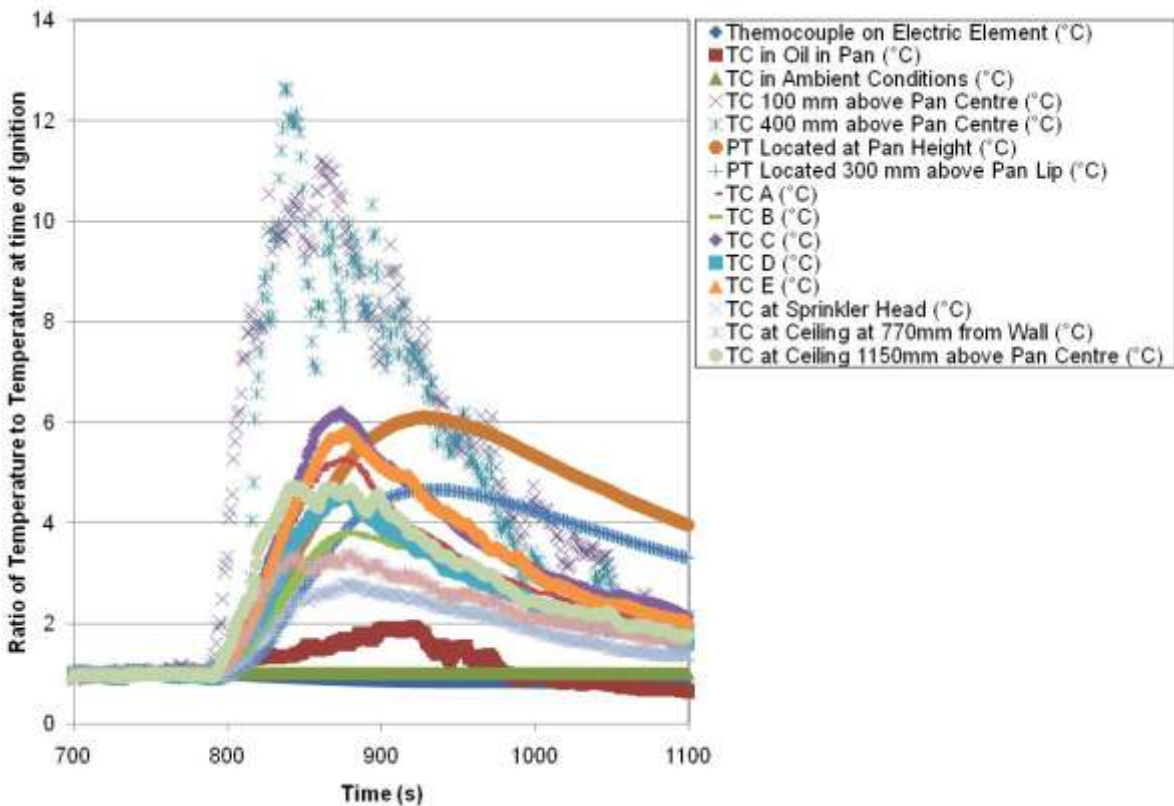


Figure 188: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 50.

## A.51 Test 51

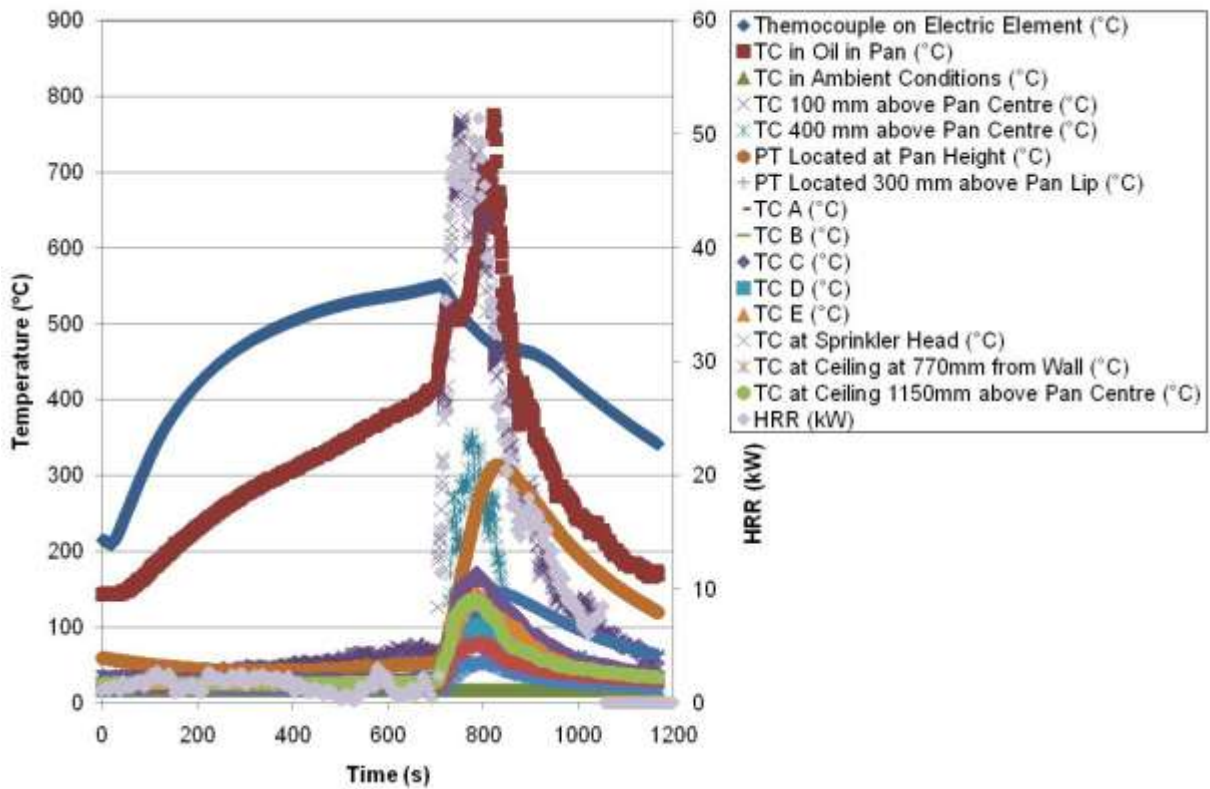


Figure 189: Measured temperatures of the thermocouples and plate thermometers for Test 51.

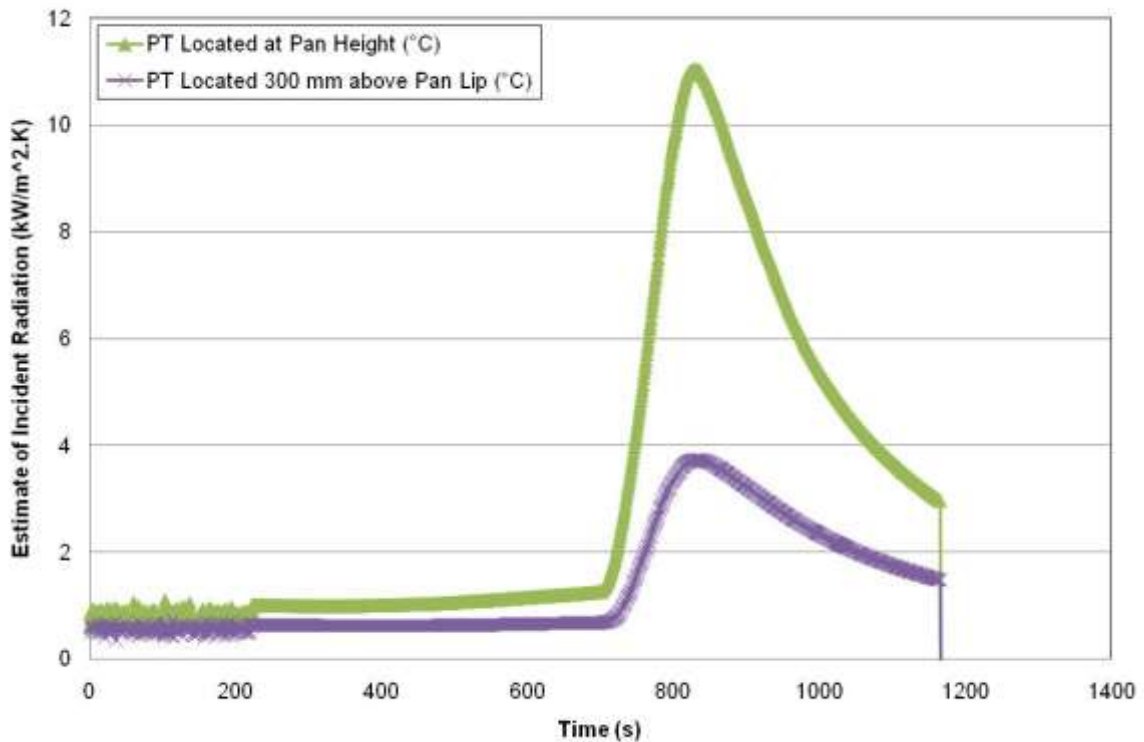


Figure 190: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 51.

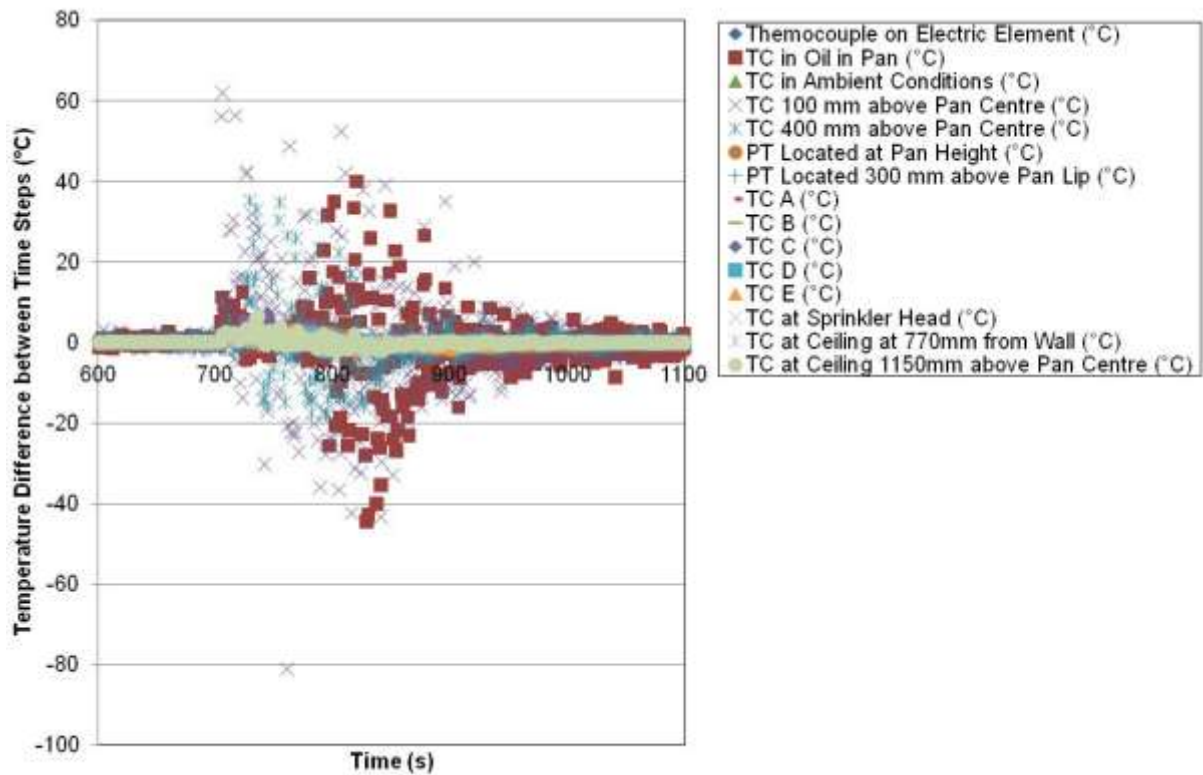


Figure 191: Differences of each of the variable temperatures to between sequential time steps for Test 51.

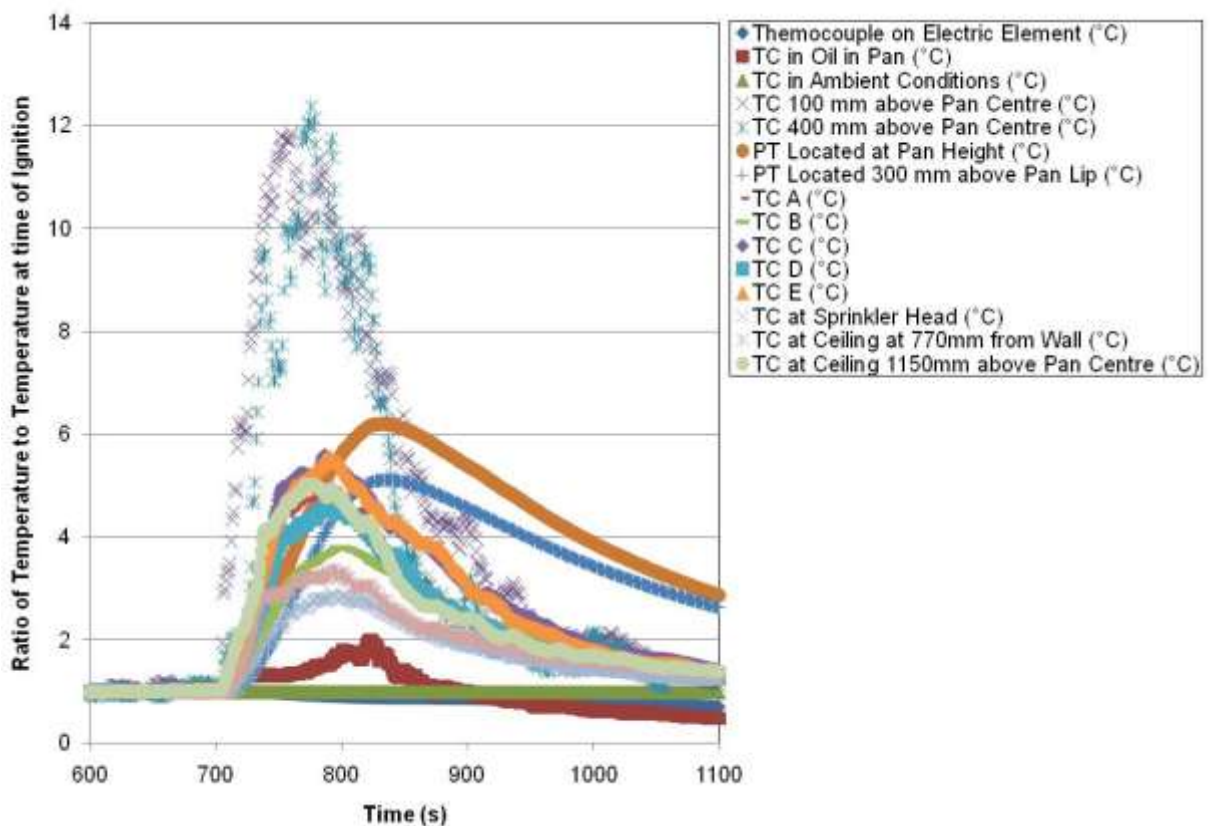


Figure 192: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 51.

## A.52 Test 52

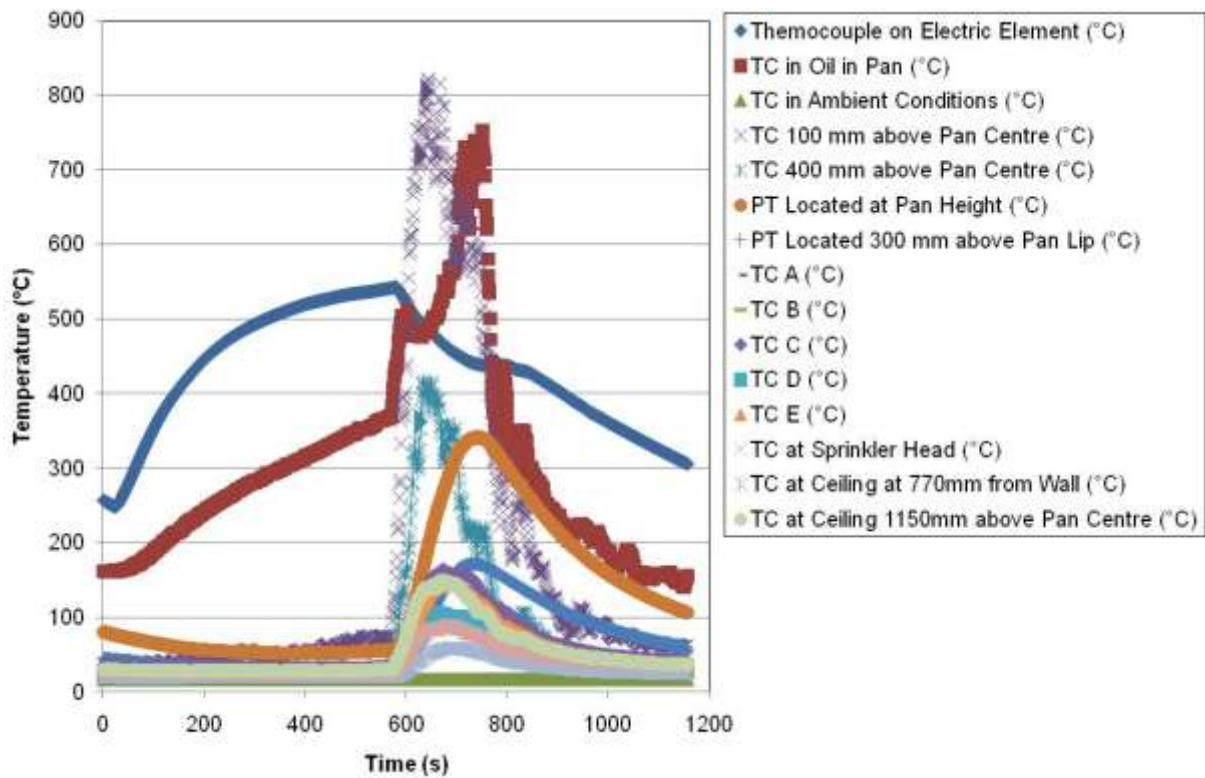


Figure 193: Measured temperatures of the thermocouples and plate thermometers for Test 52.

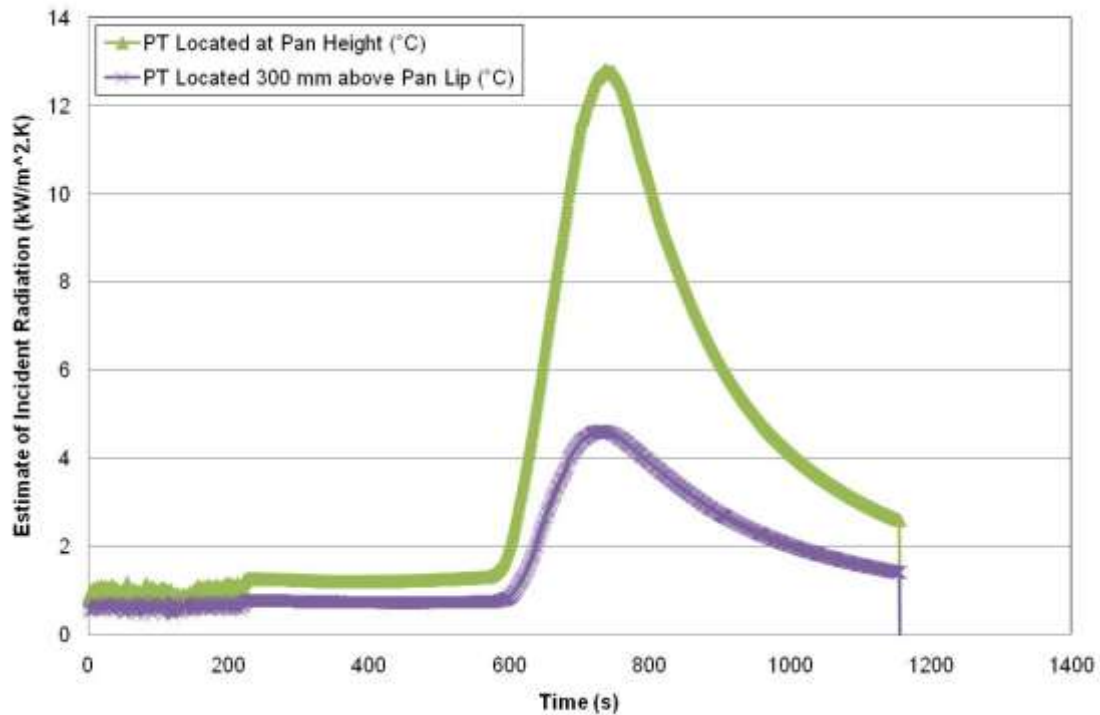


Figure 194: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 52.

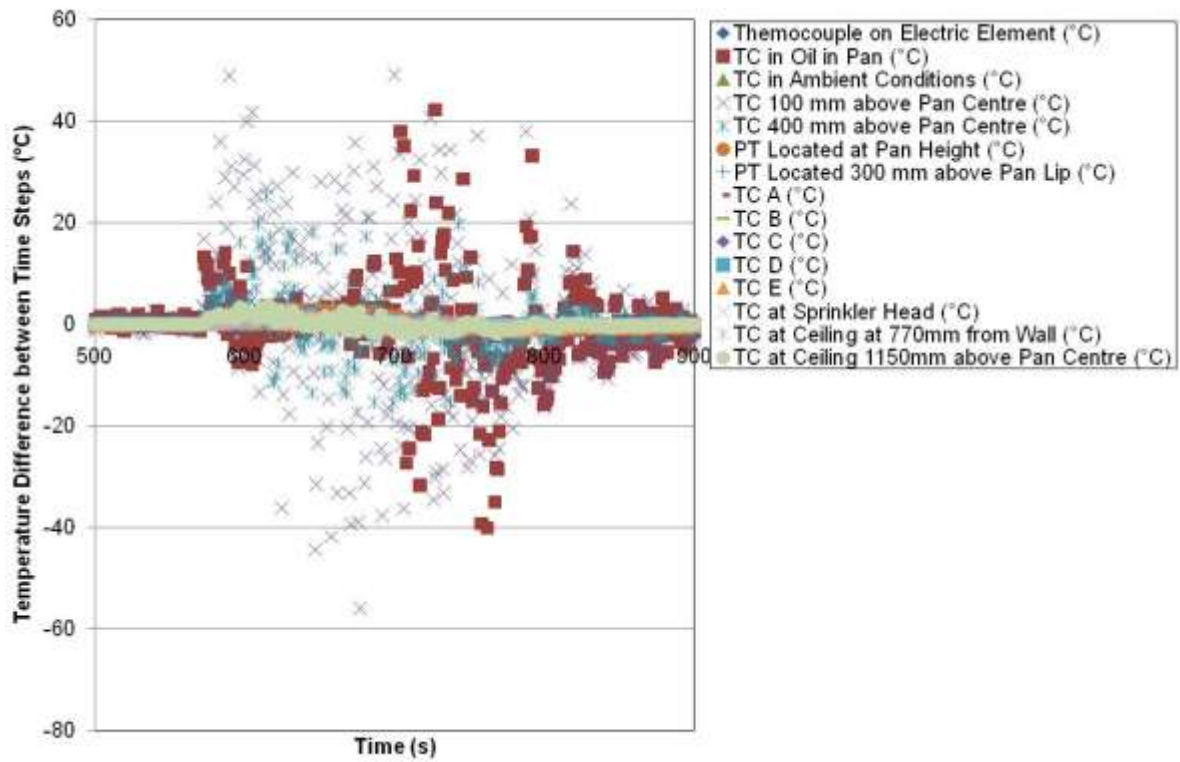


Figure 195: Differences of each of the variable temperatures to between sequential time steps for Test 52.

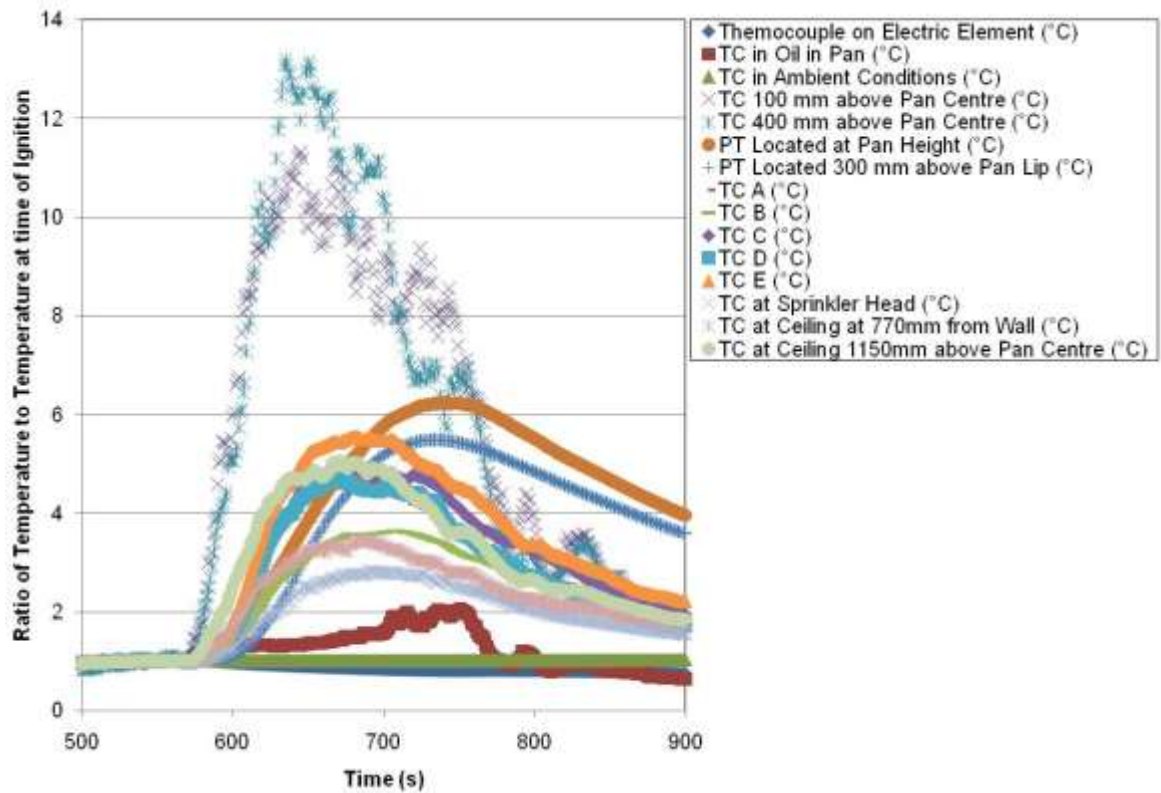


Figure 196: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 52.

## A.53 Test 53

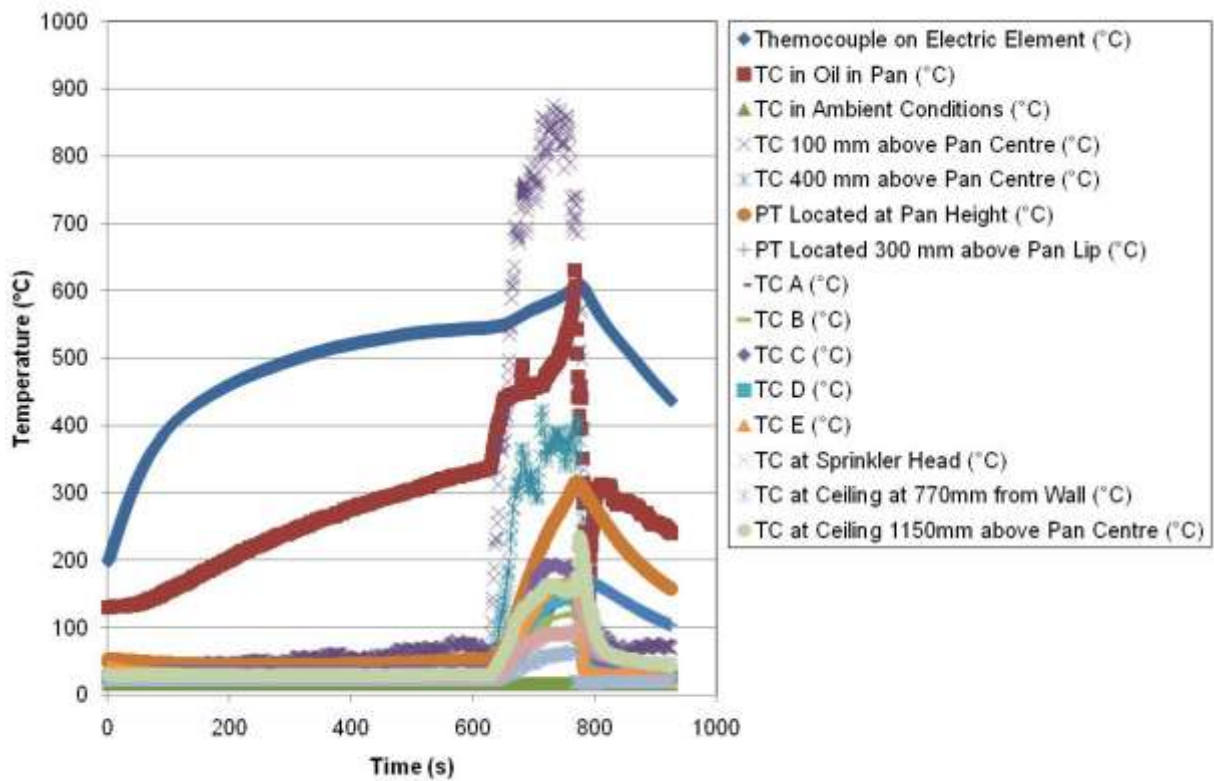


Figure 197: Measured temperatures of the thermocouples and plate thermometers for Test 53.

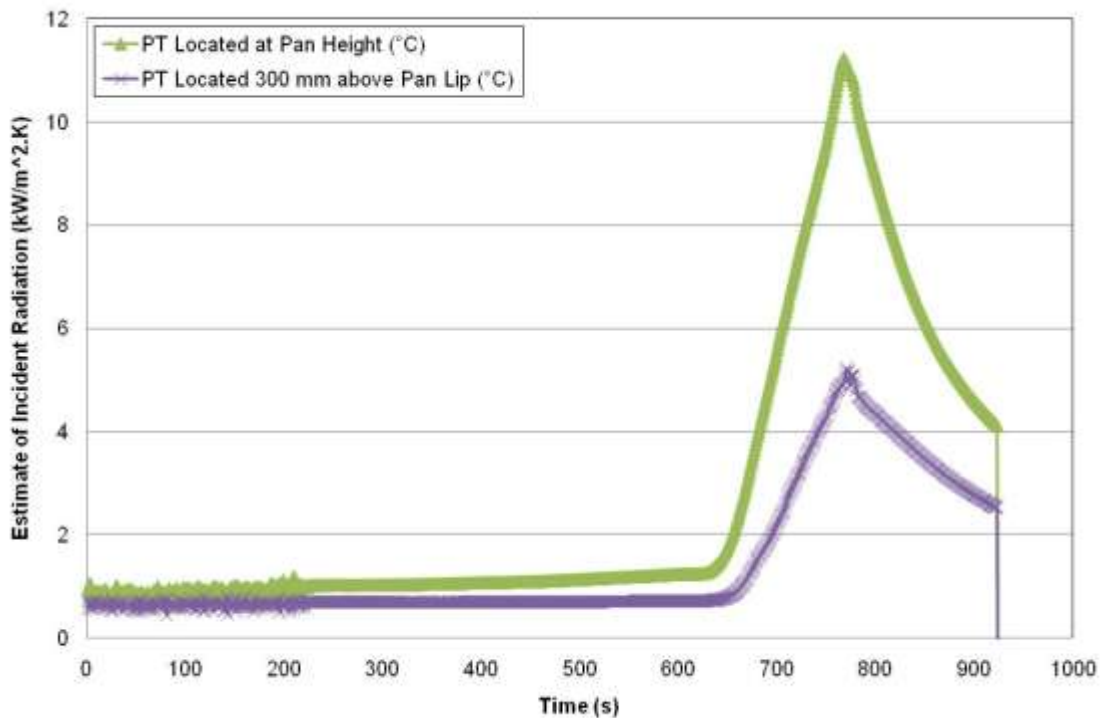


Figure 198: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 53.

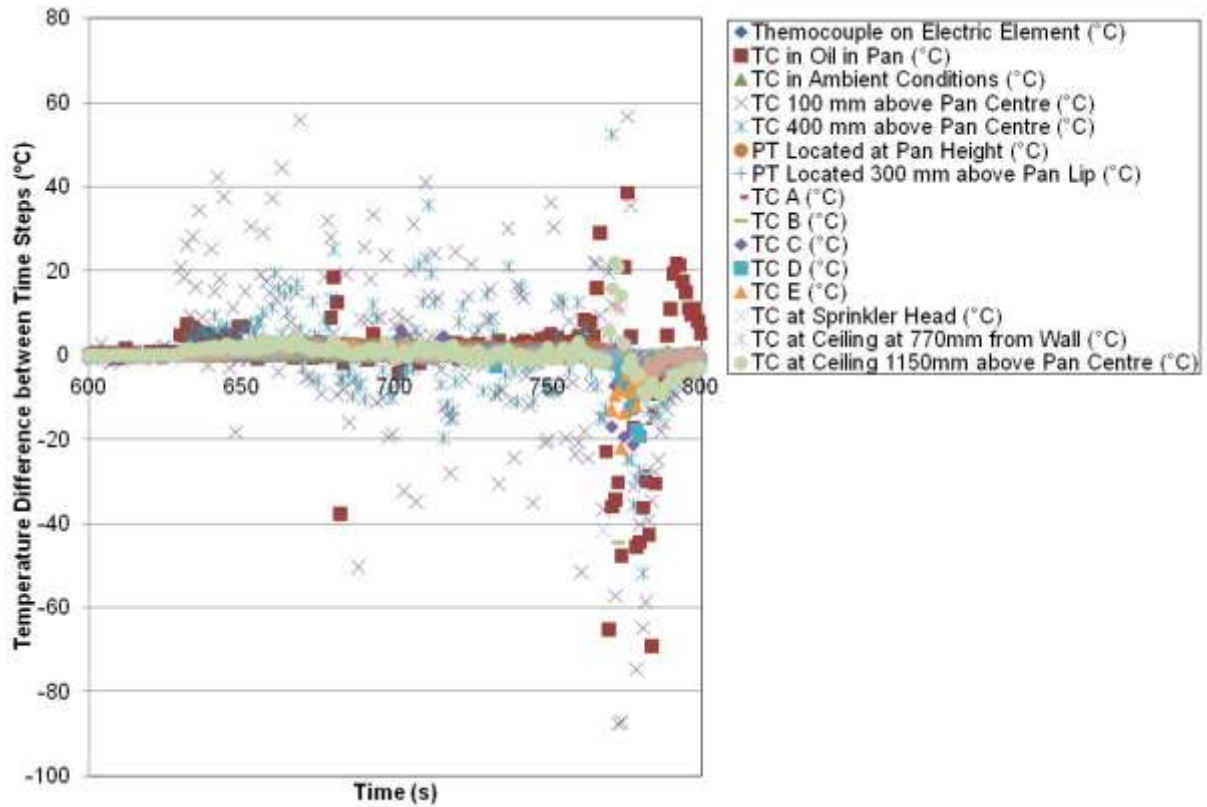


Figure 199: Differences of each of the variable temperatures to between sequential time steps for Test 53.

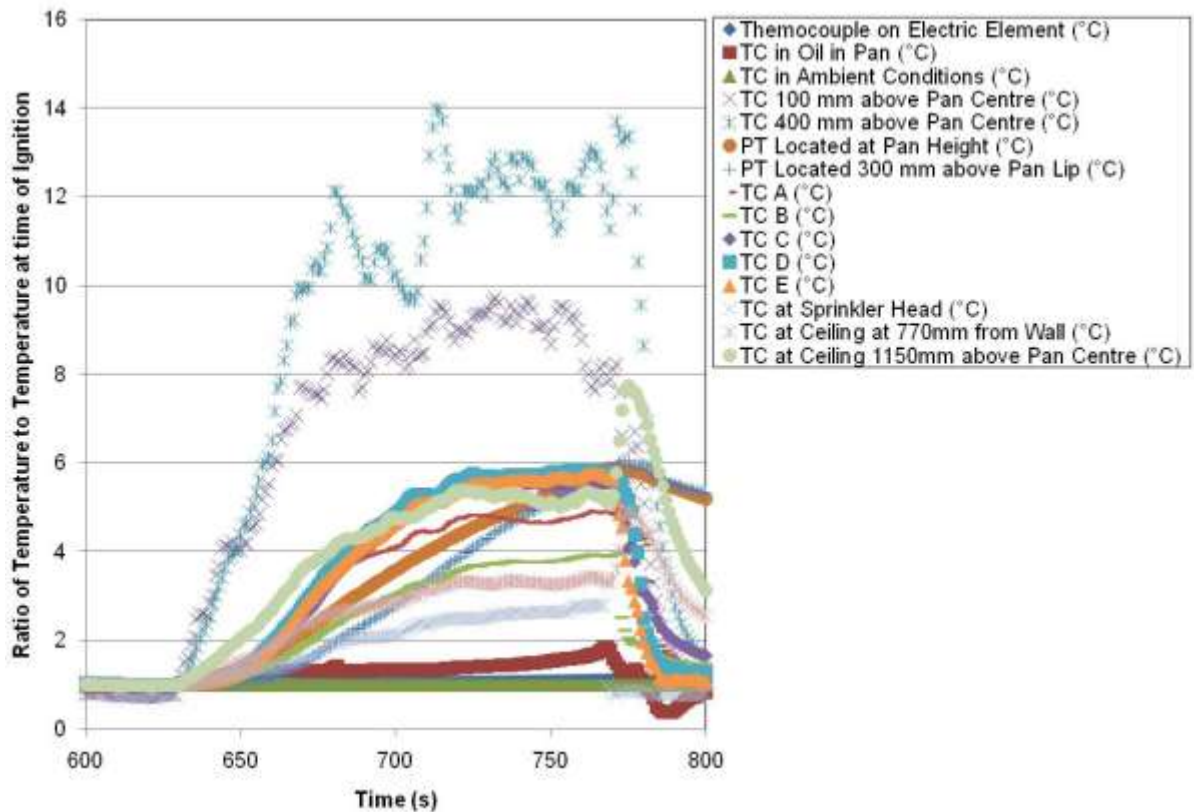


Figure 200: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 53.



## A.54 Test 54

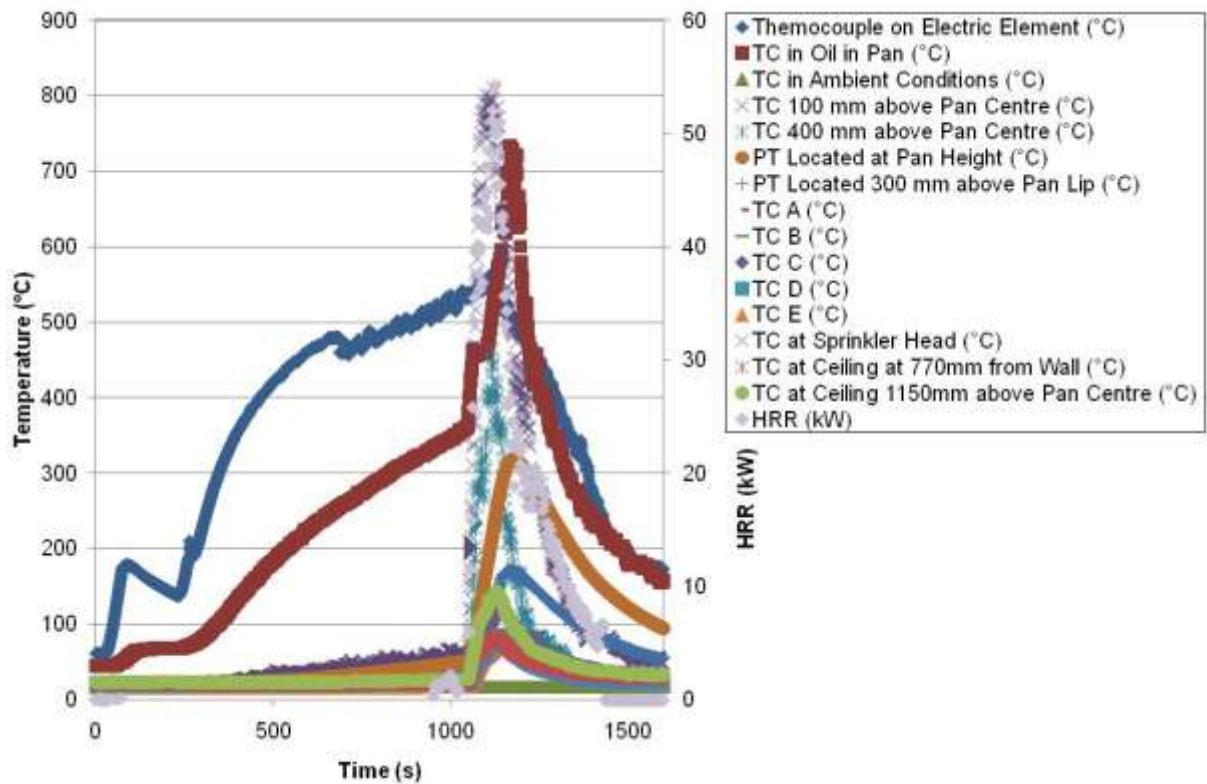


Figure 201: Measured temperatures of the thermocouples and plate thermometers for Test 54.

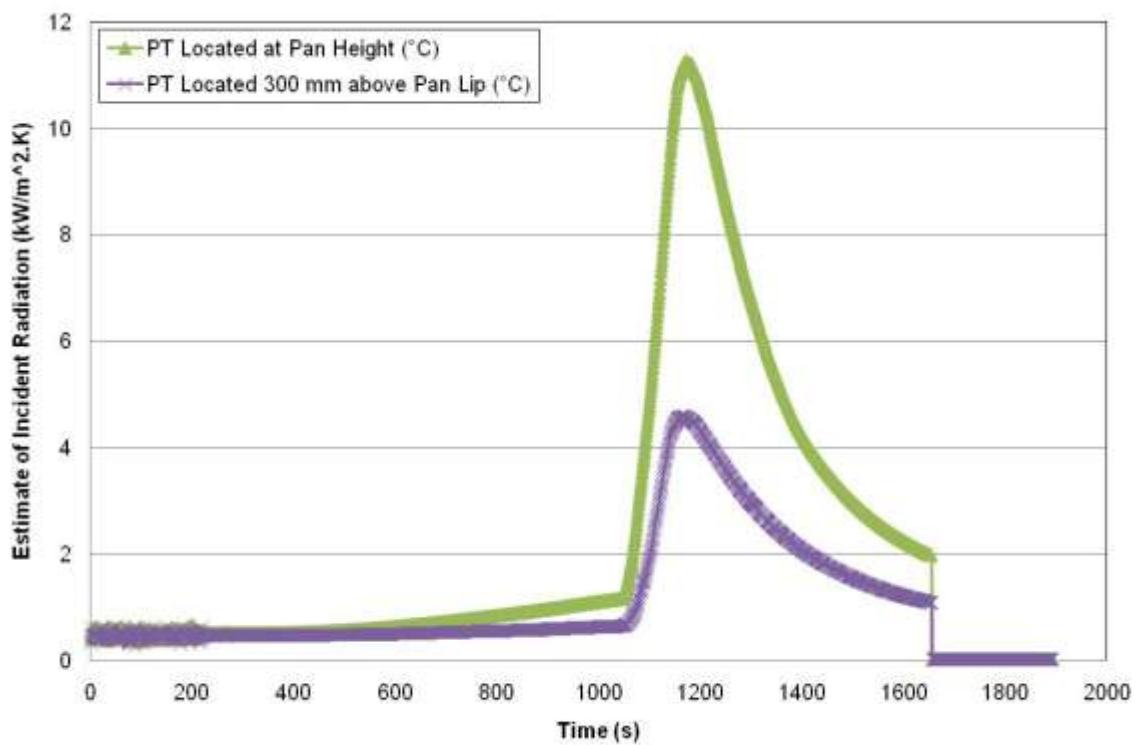


Figure 202: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 54.

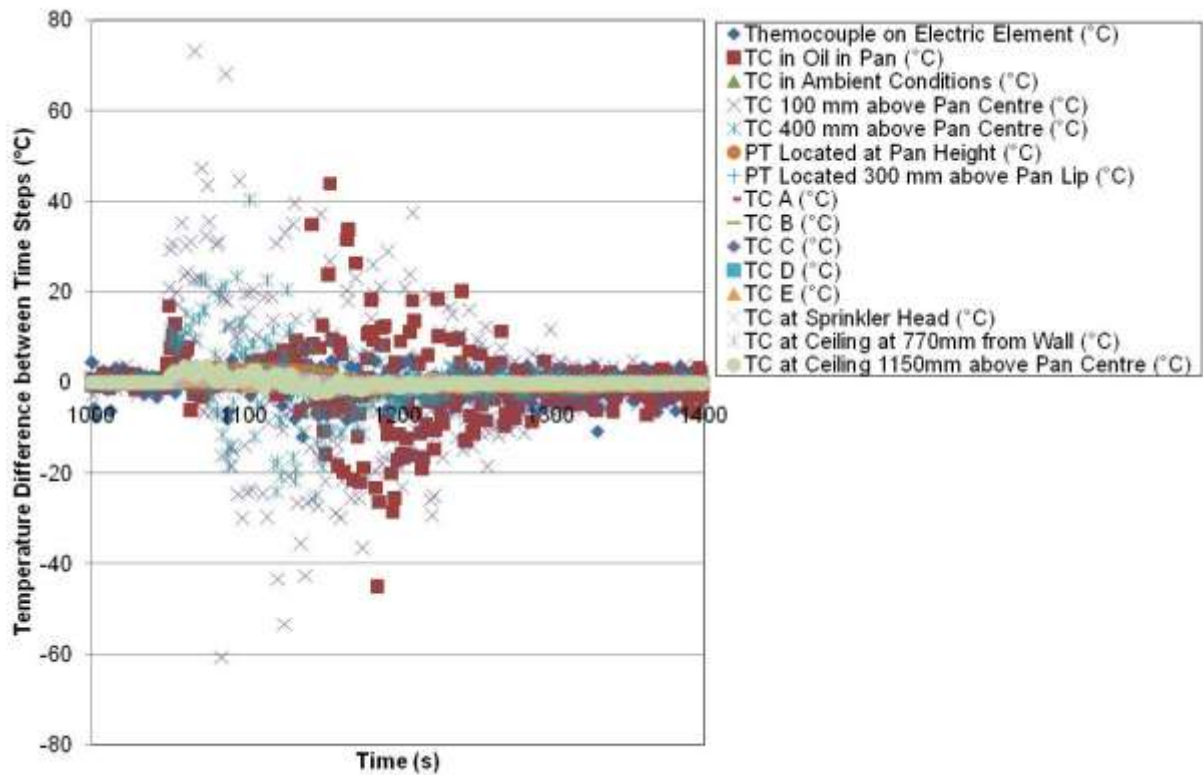


Figure 203: Differences of each of the variable temperatures to between sequential time steps for Test 54.

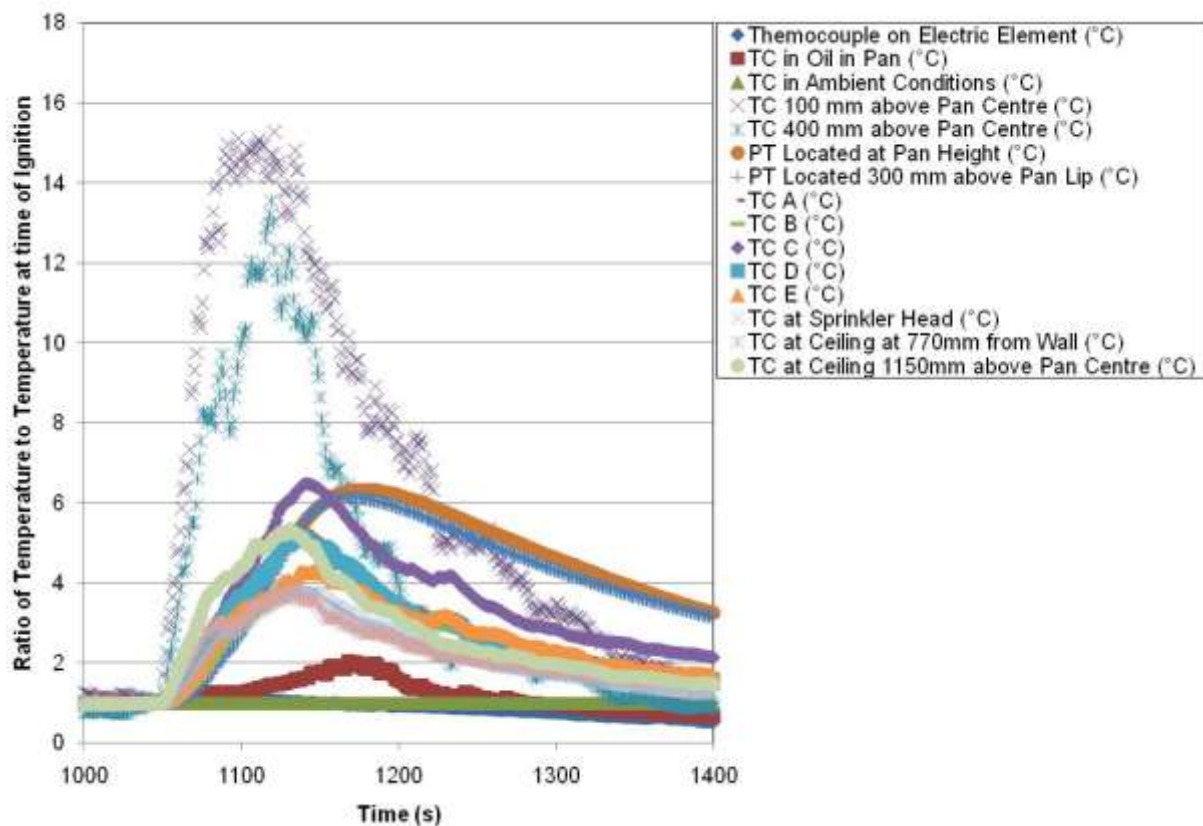


Figure 204: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 54.

## A.55 Test 55

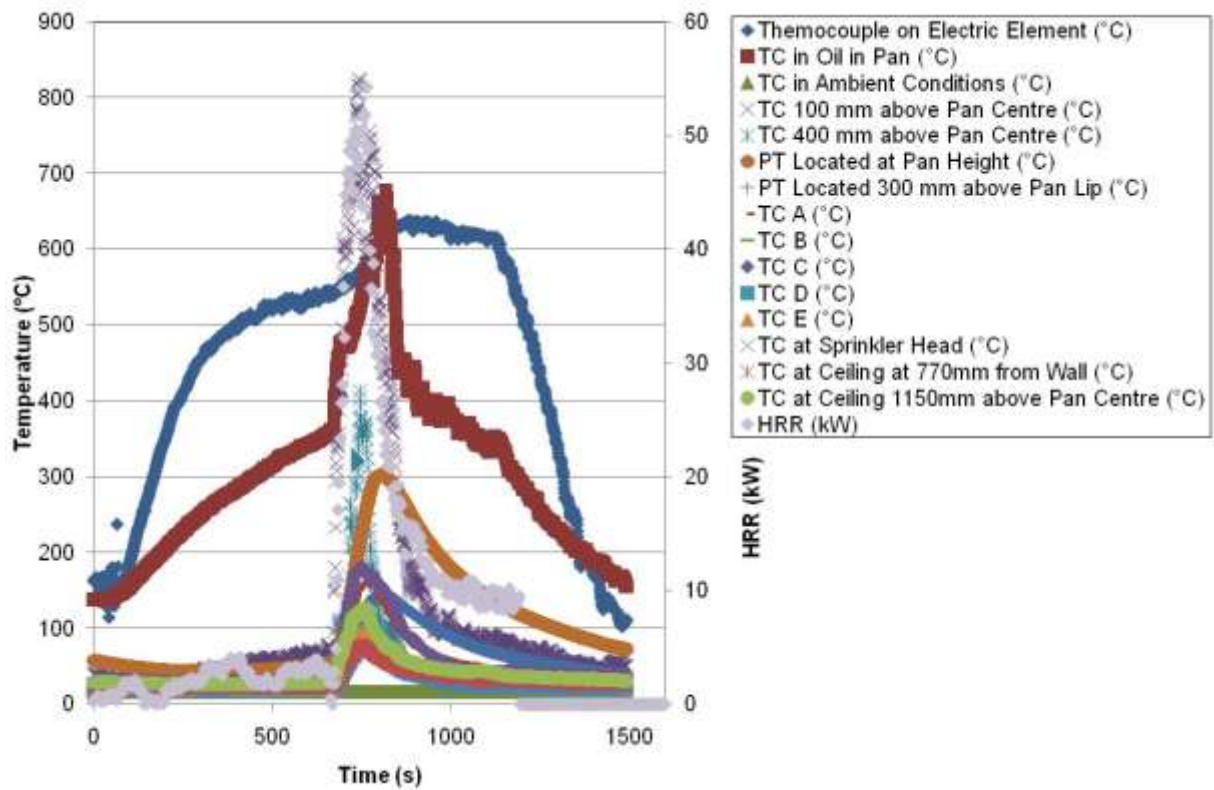


Figure 205: Measured temperatures of the thermocouples and plate thermometers for Test 55.

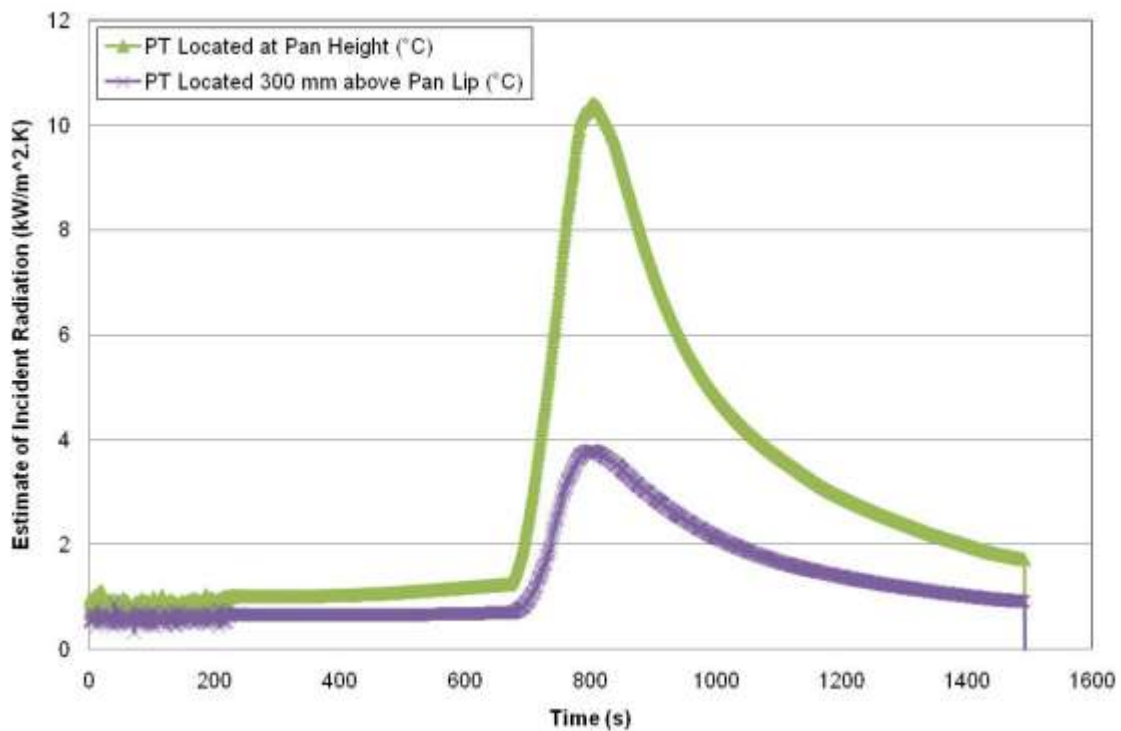


Figure 206: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 55.

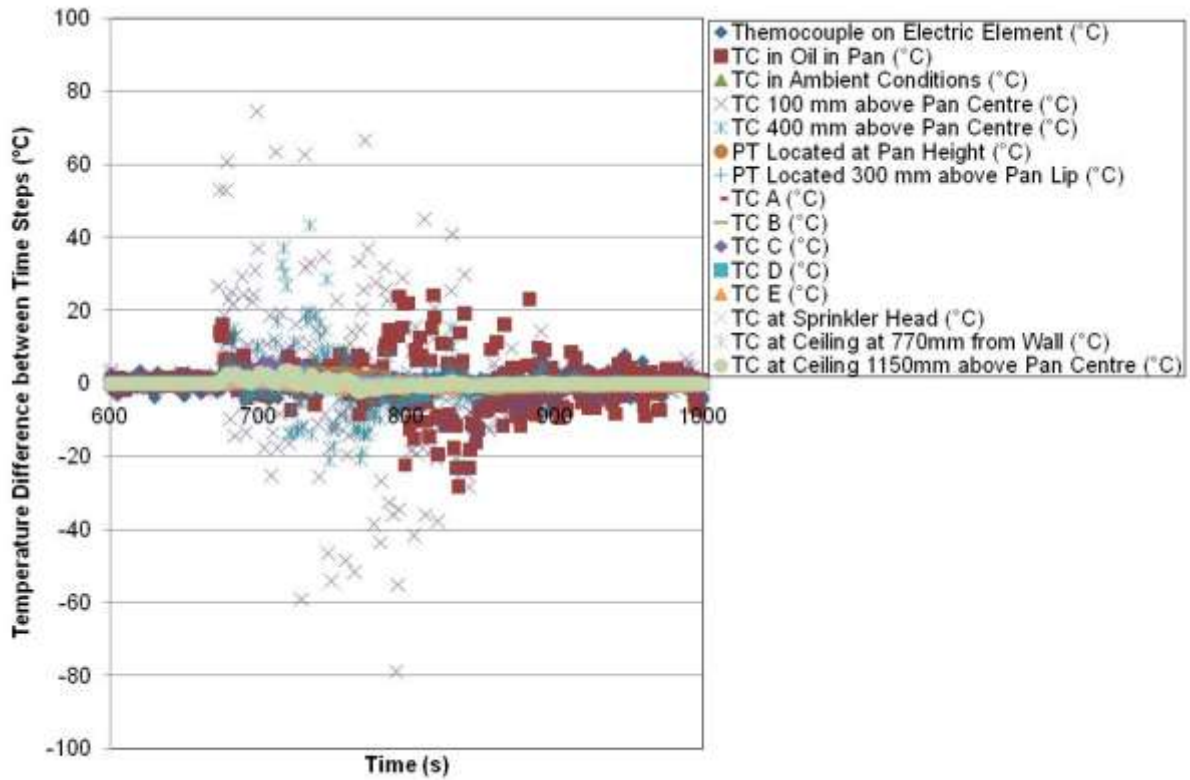


Figure 207: Differences of each of the variable temperatures to between sequential time steps for Test 55.

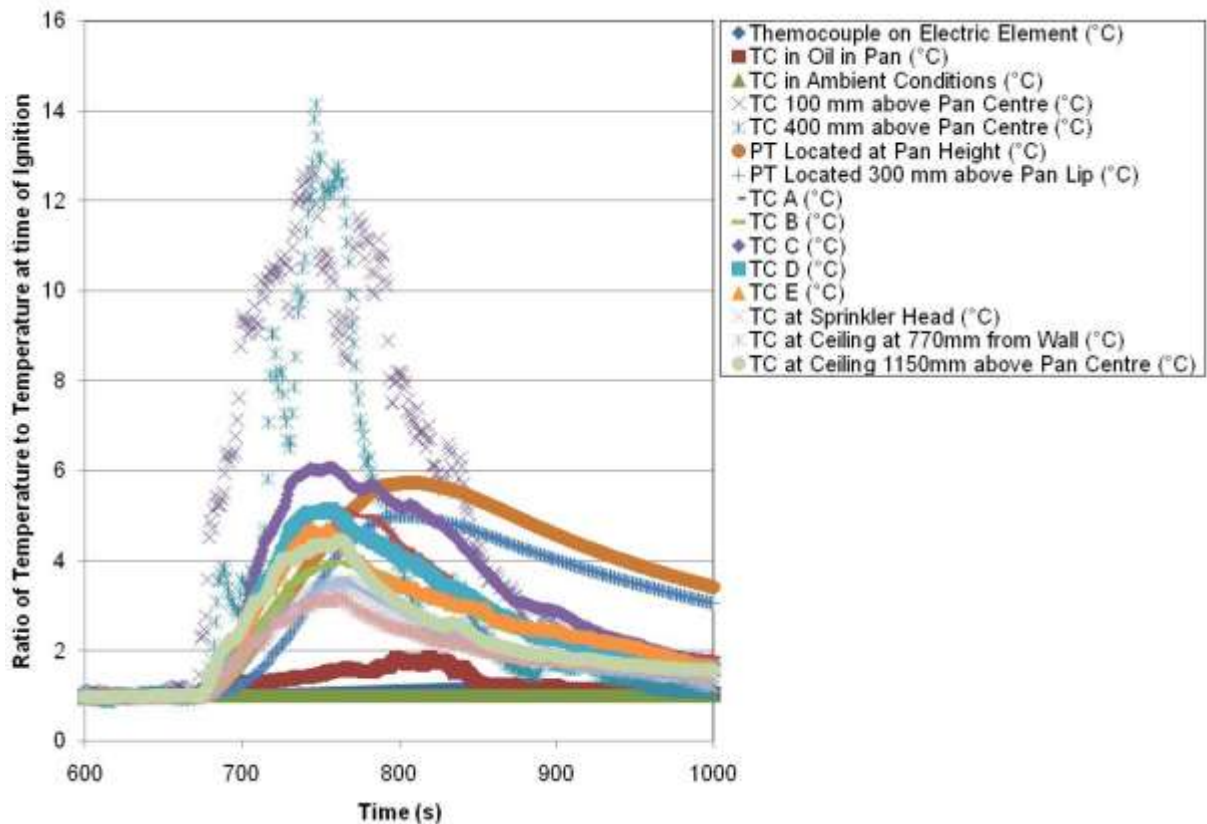


Figure 208: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 55.

## A.56 Test 56

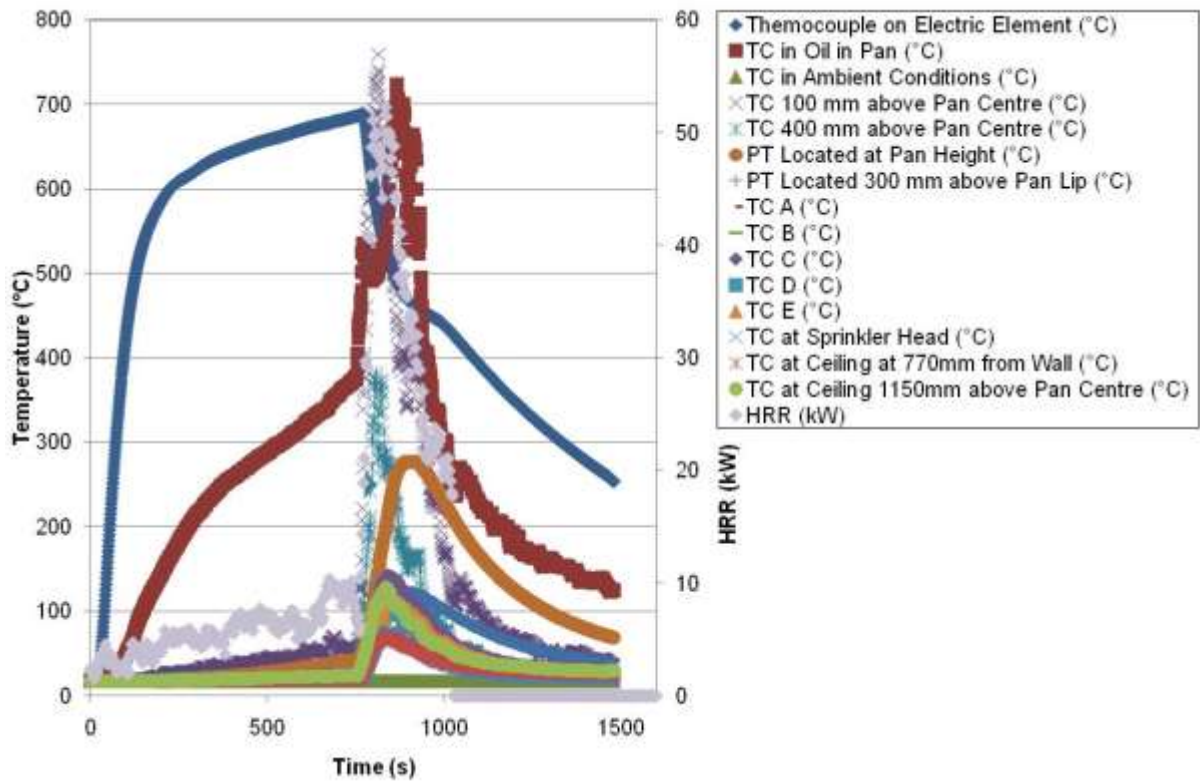


Figure 209: Measured temperatures of the thermocouples and plate thermometers for Test 56.

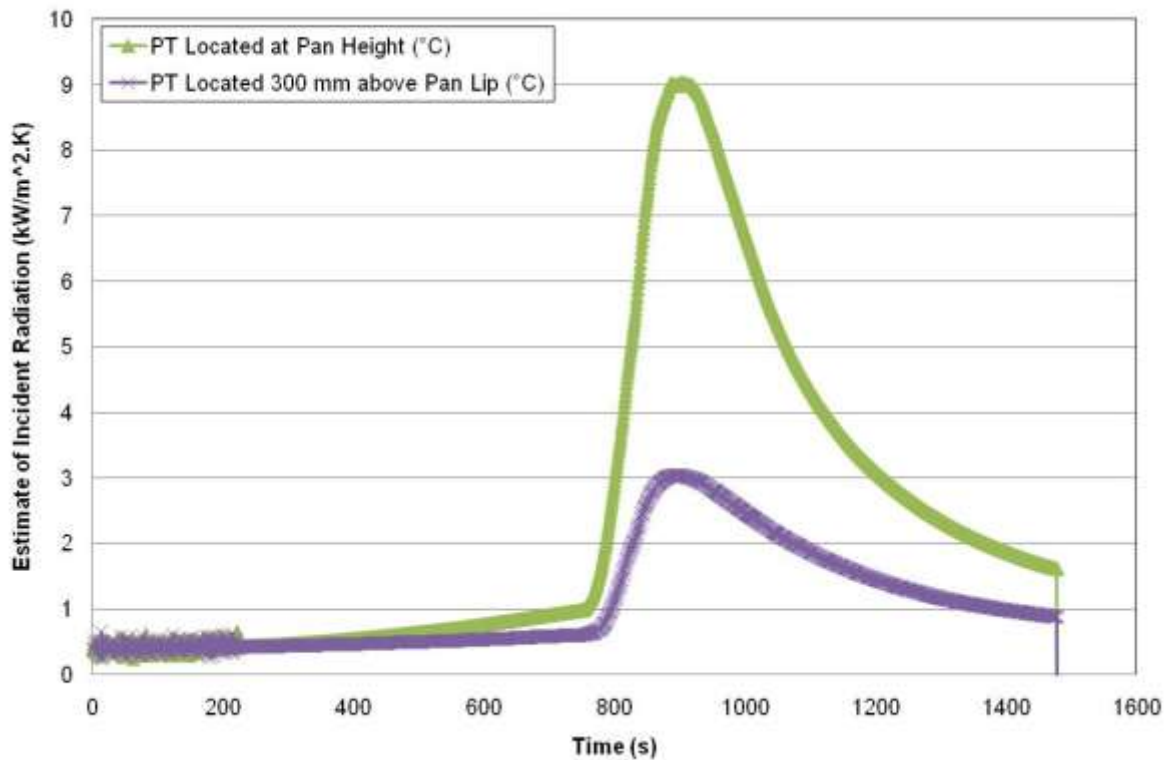


Figure 210: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 56.

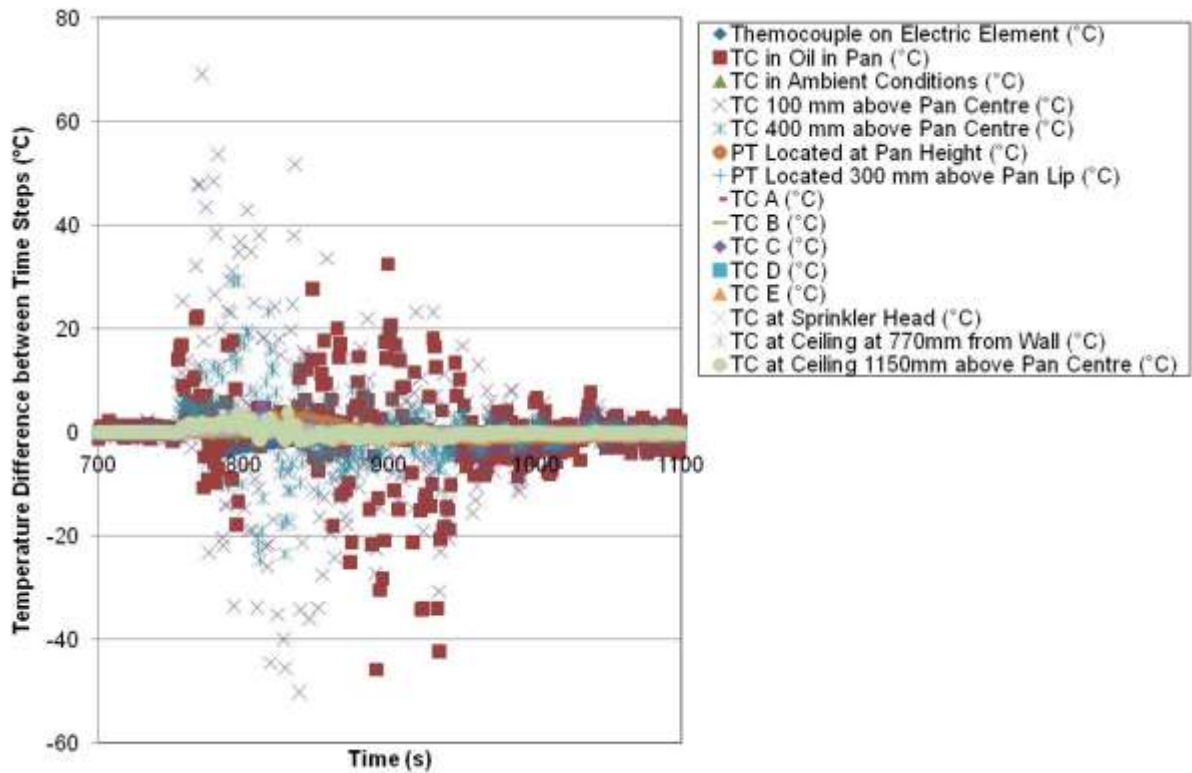


Figure 211: Differences of each of the variable temperatures to between sequential time steps for Test 56.

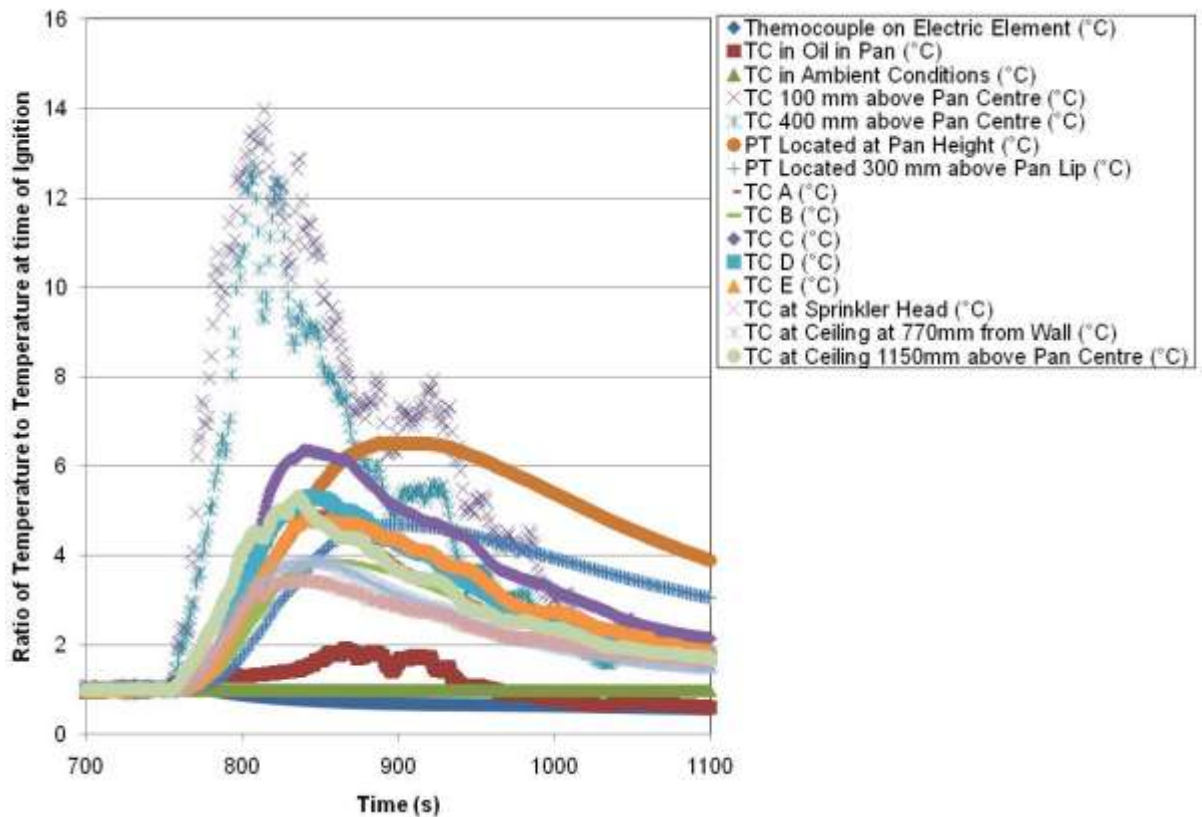


Figure 212: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 56.

## A.57 Test 57

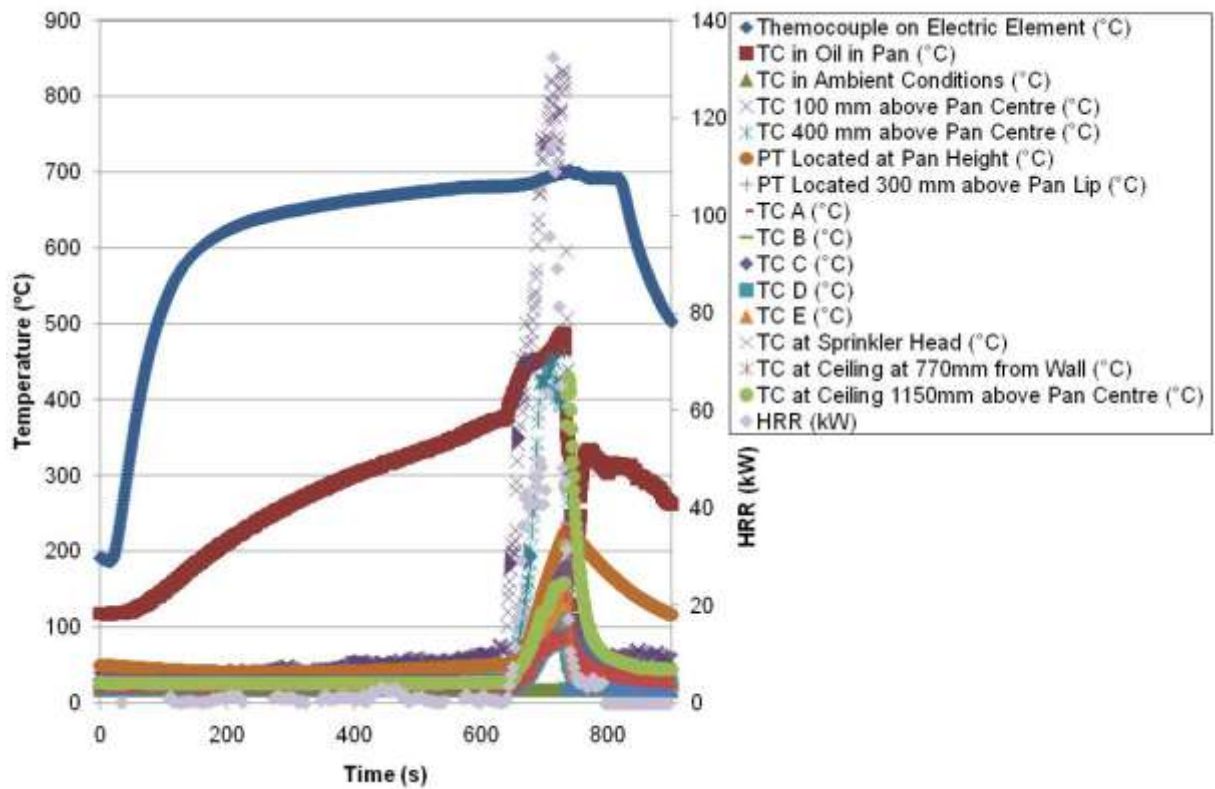


Figure 213: Measured temperatures of the thermocouples and plate thermometers for Test 57.

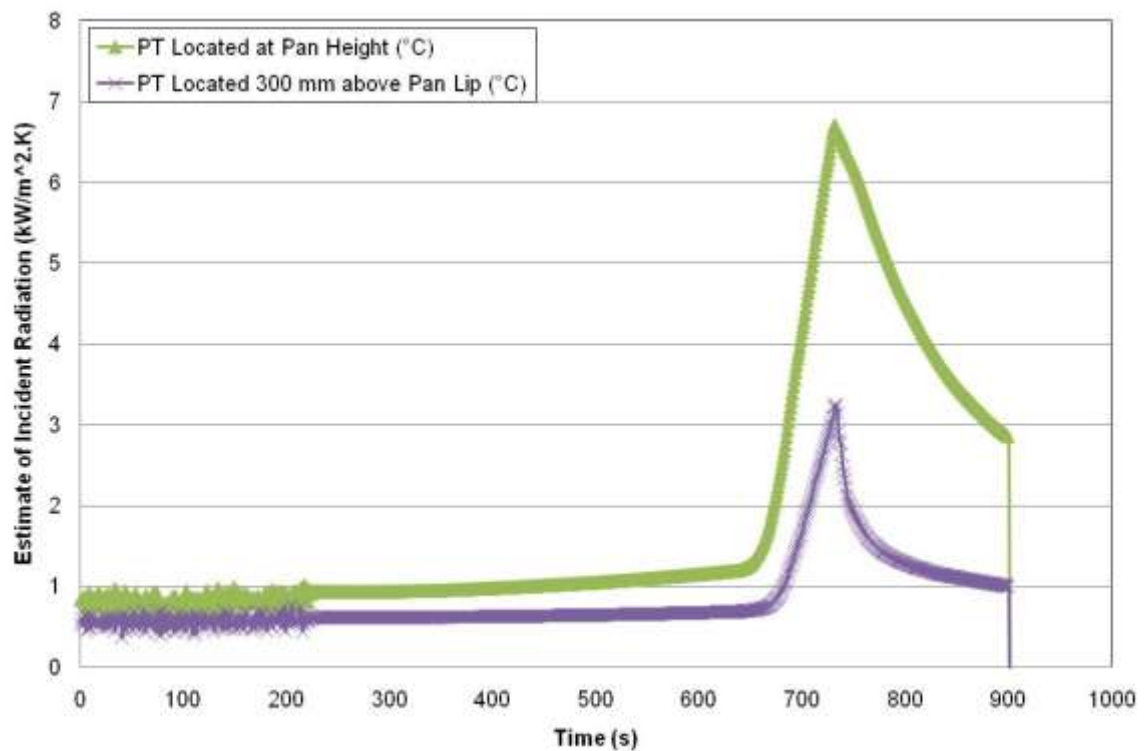


Figure 214: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 57.

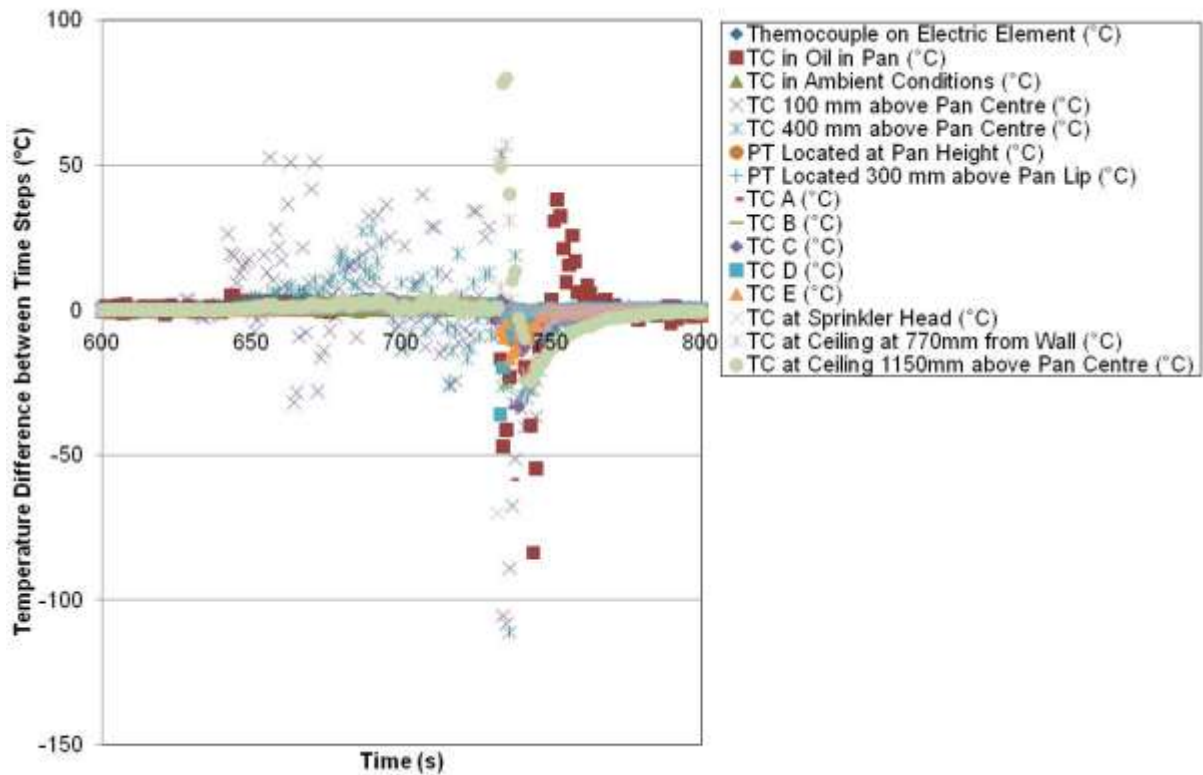


Figure 215: Differences of each of the variable temperatures to between sequential time steps for Test 57.

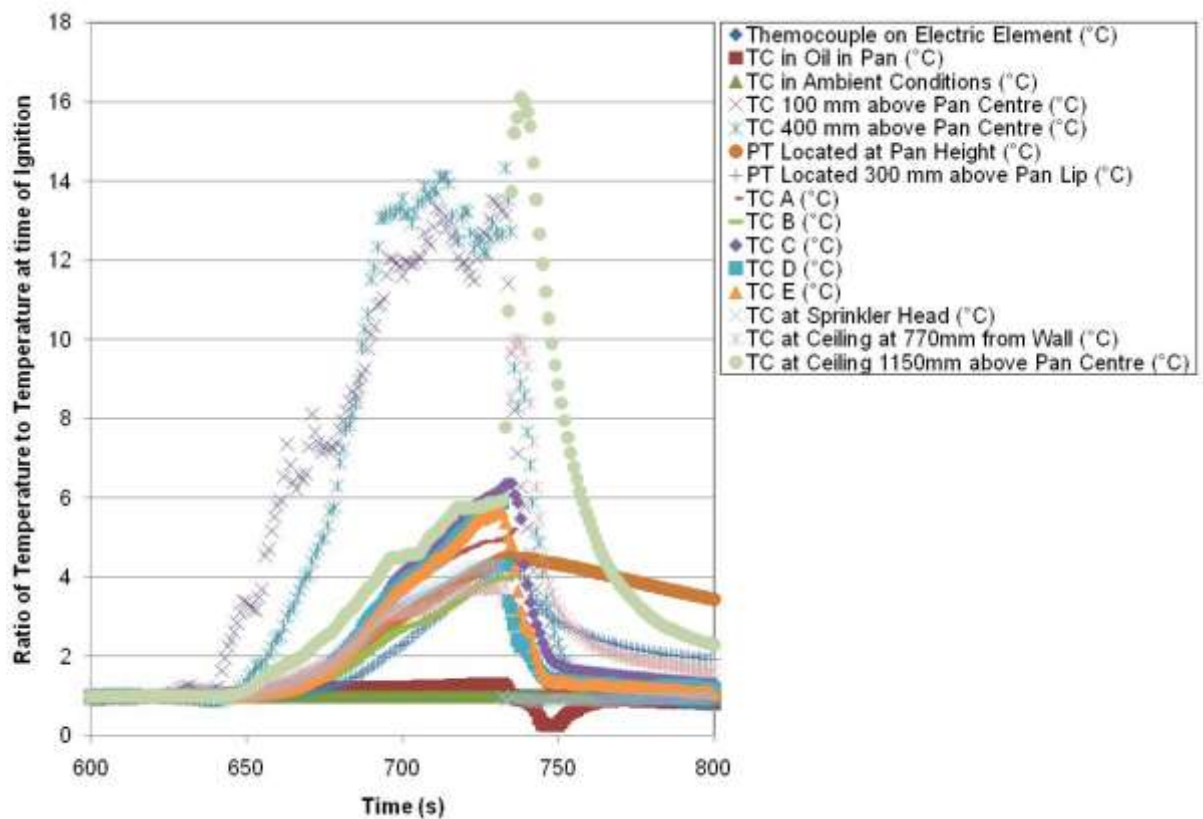


Figure 216: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 57.



## A.58 Test 58

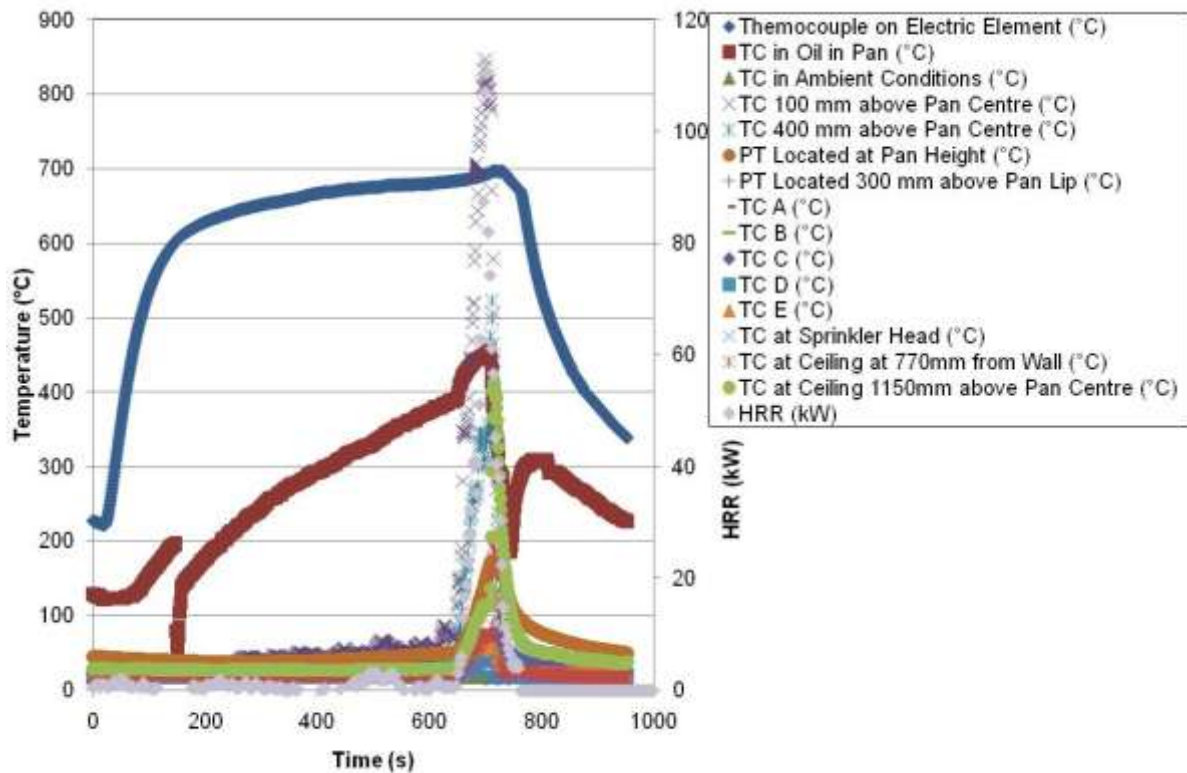


Figure 217: Measured temperatures of the thermocouples and plate thermometers for Test 58.

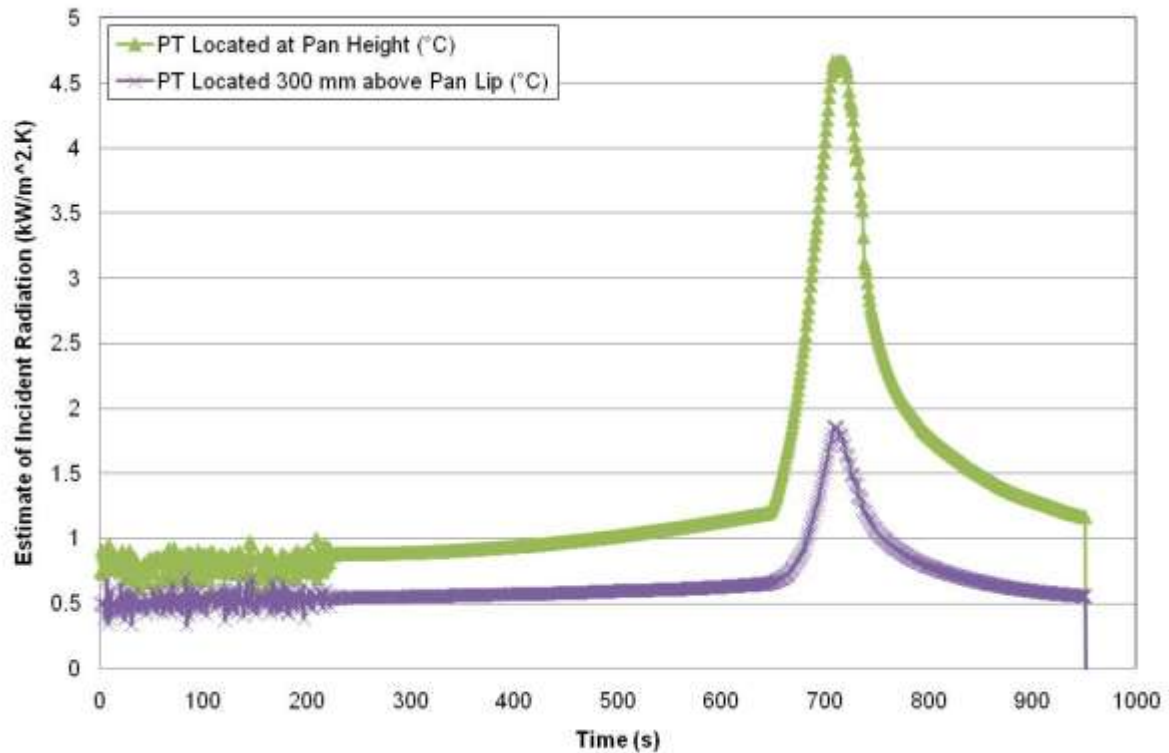


Figure 218: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 58.

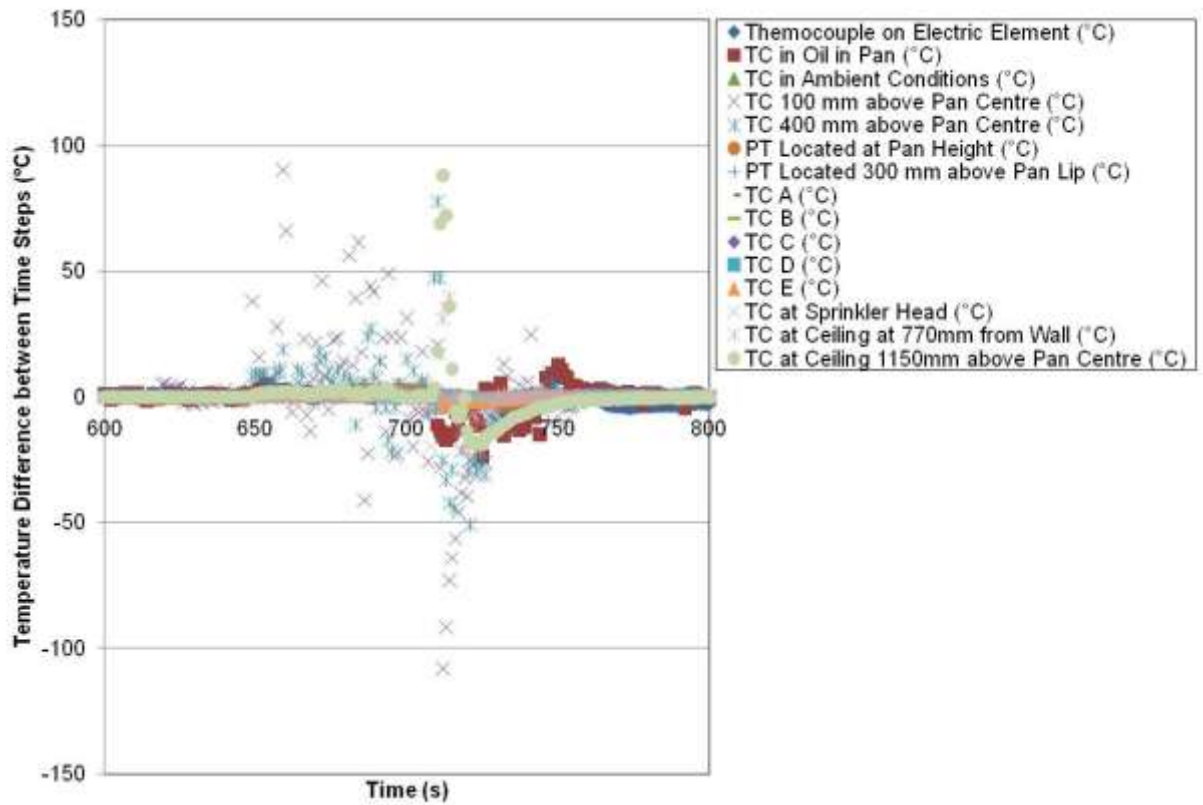


Figure 219: Differences of each of the variable temperatures to between sequential time steps for Test 58.

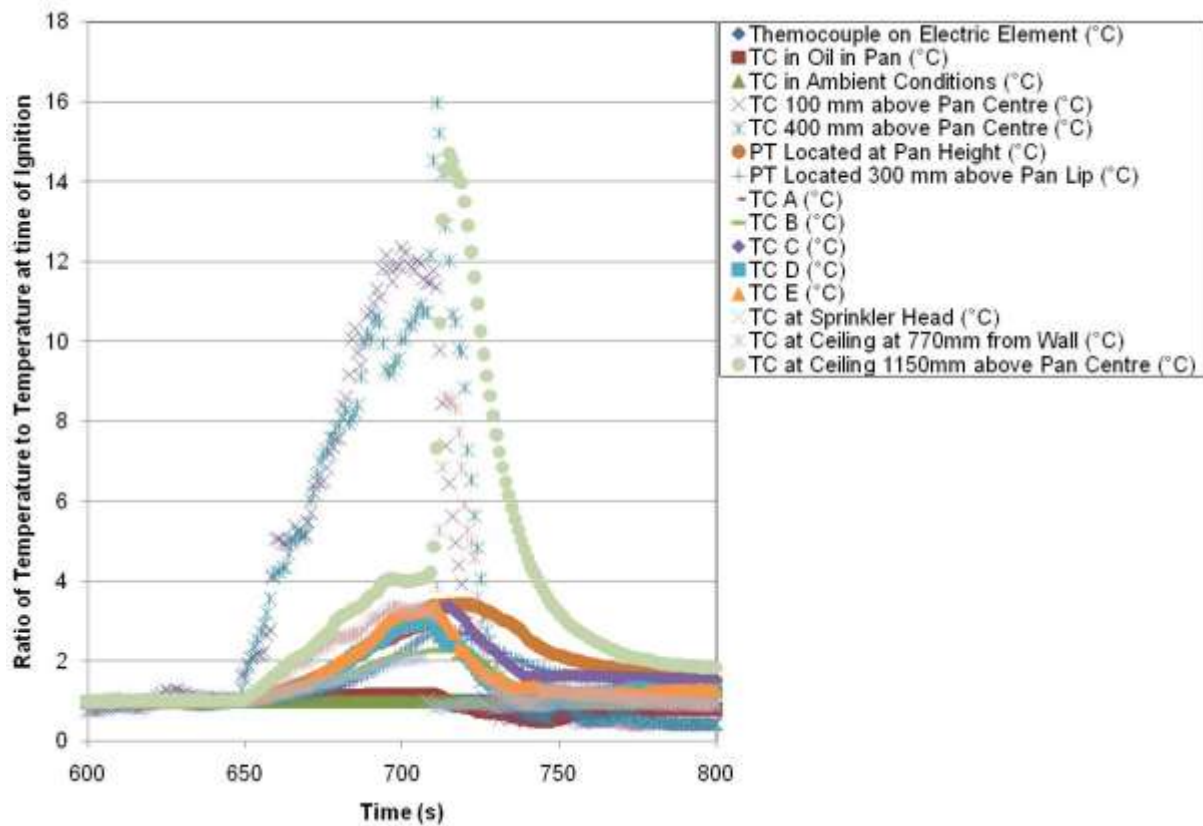


Figure 220: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 58.

## A.59 Test 59

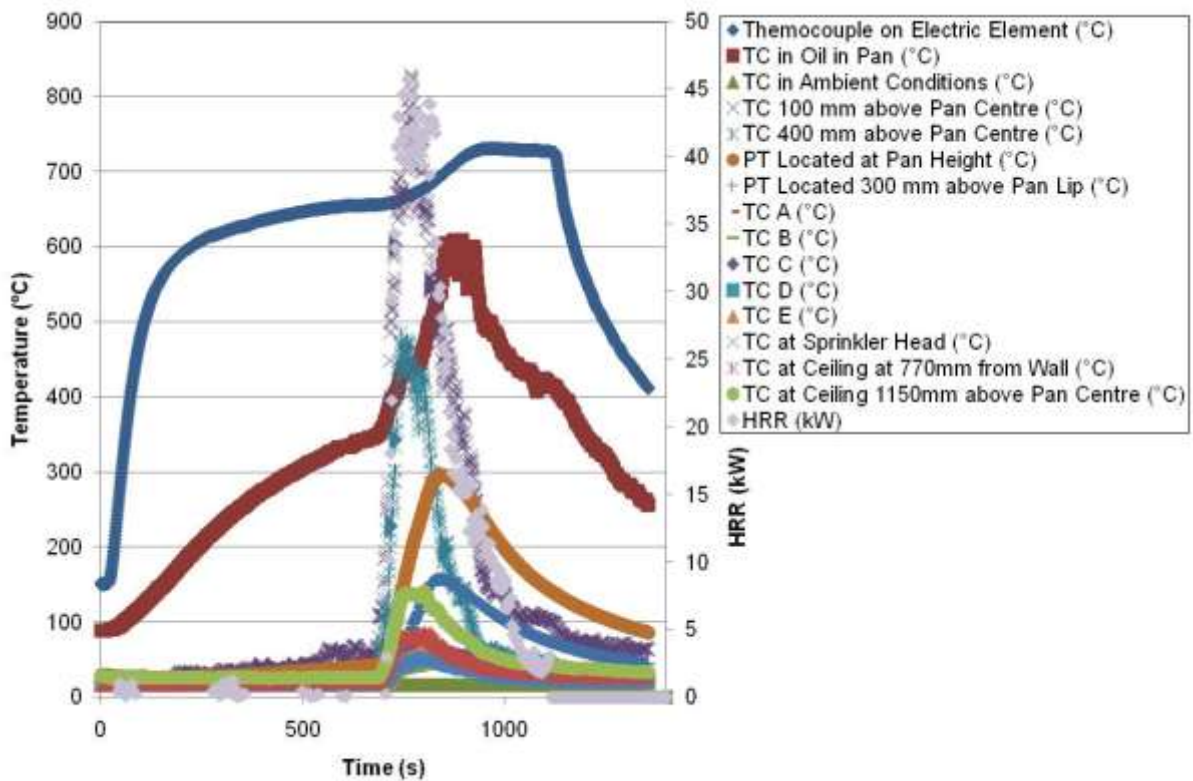


Figure 221: Measured temperatures of the thermocouples and plate thermometers for Test 59.

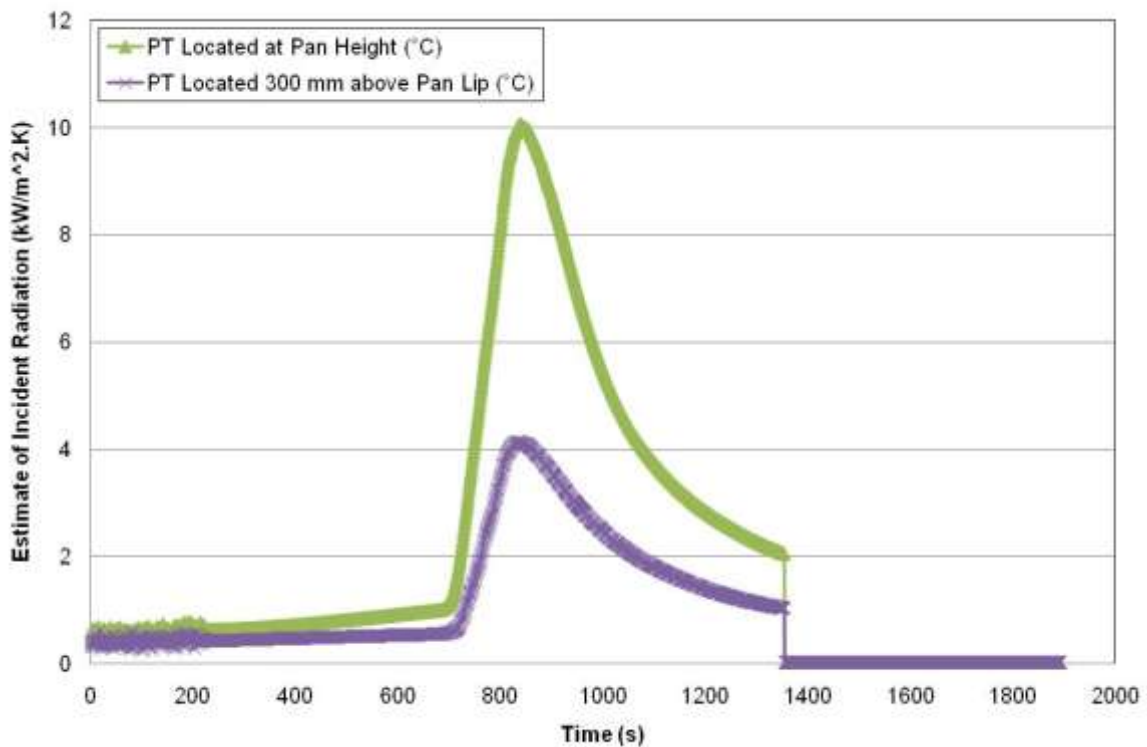


Figure 222: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 59.

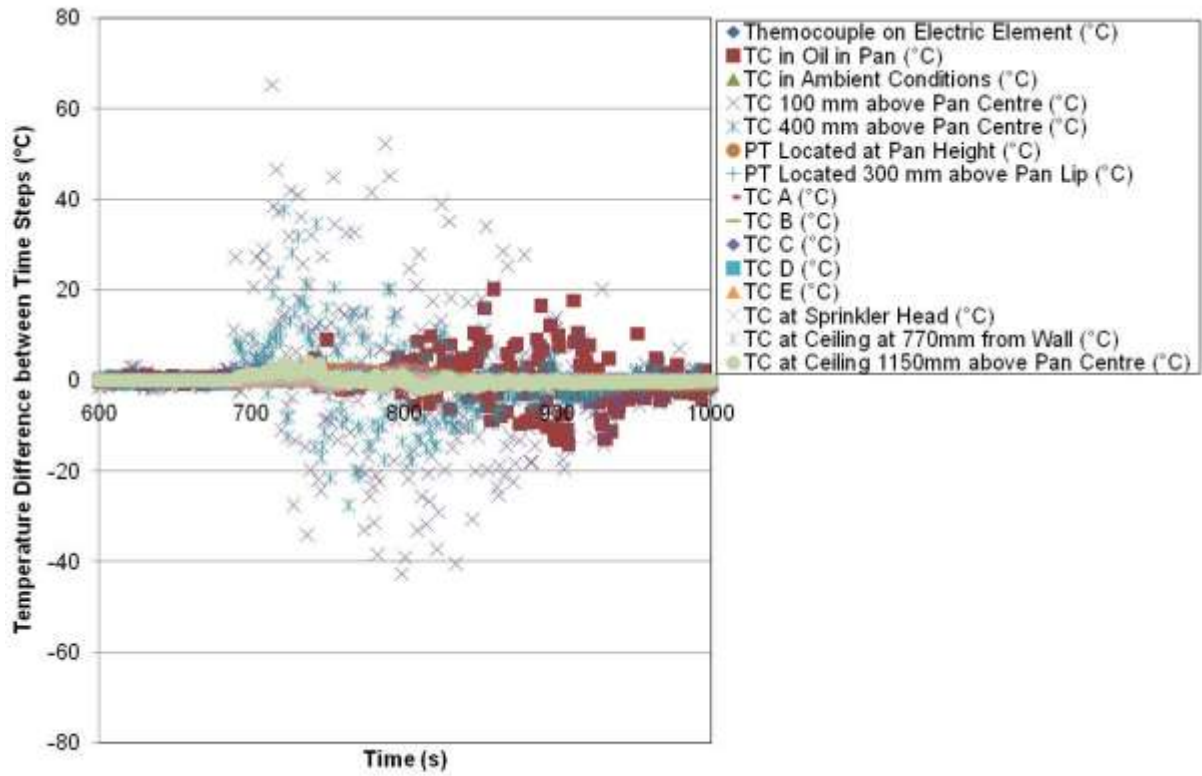


Figure 223: Differences of each of the variable temperatures to between sequential time steps for Test 59.

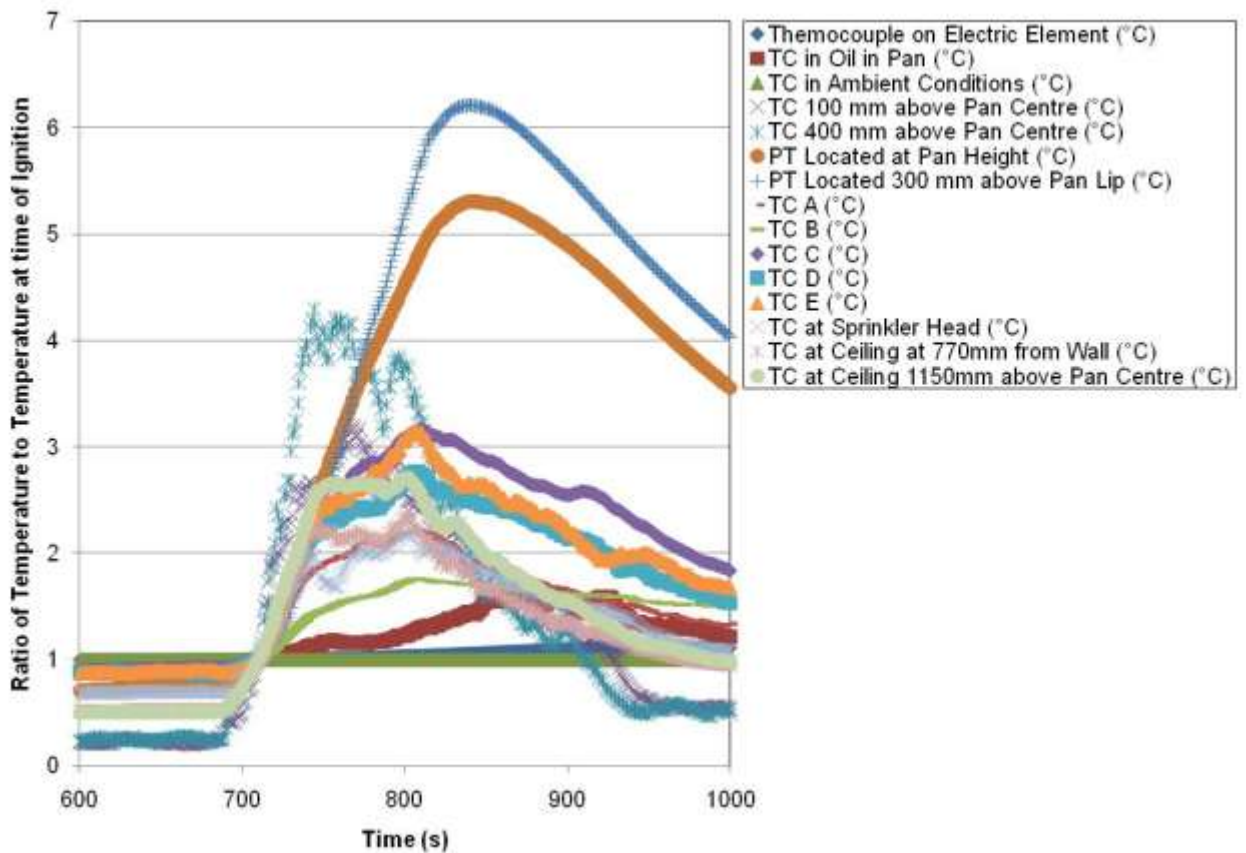


Figure 224: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 59.

## A.60 Test 60

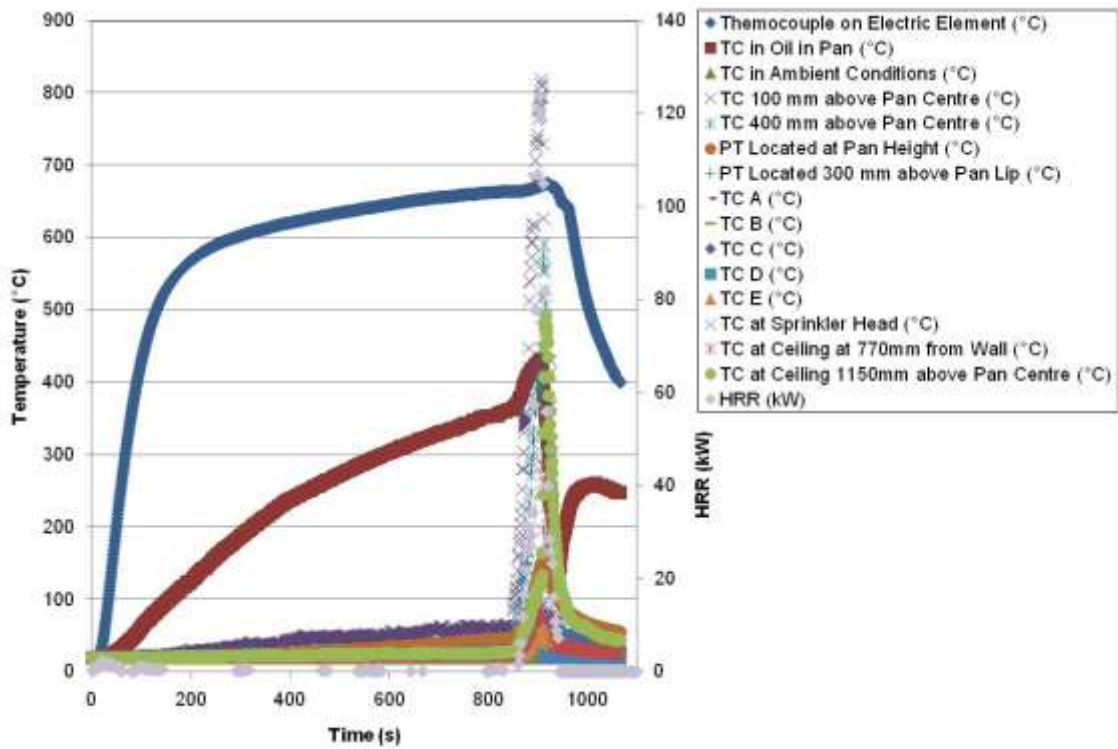


Figure 225: Measured temperatures of the thermocouples and plate thermometers for Test 60.

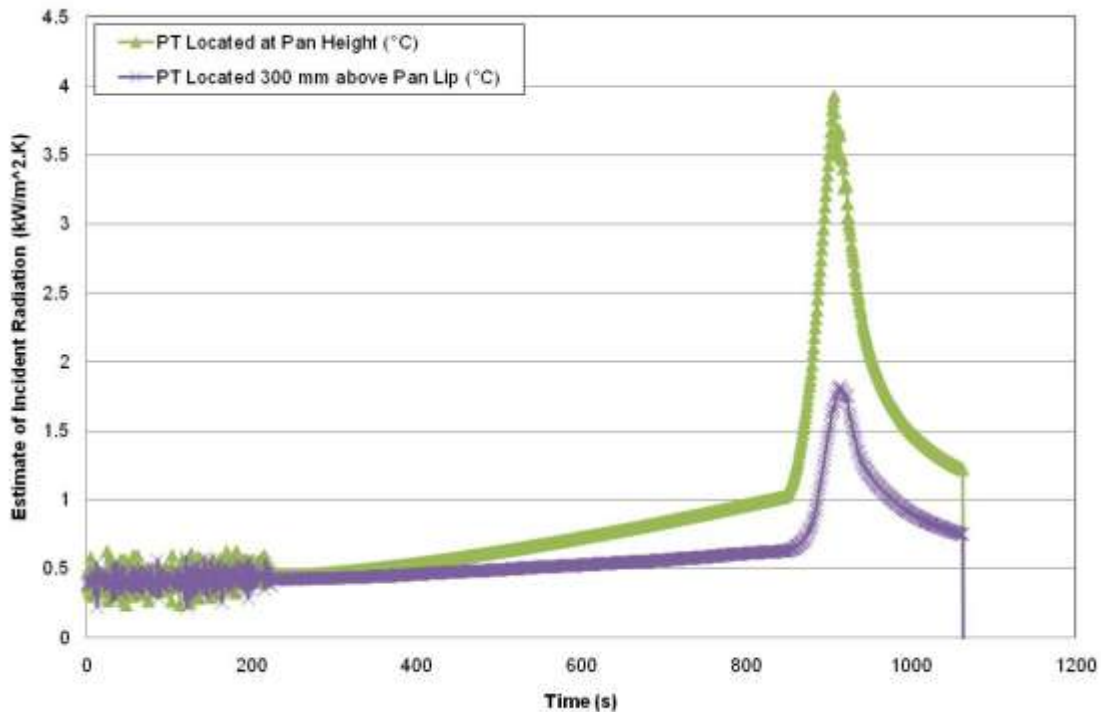


Figure 226: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 60.

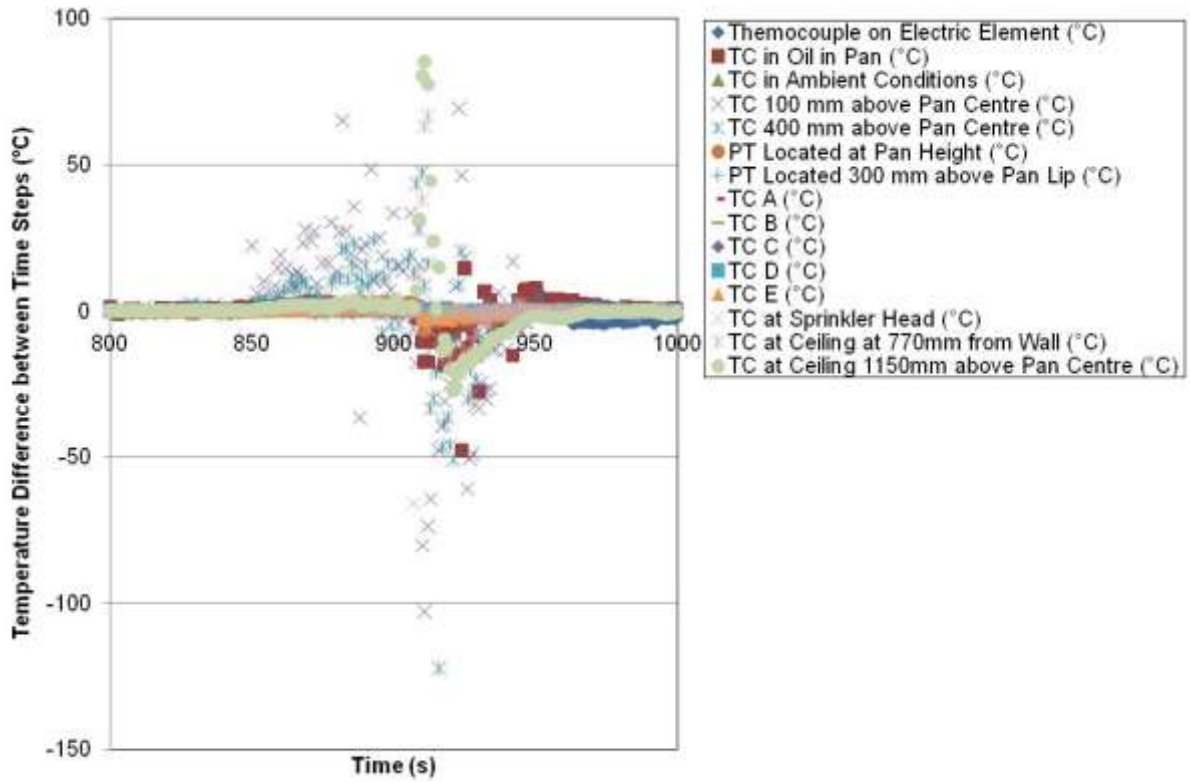


Figure 227: Differences of each of the variable temperatures to between sequential time steps for Test 60.

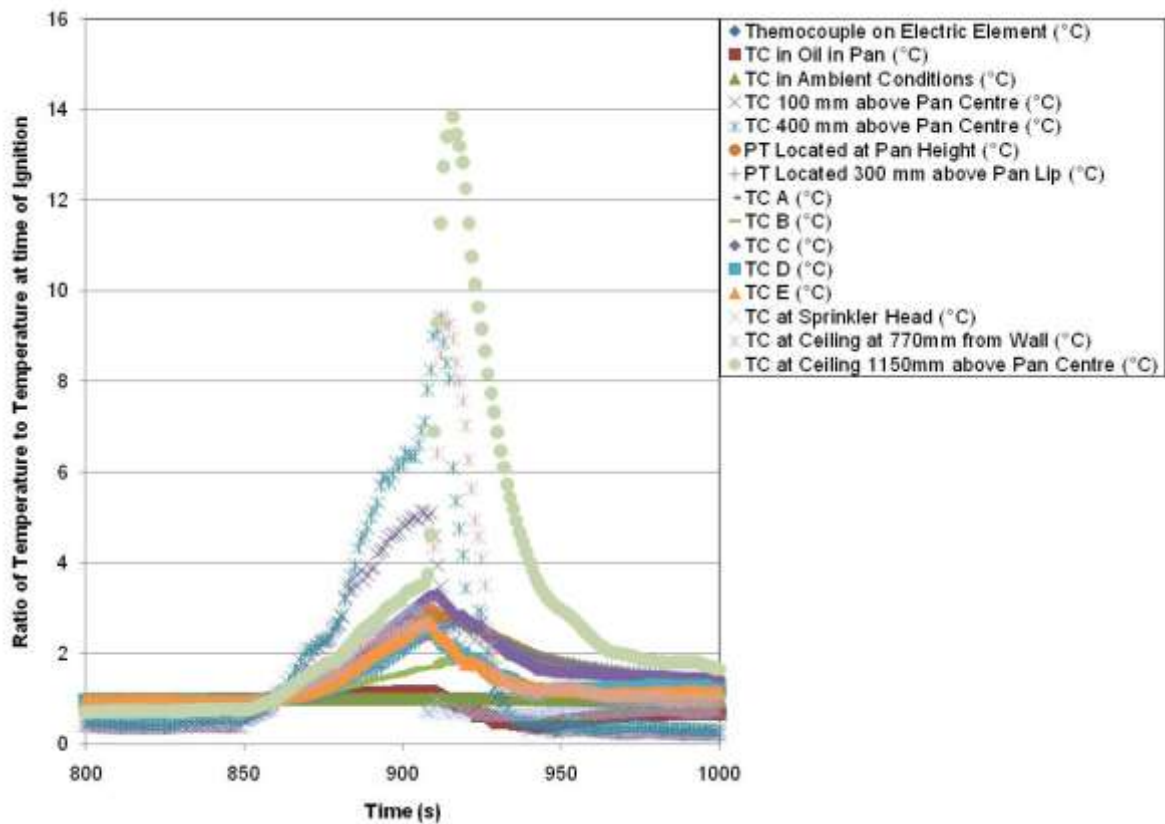


Figure 228: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 60.

## A.61 Test 61

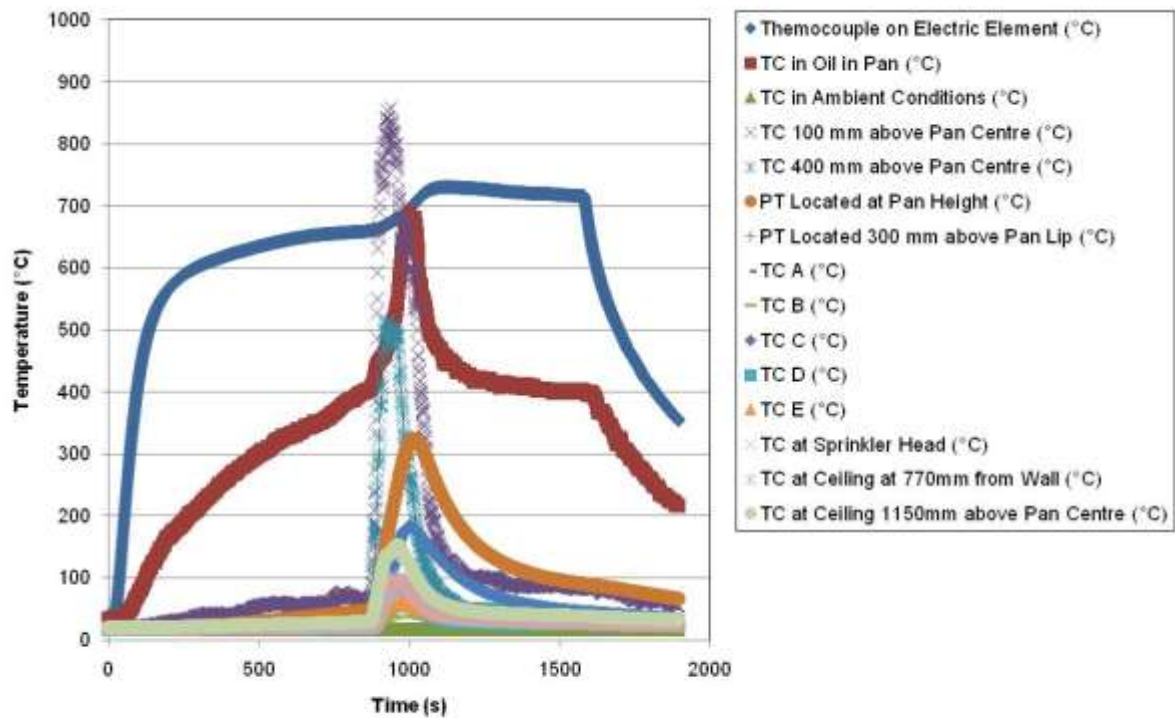


Figure 229: Measured temperatures of the thermocouples and plate thermometers for Test 61.

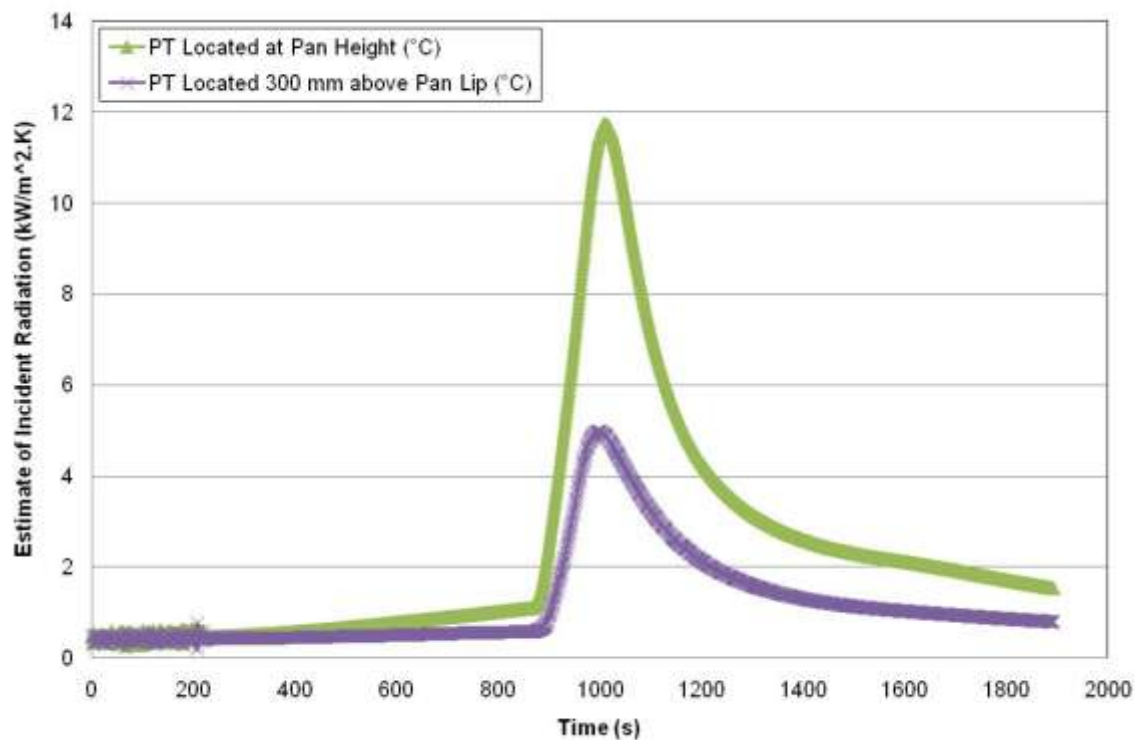


Figure 230: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 61.

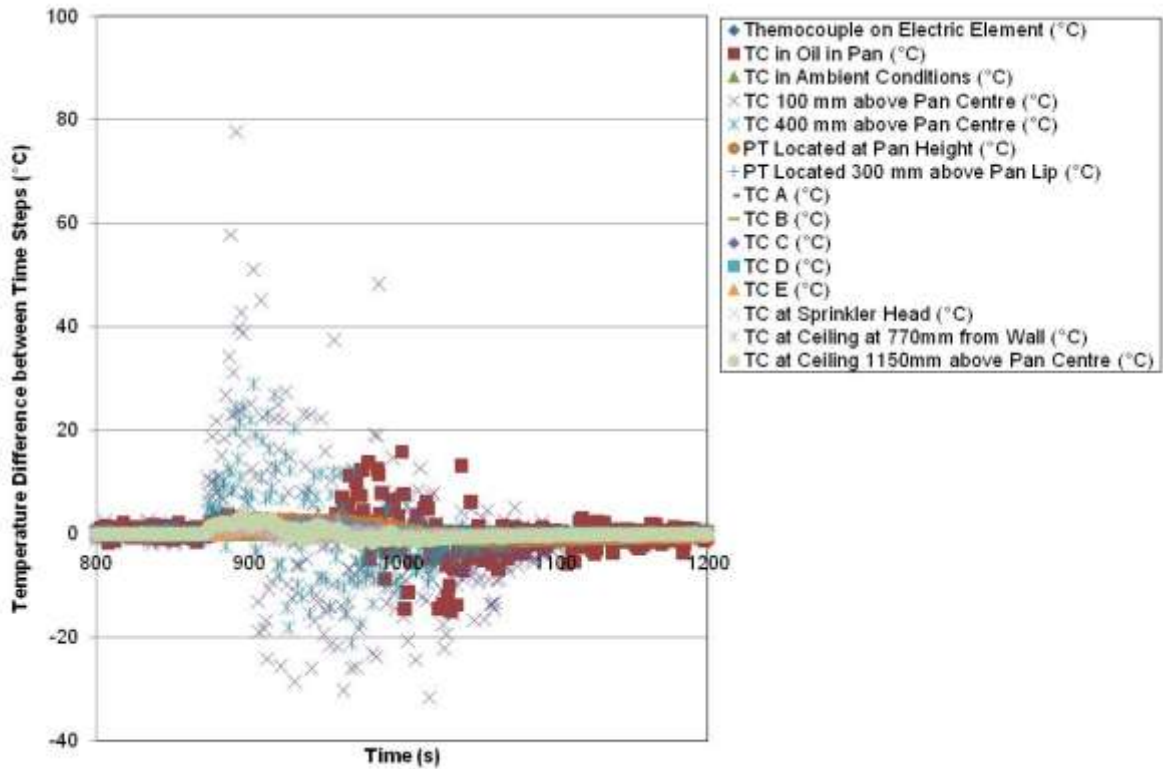


Figure 231: Differences of each of the variable temperatures to between sequential time steps for Test 61.

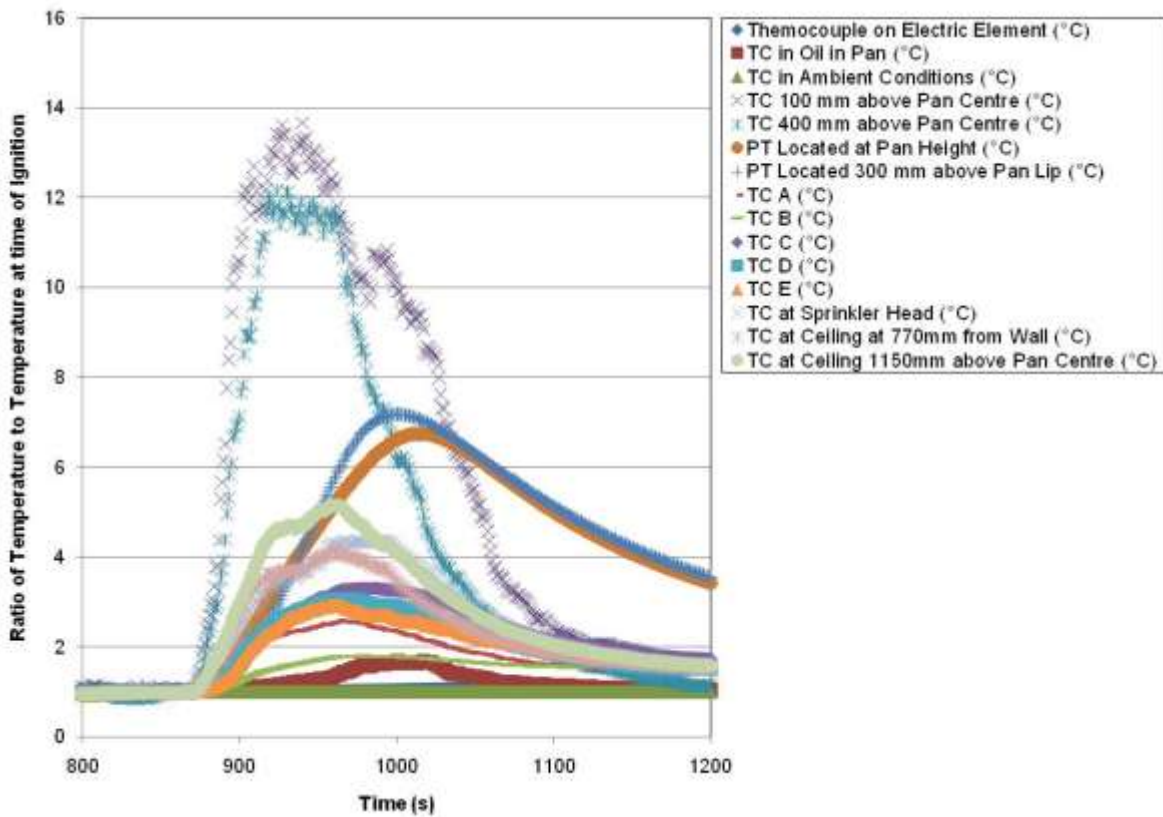


Figure 232: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 61.



## A.62 Test 62

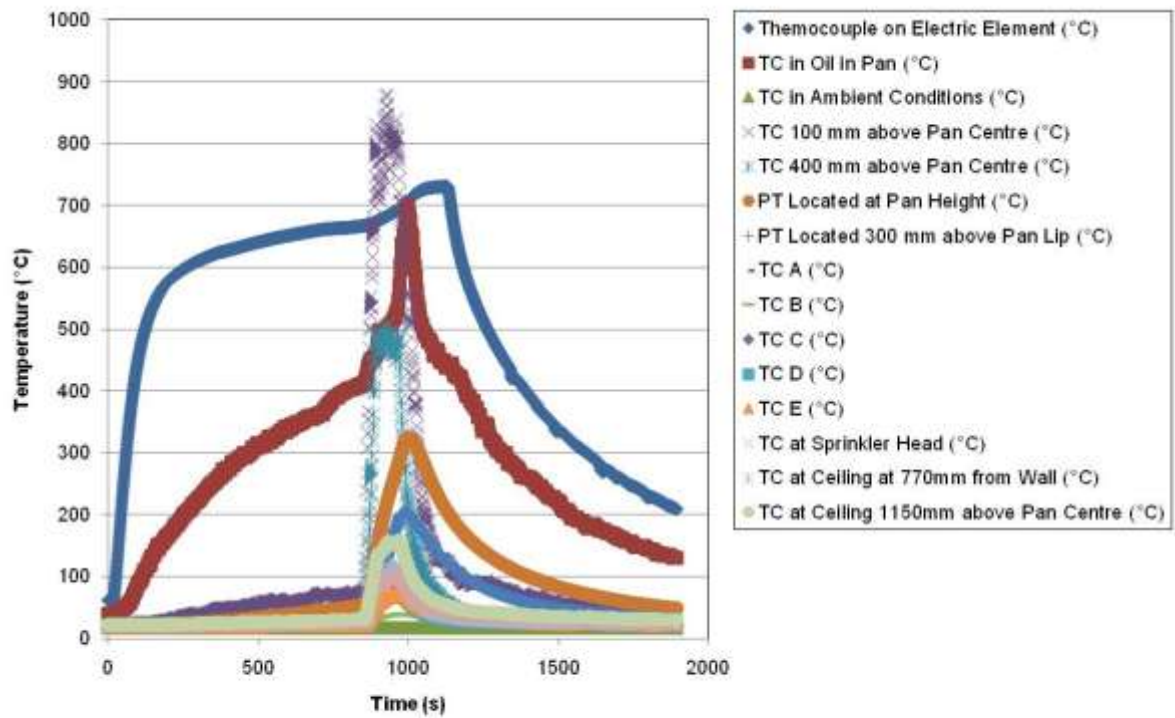


Figure 233: Measured temperatures of the thermocouples and plate thermometers for Test 62.

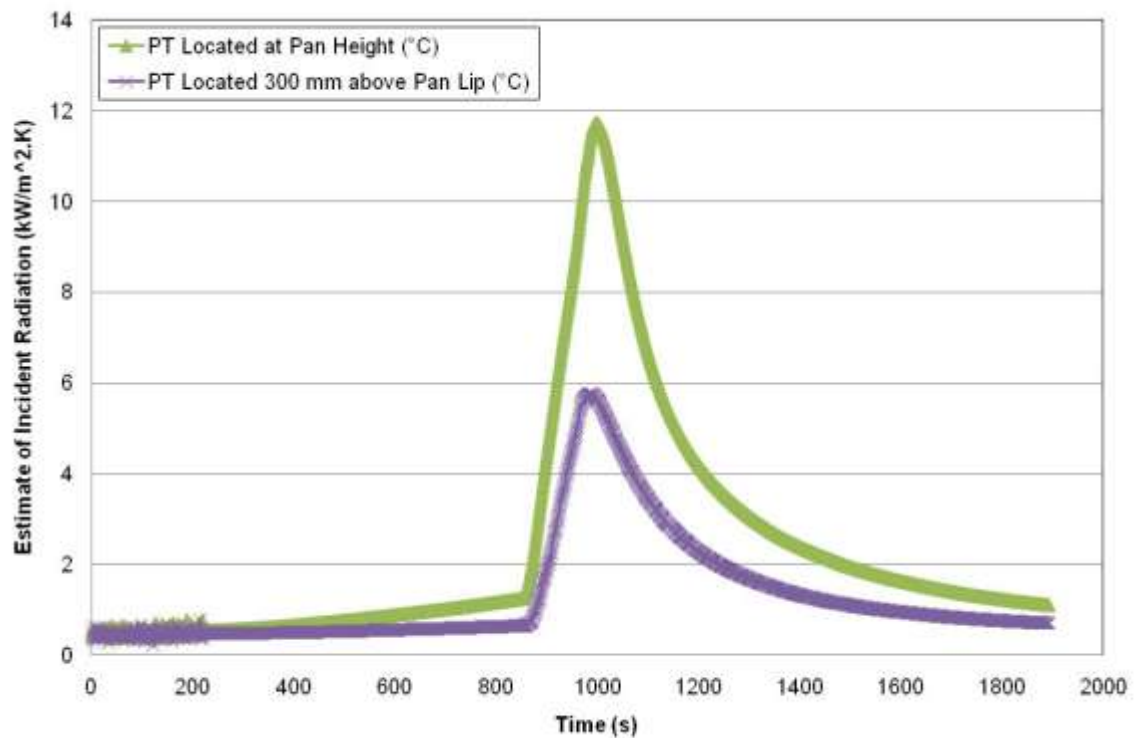


Figure 234: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 62.

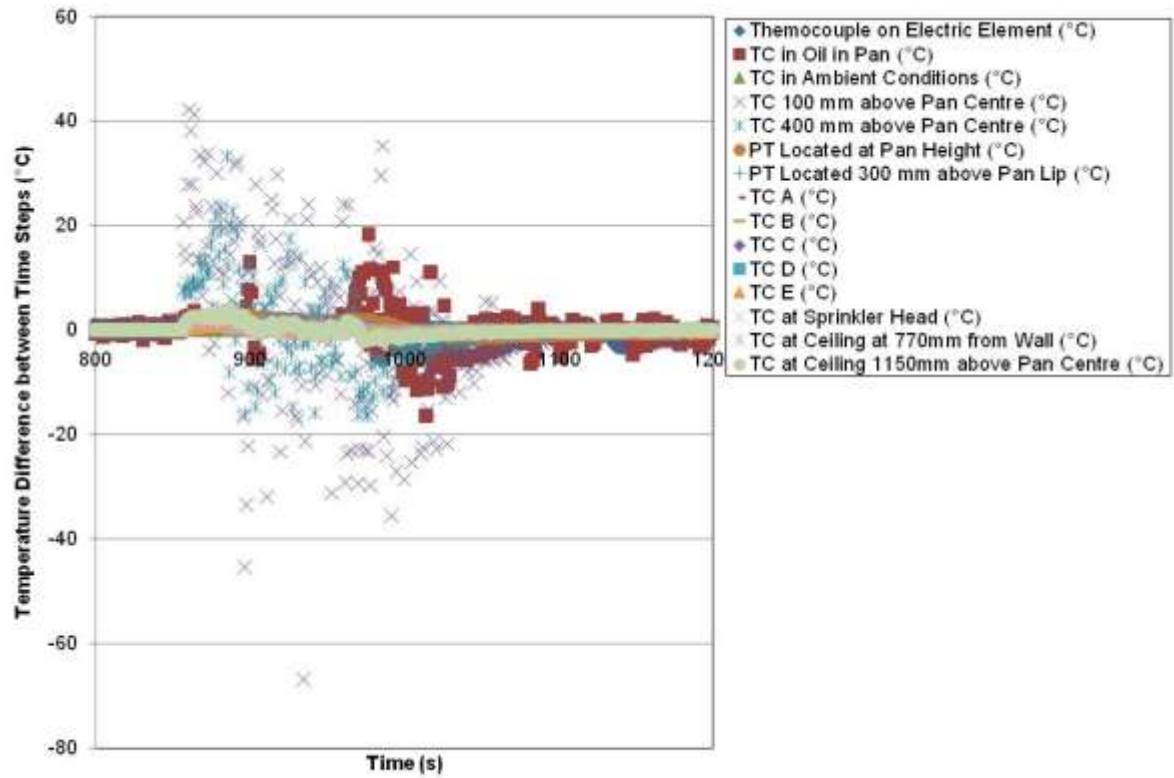


Figure 235: Differences of each of the variable temperatures to between sequential time steps for Test 62.

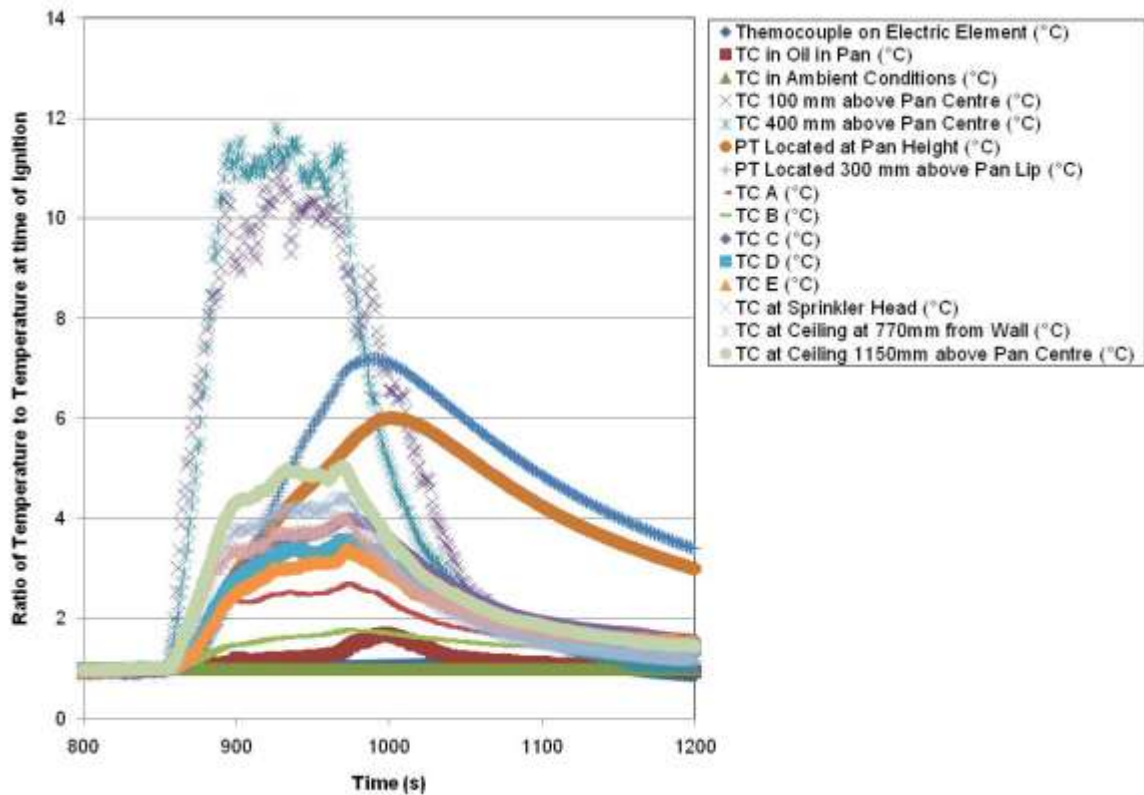


Figure 236: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 62.

## A.63 Test 63

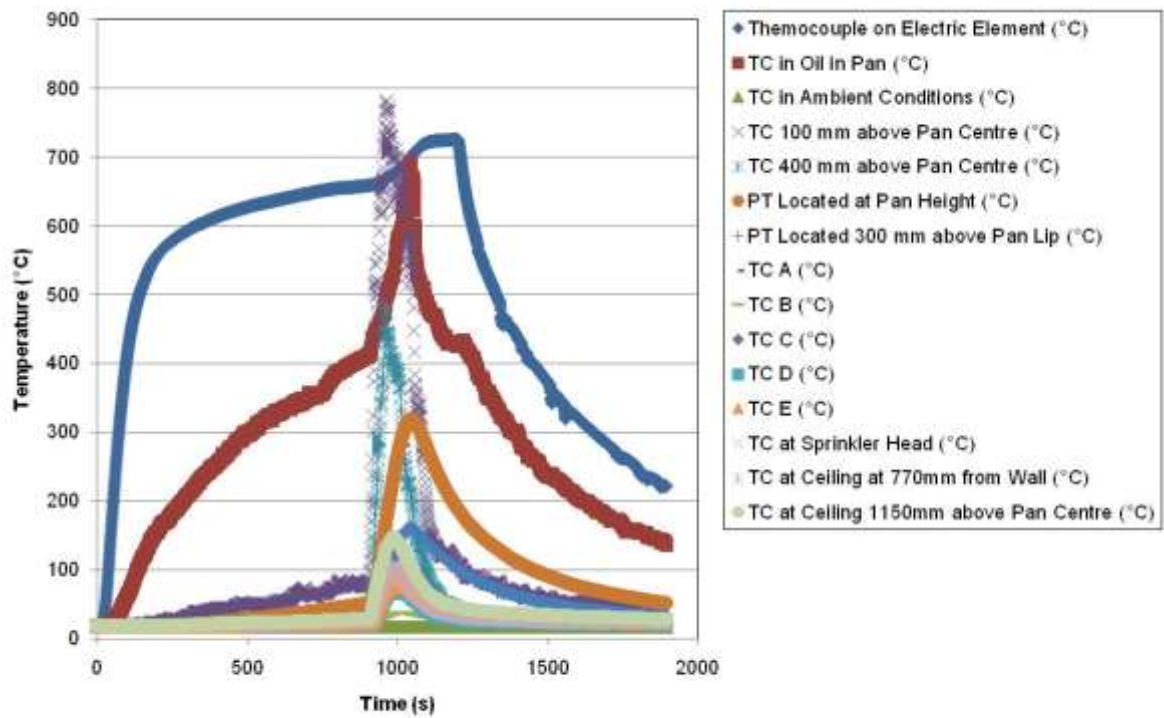


Figure 237: Measured temperatures of the thermocouples and plate thermometers for Test 63.

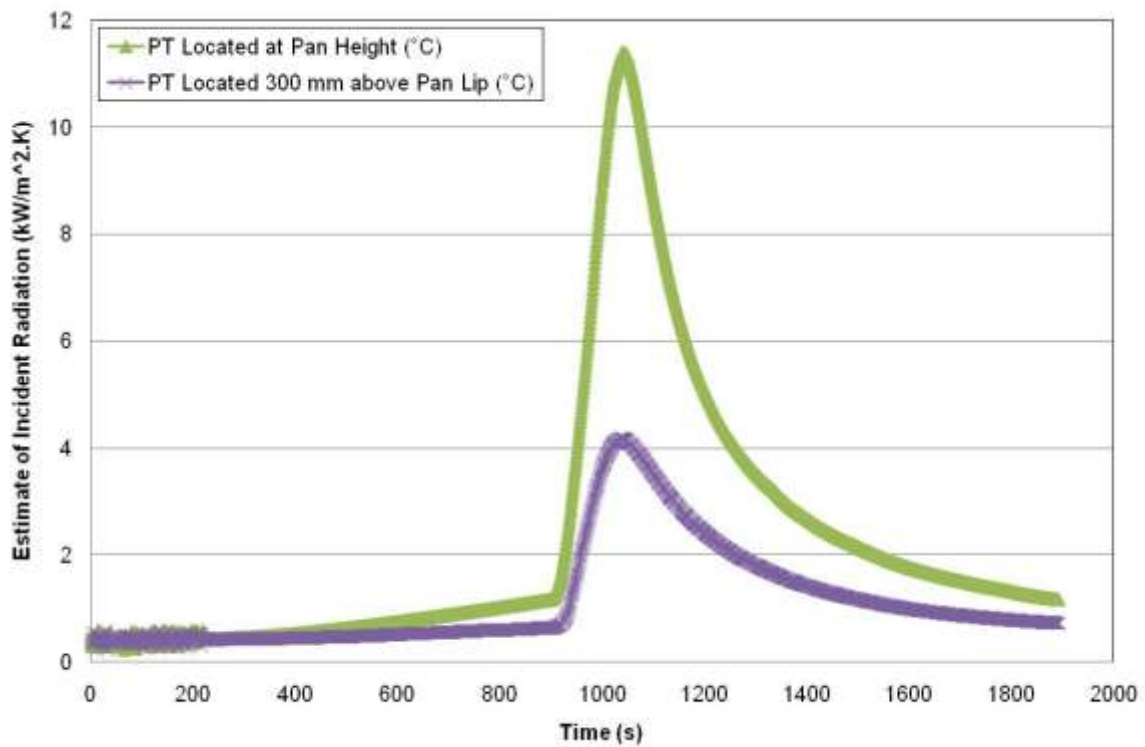


Figure 238: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 63.

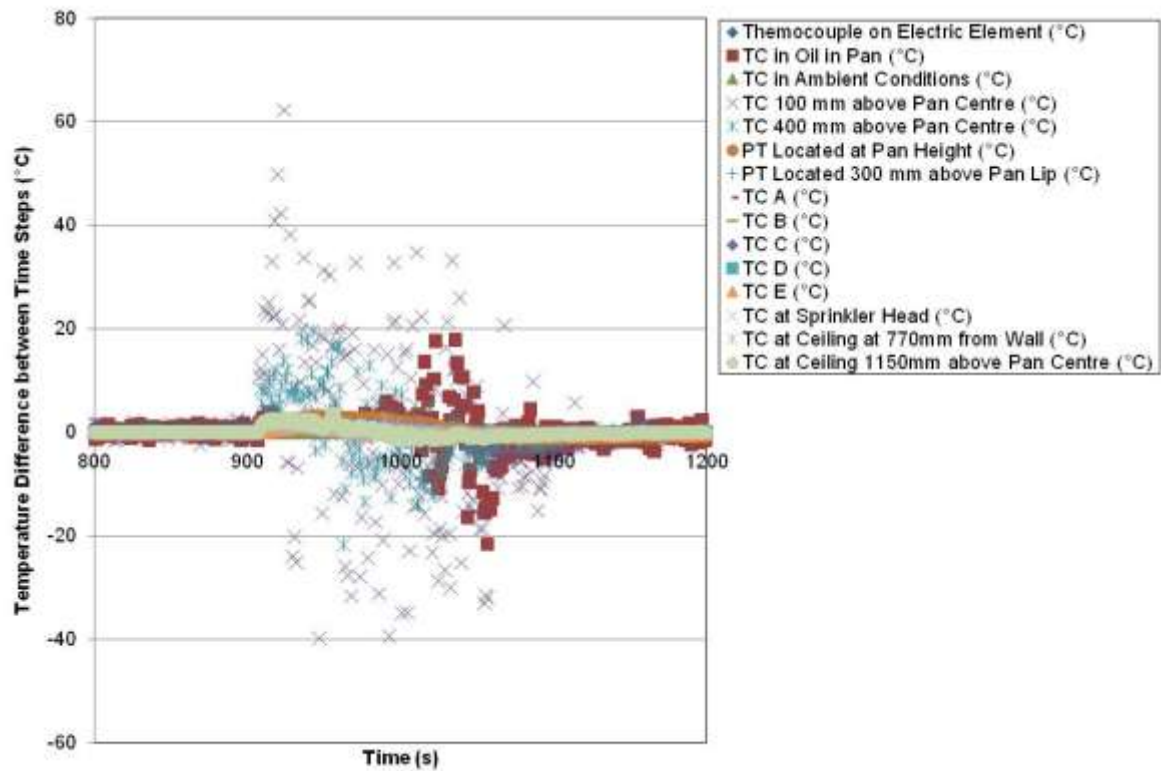


Figure 239: Differences of each of the variable temperatures to between sequential time steps for Test 63.

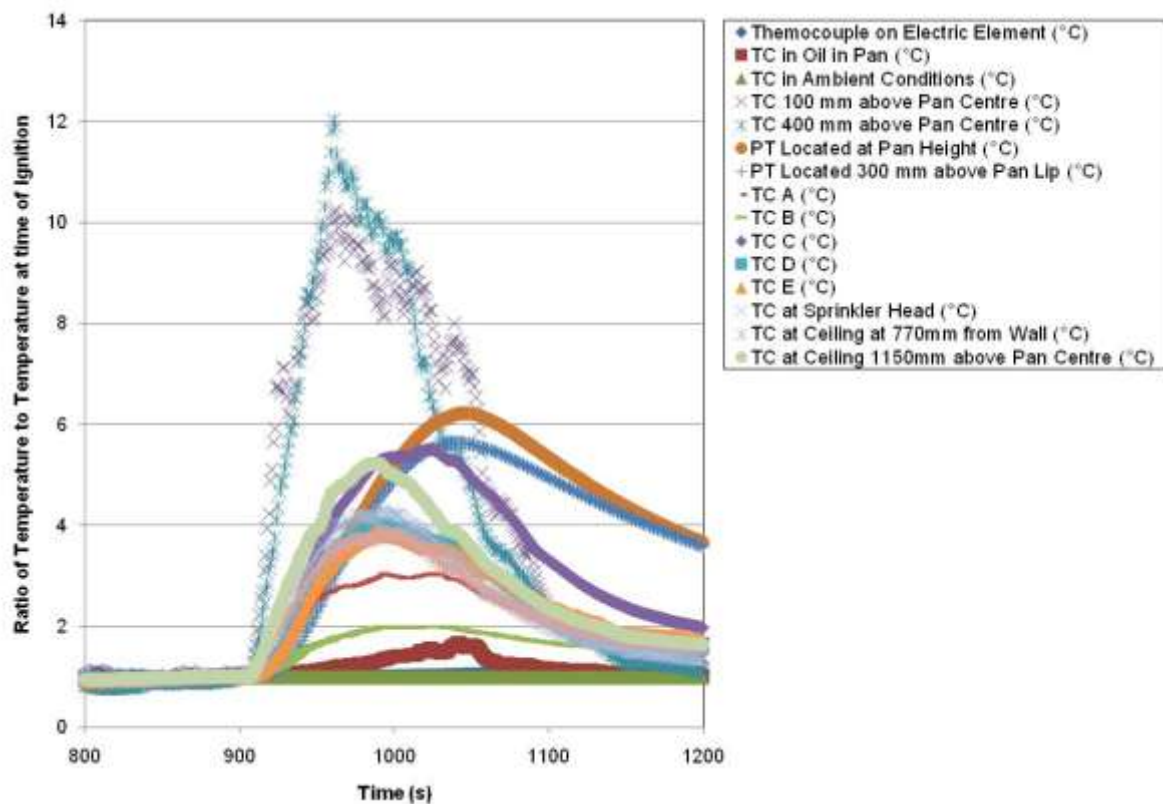


Figure 240: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 63.

## A.64 Test 64

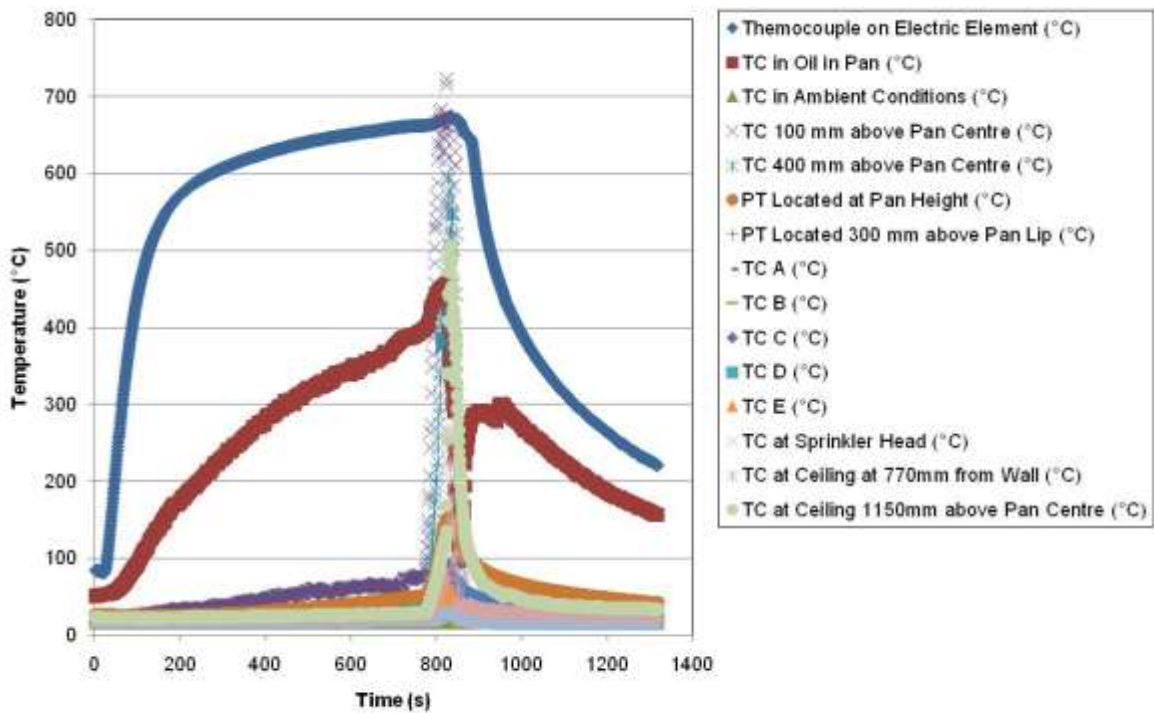


Figure 241: Measured temperatures of the thermocouples and plate thermometers for Test 64.

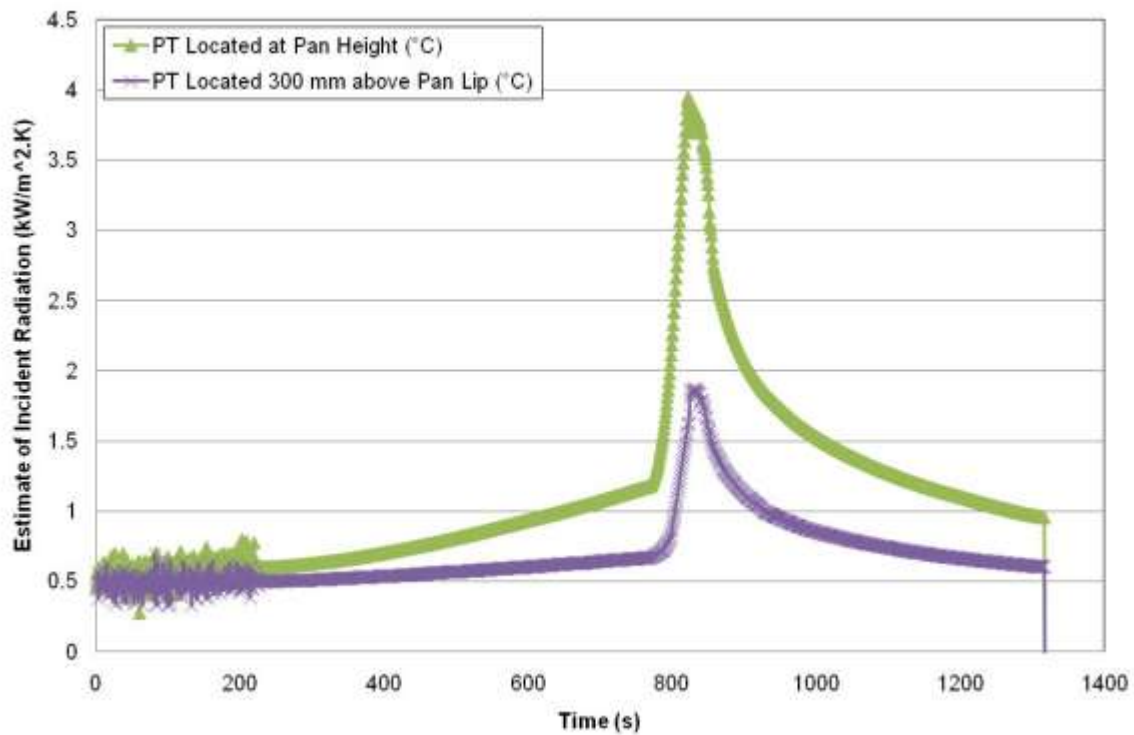


Figure 242: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 64.

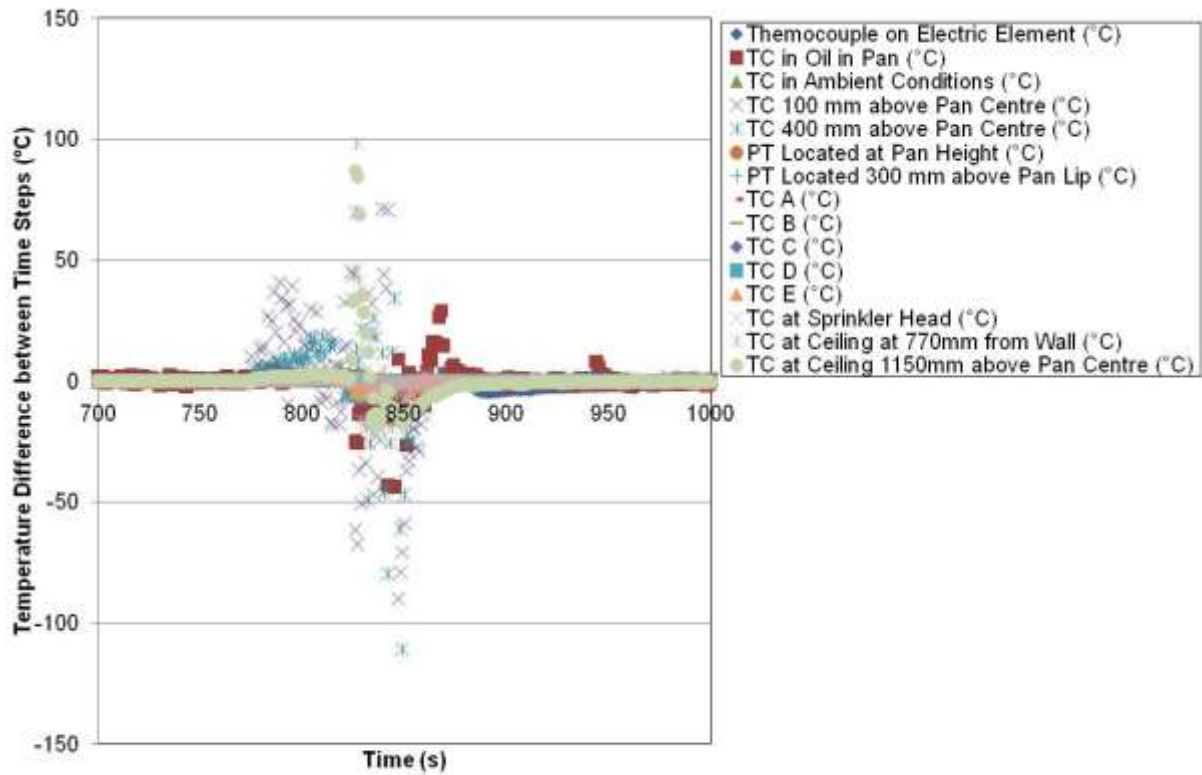


Figure 243: Differences of each of the variable temperatures to between sequential time steps for Test 64.

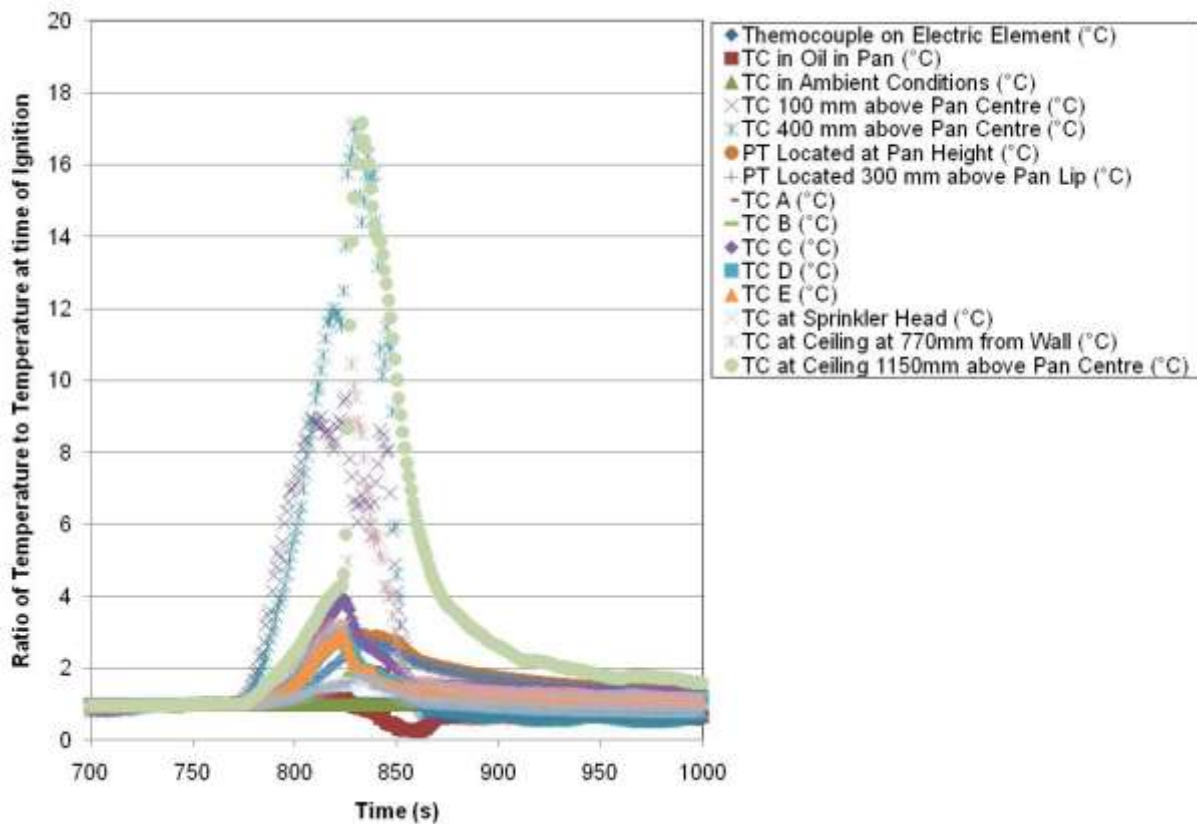


Figure 244: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 64.

## A.65 Test 65

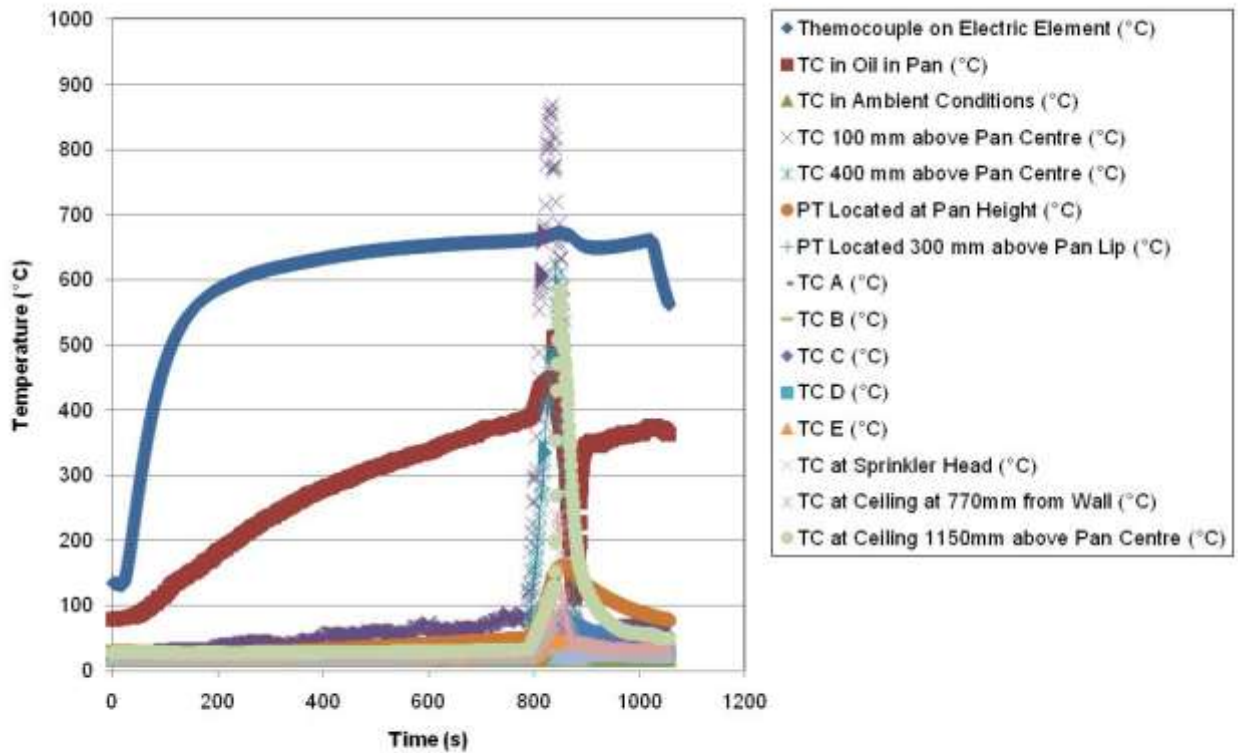


Figure 245: Measured temperatures of the thermocouples and plate thermometers for Test 65.

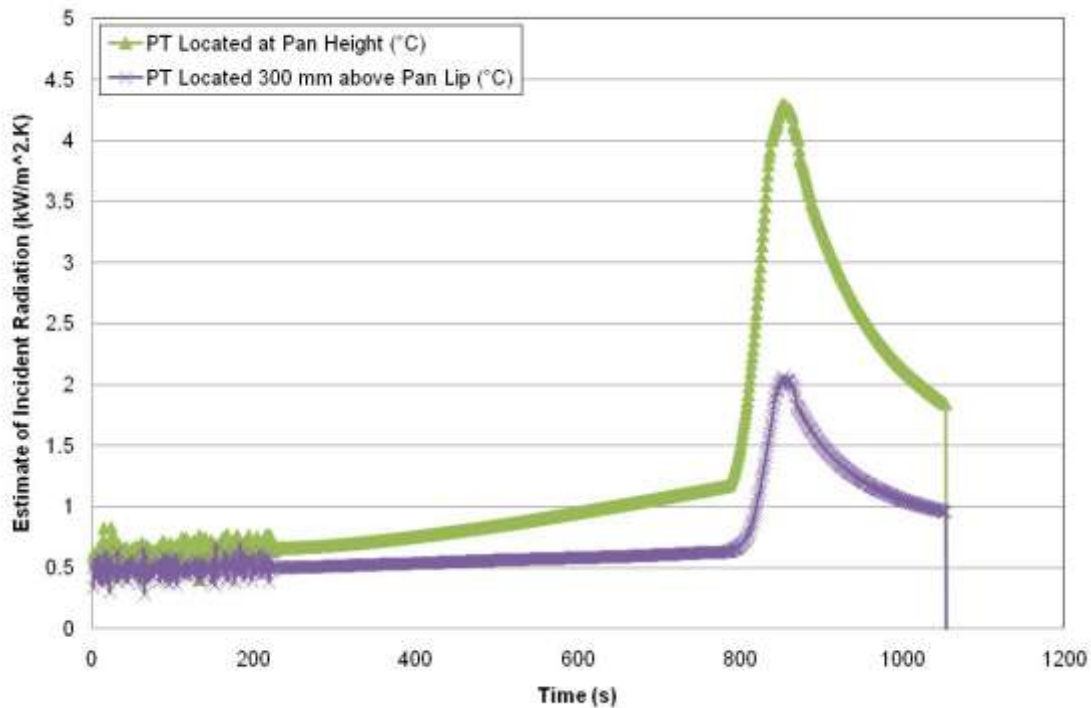


Figure 246: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 65.

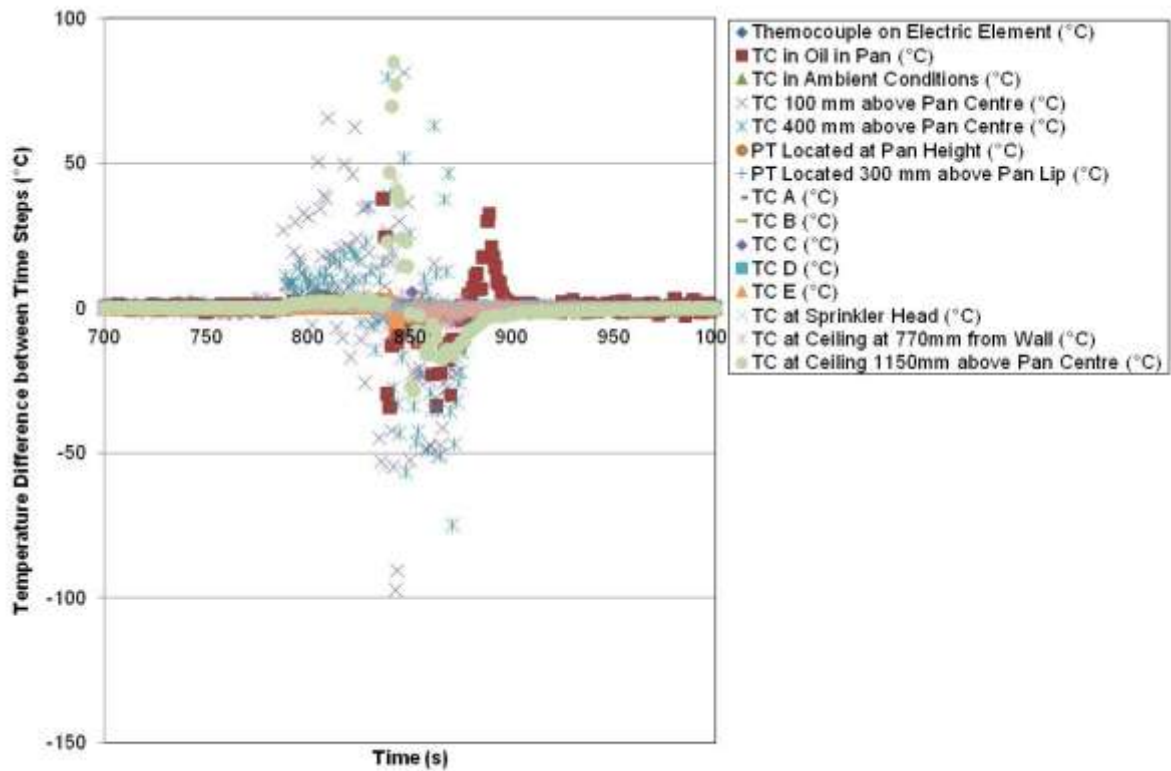


Figure 247: Differences of each of the variable temperatures to between sequential time steps for Test 65.

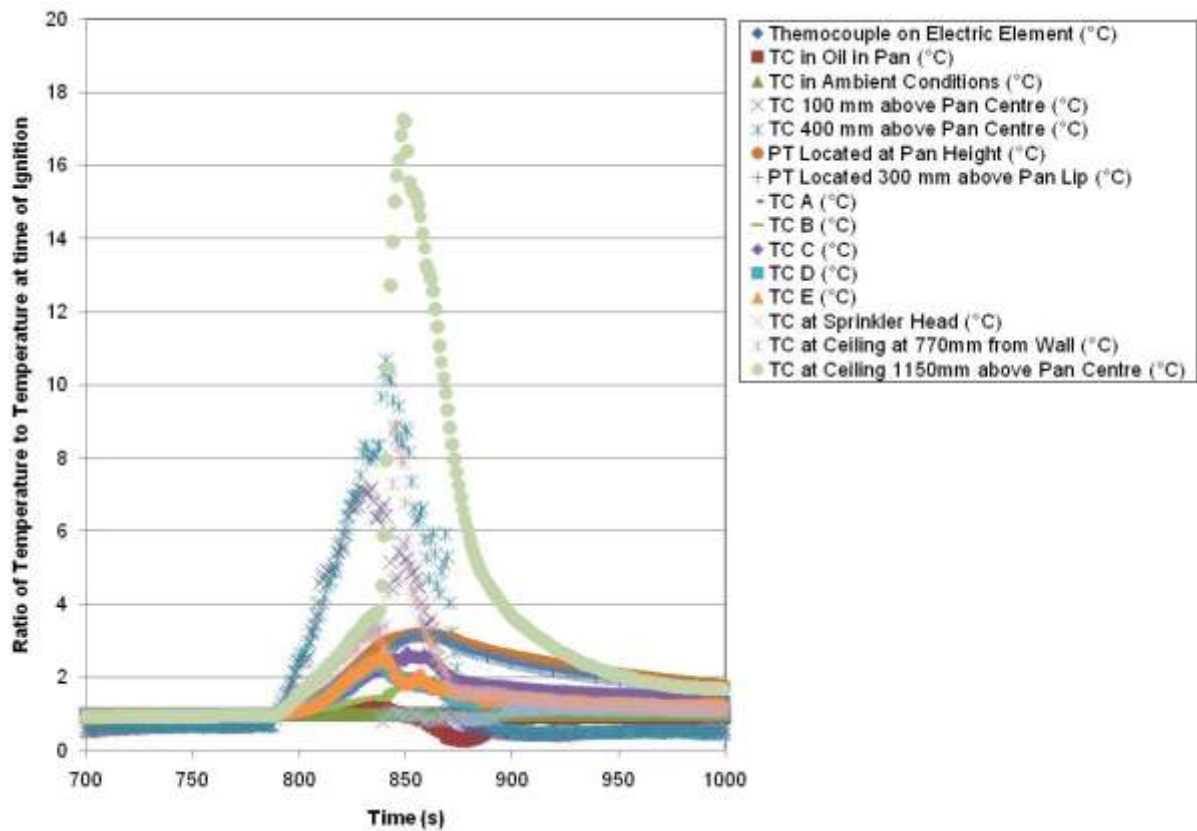


Figure 248: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 65.



## A.66 Test 66

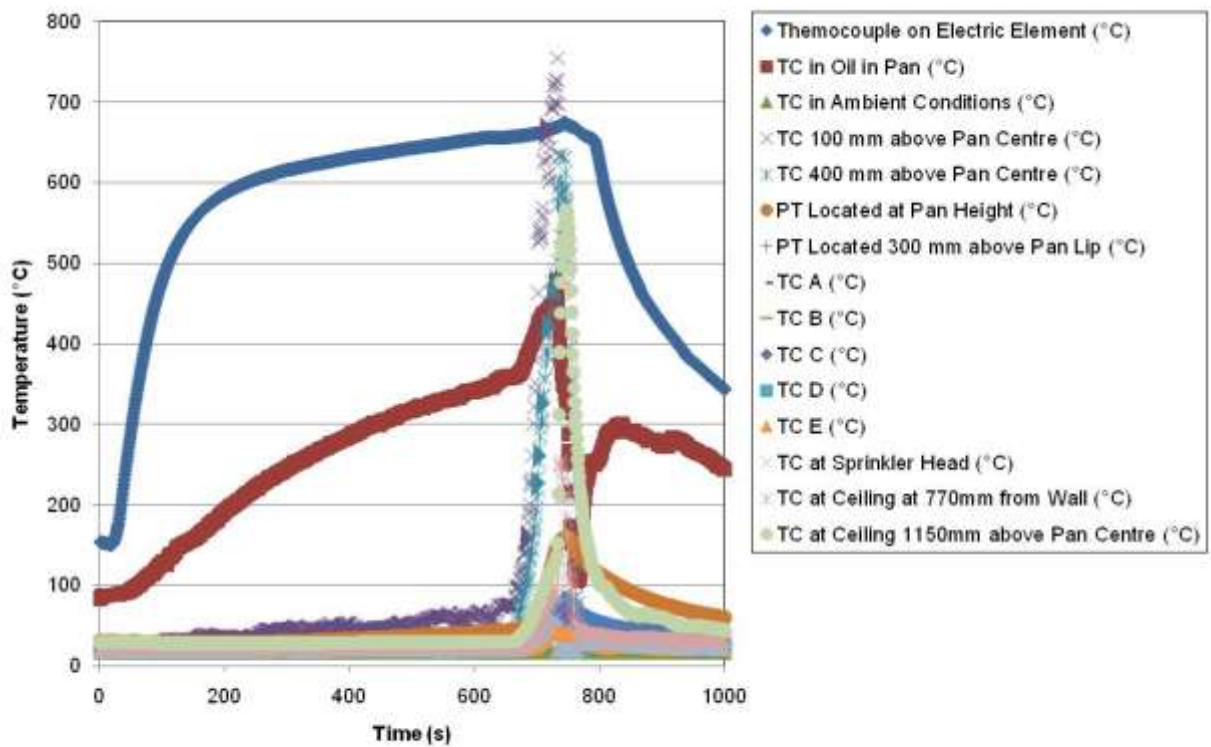


Figure 249: Measured temperatures of the thermocouples and plate thermometers for Test 66.

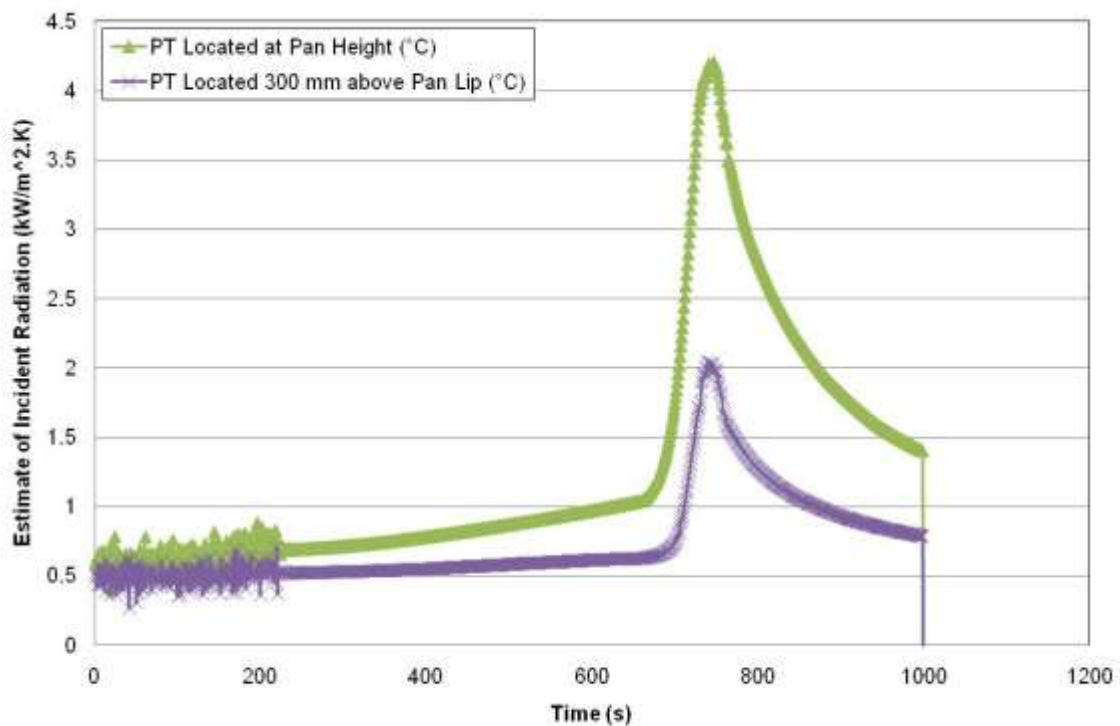


Figure 250: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 66.

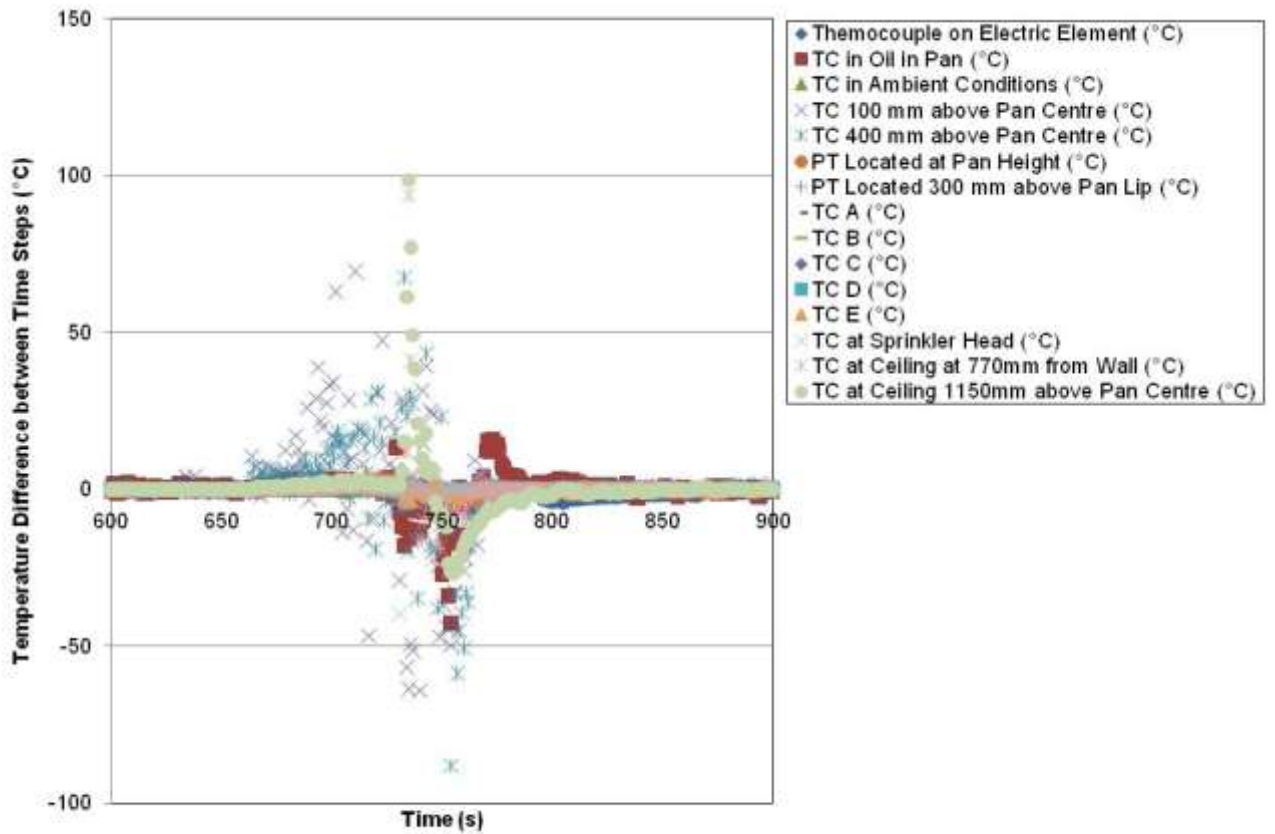


Figure 251: Differences of each of the variable temperatures to between sequential time steps for Test 66.

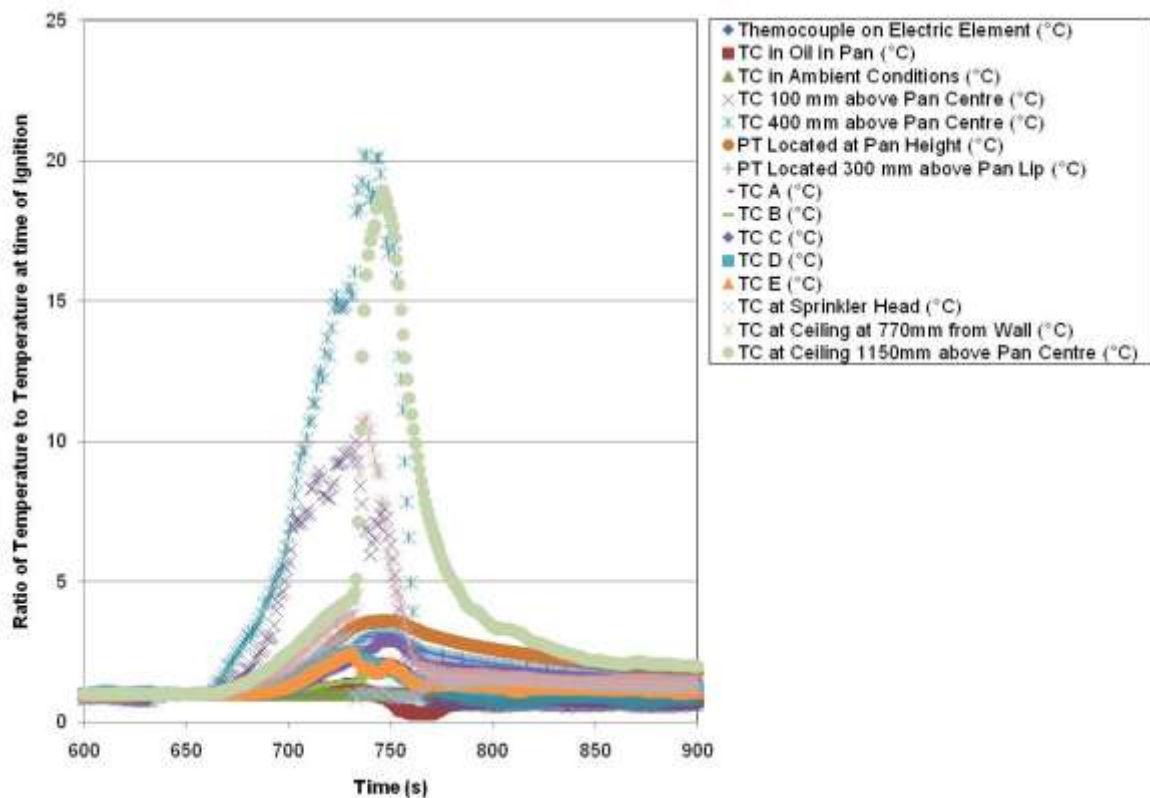


Figure 252: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 66.

## A.67 Test 67

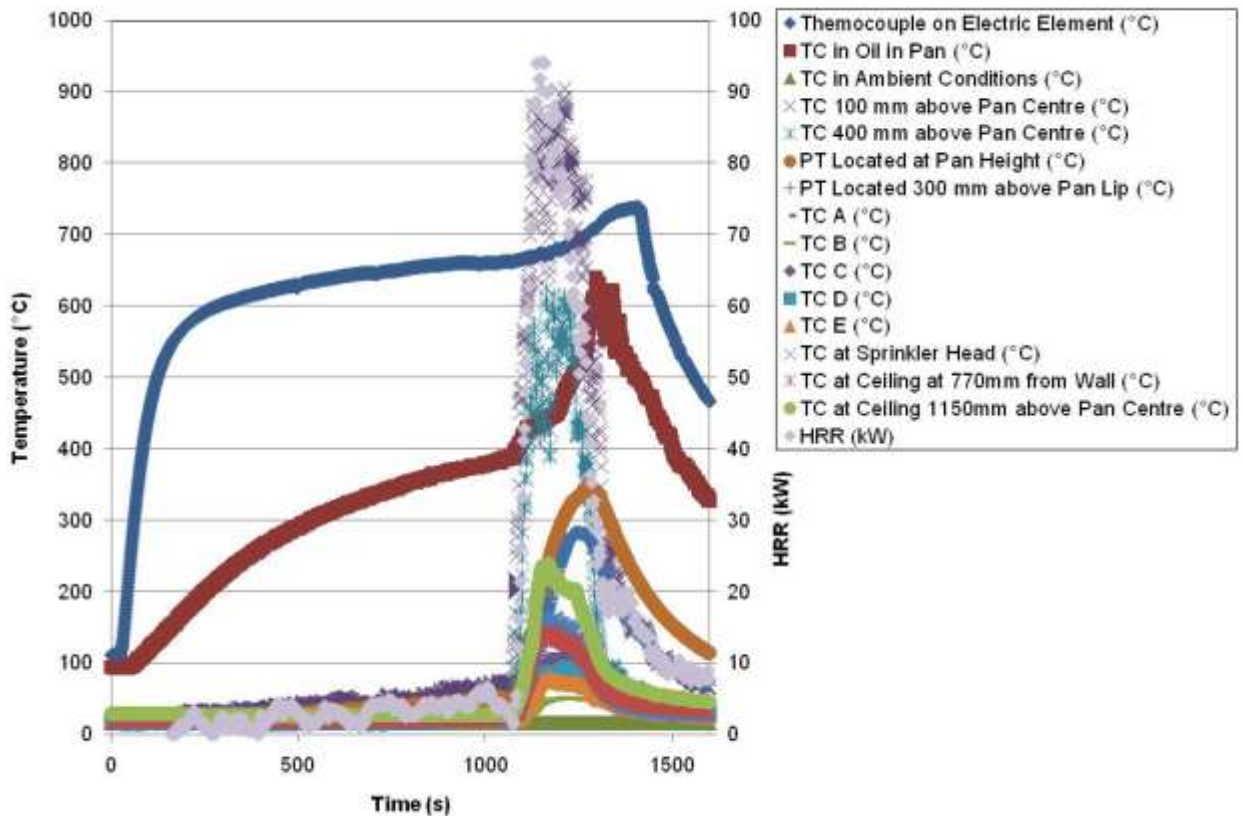


Figure 253: Measured temperatures of the thermocouples and plate thermometers for Test 67.

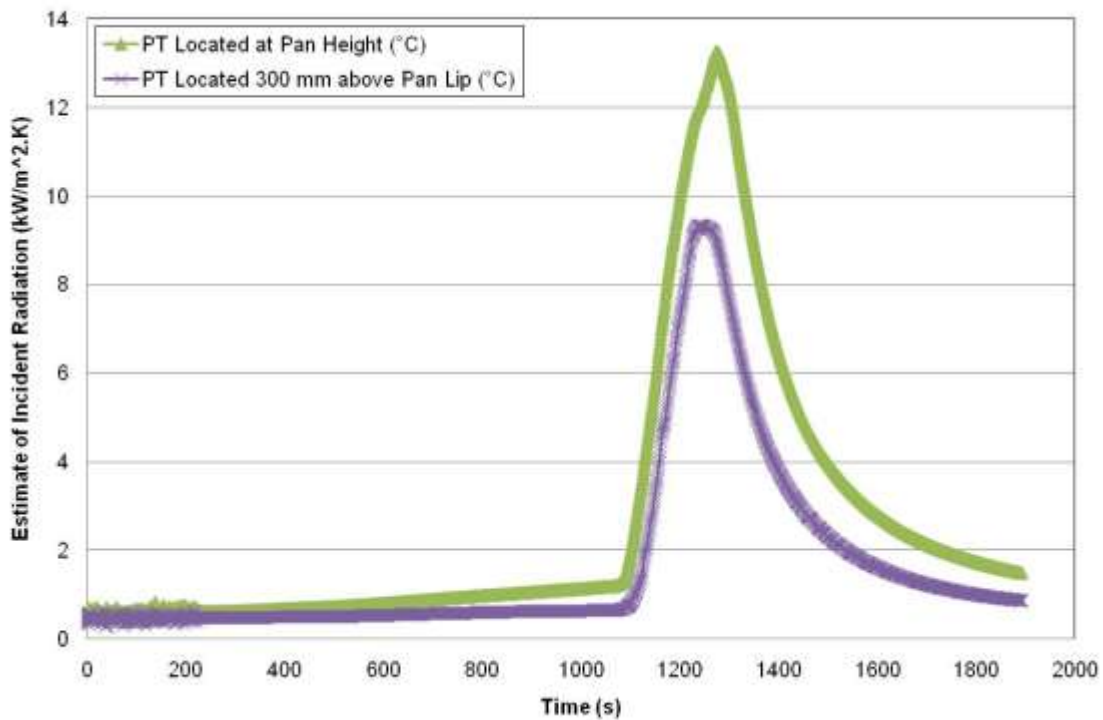


Figure 254: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 67.

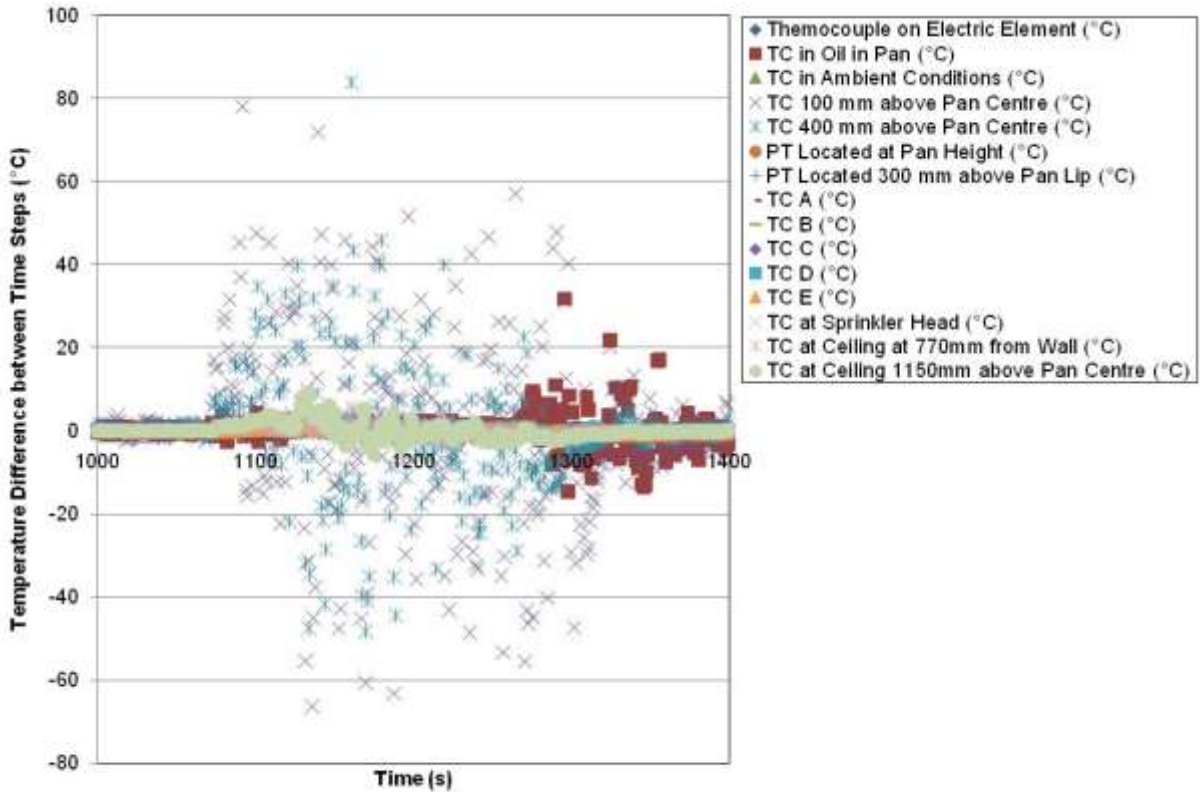


Figure 255: Differences of each of the variable temperatures to between sequential time steps for Test 67.

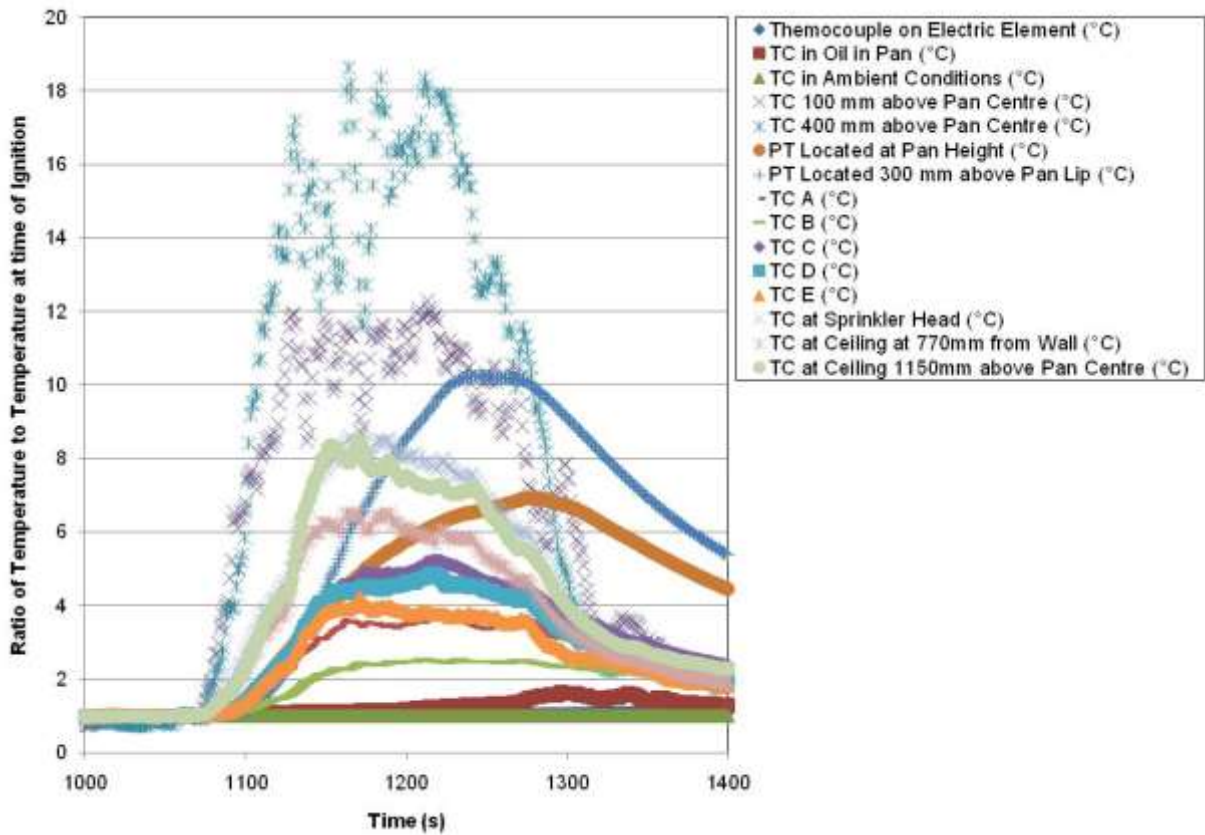


Figure 256: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 67.

## A.68 Test 68

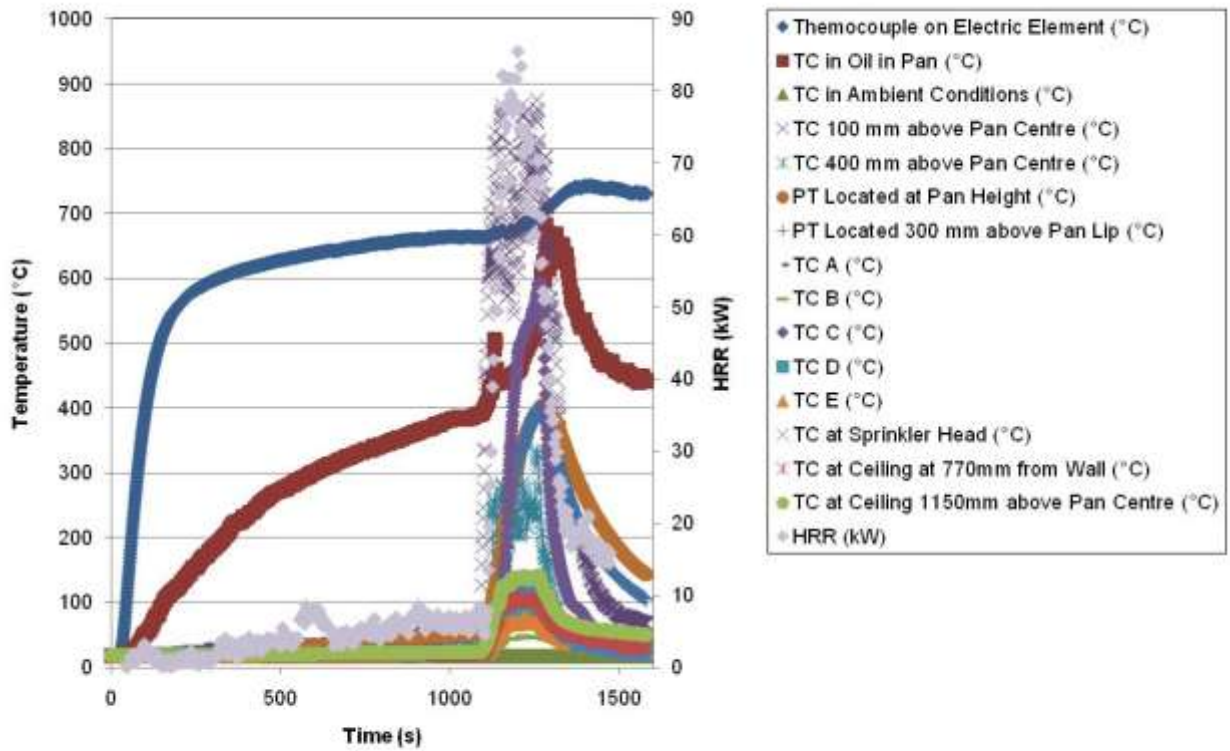


Figure 257: Measured temperatures of the thermocouples and plate thermometers for Test 68.

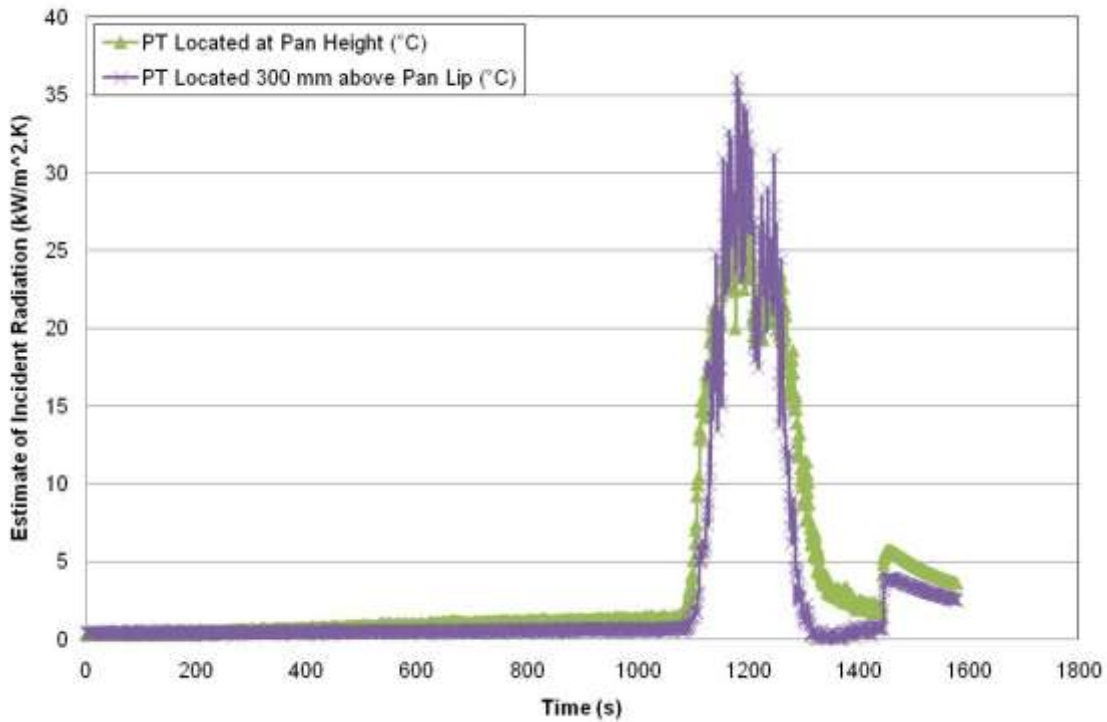


Figure 258: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 68.

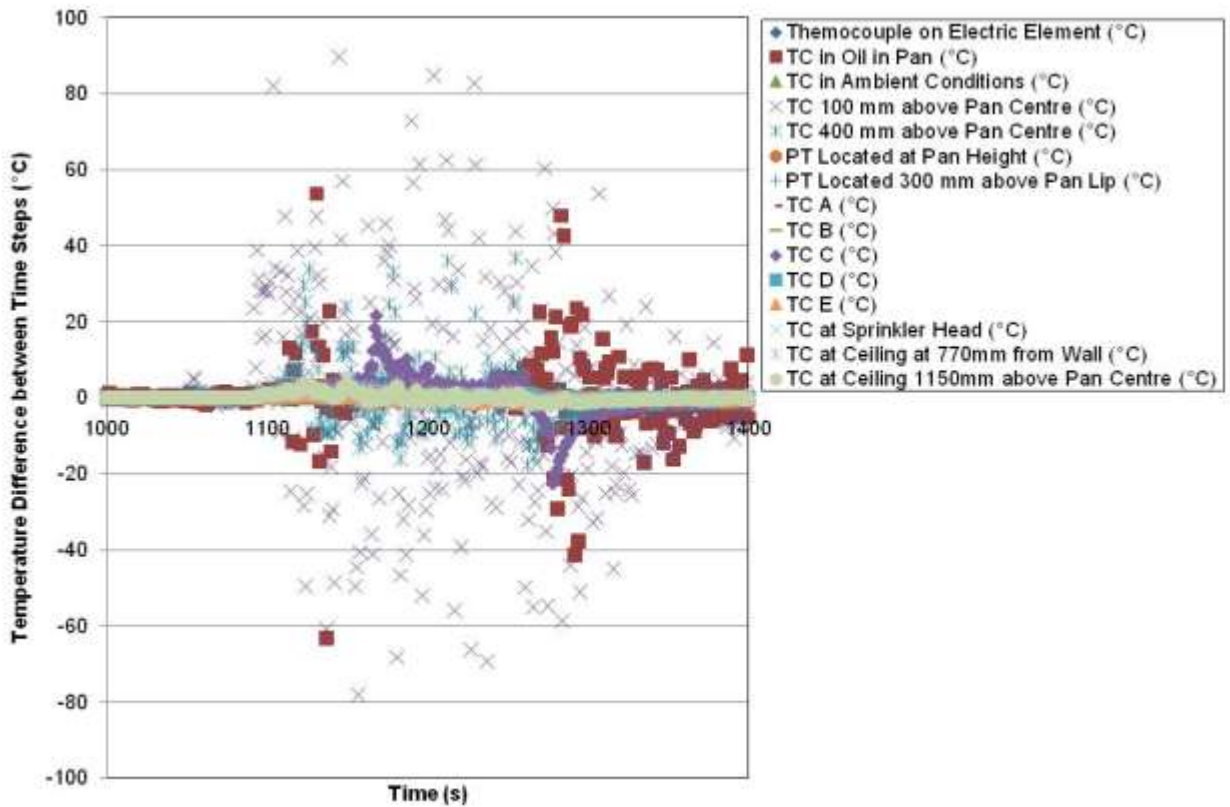


Figure 259: Differences of each of the variable temperatures to between sequential time steps for Test 68.

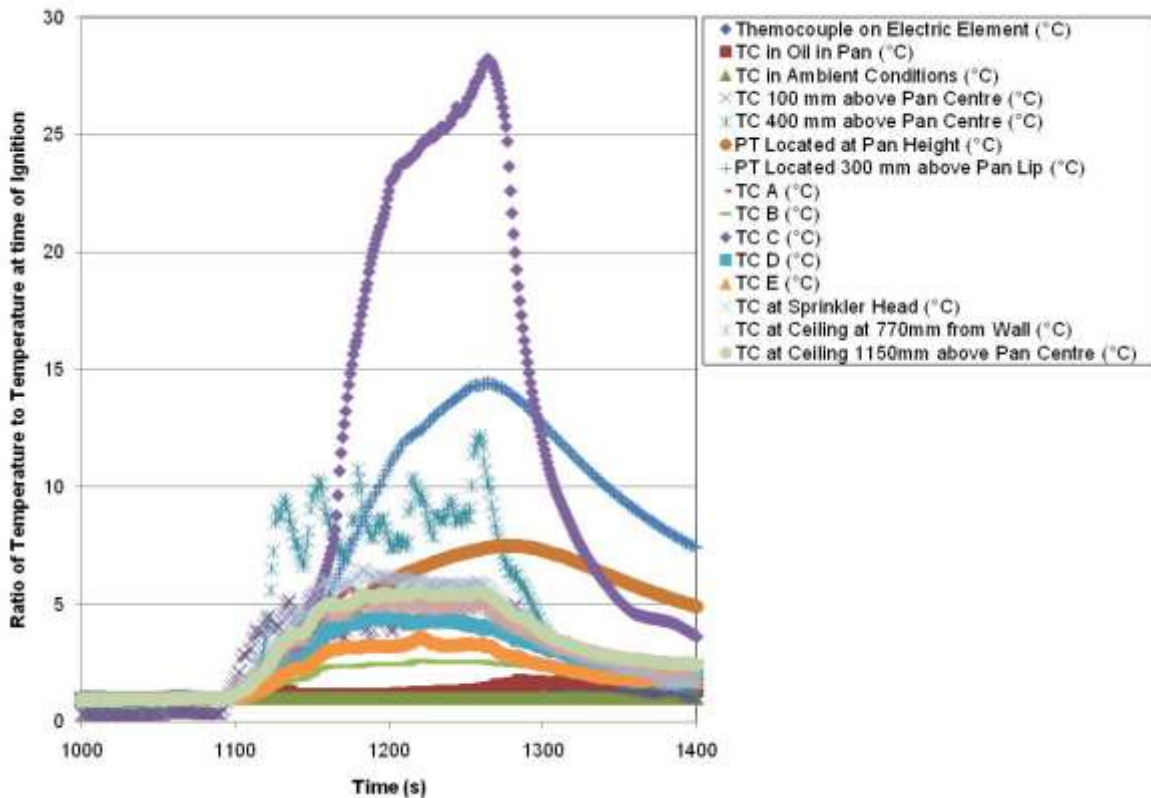


Figure 260: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 68.

## A.69 Test 69

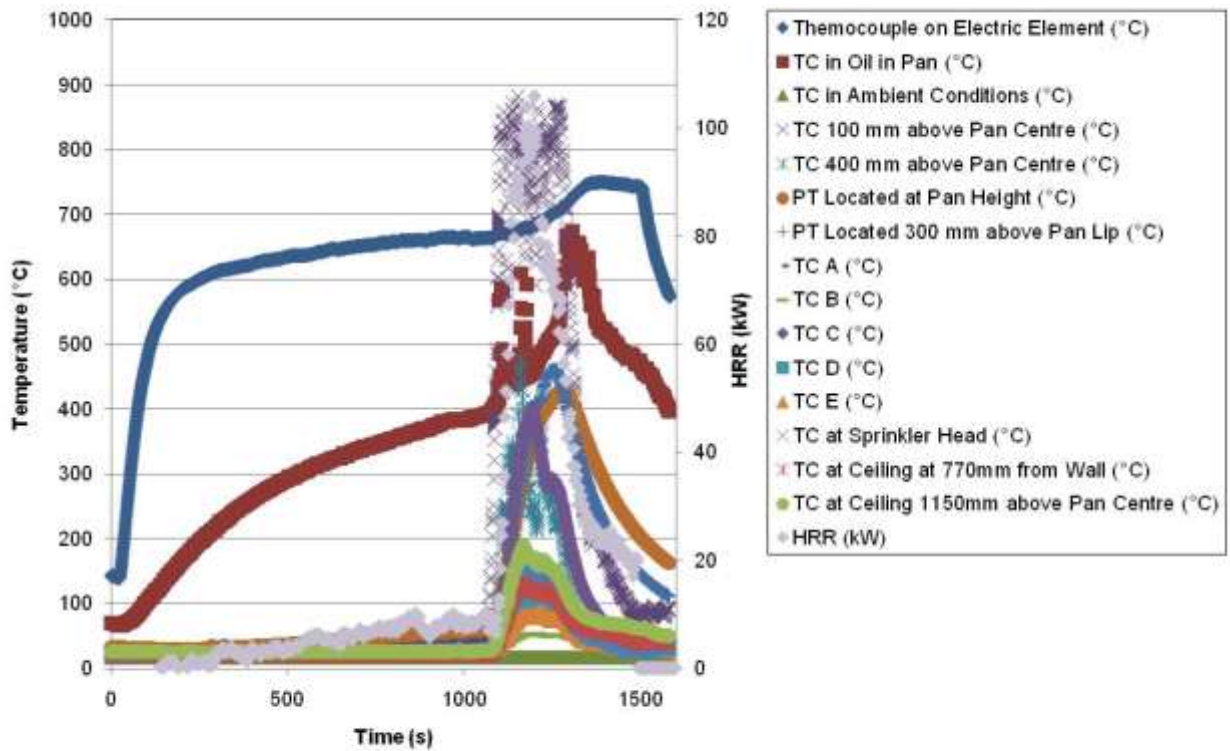


Figure 261: Measured temperatures of the thermocouples and plate thermometers for Test 69.

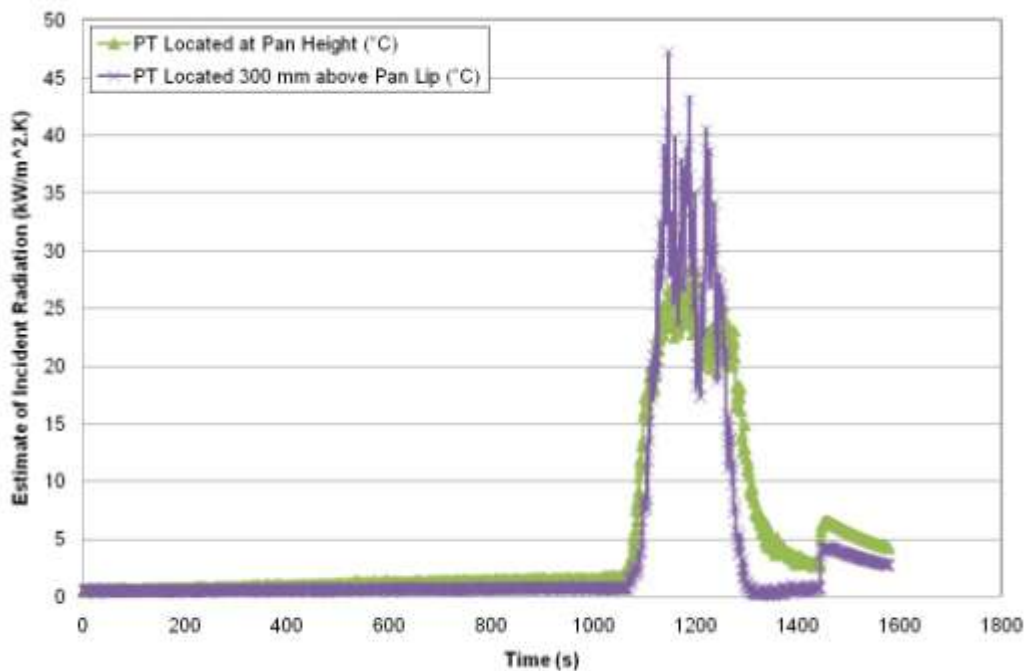


Figure 262: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 69.

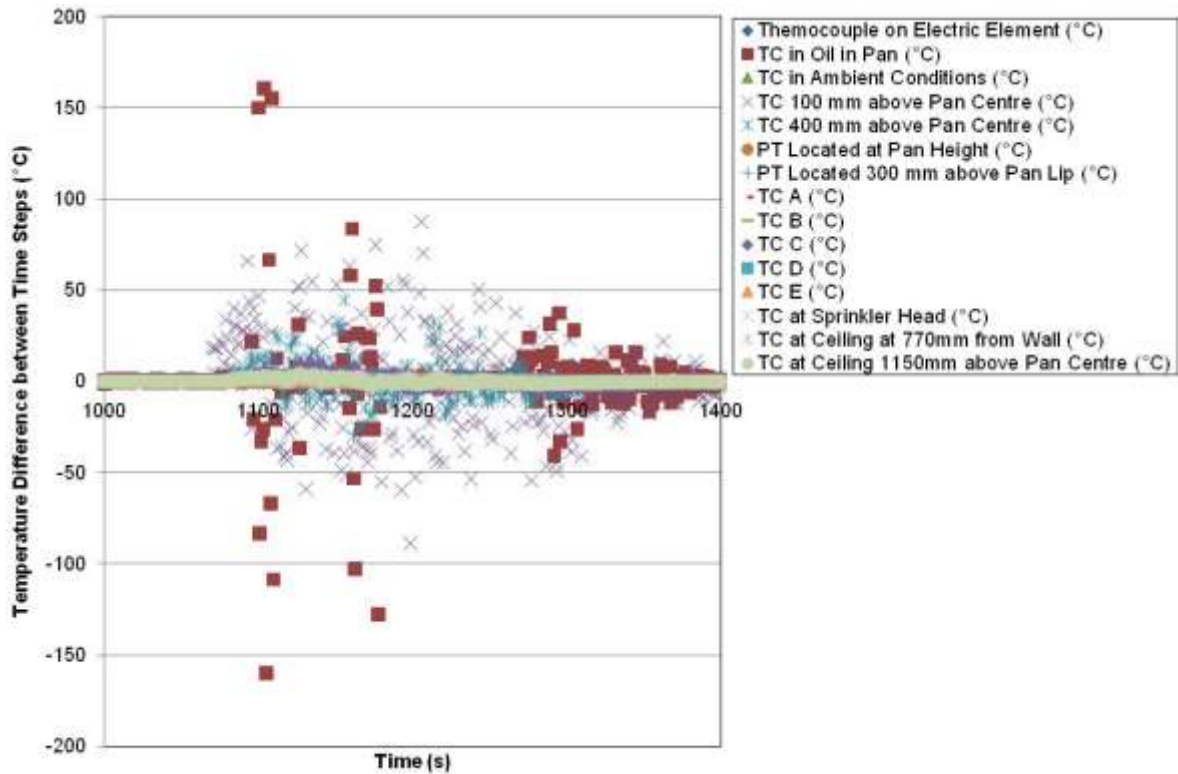


Figure 263: Differences of each of the variable temperatures to between sequential time steps for Test 69.

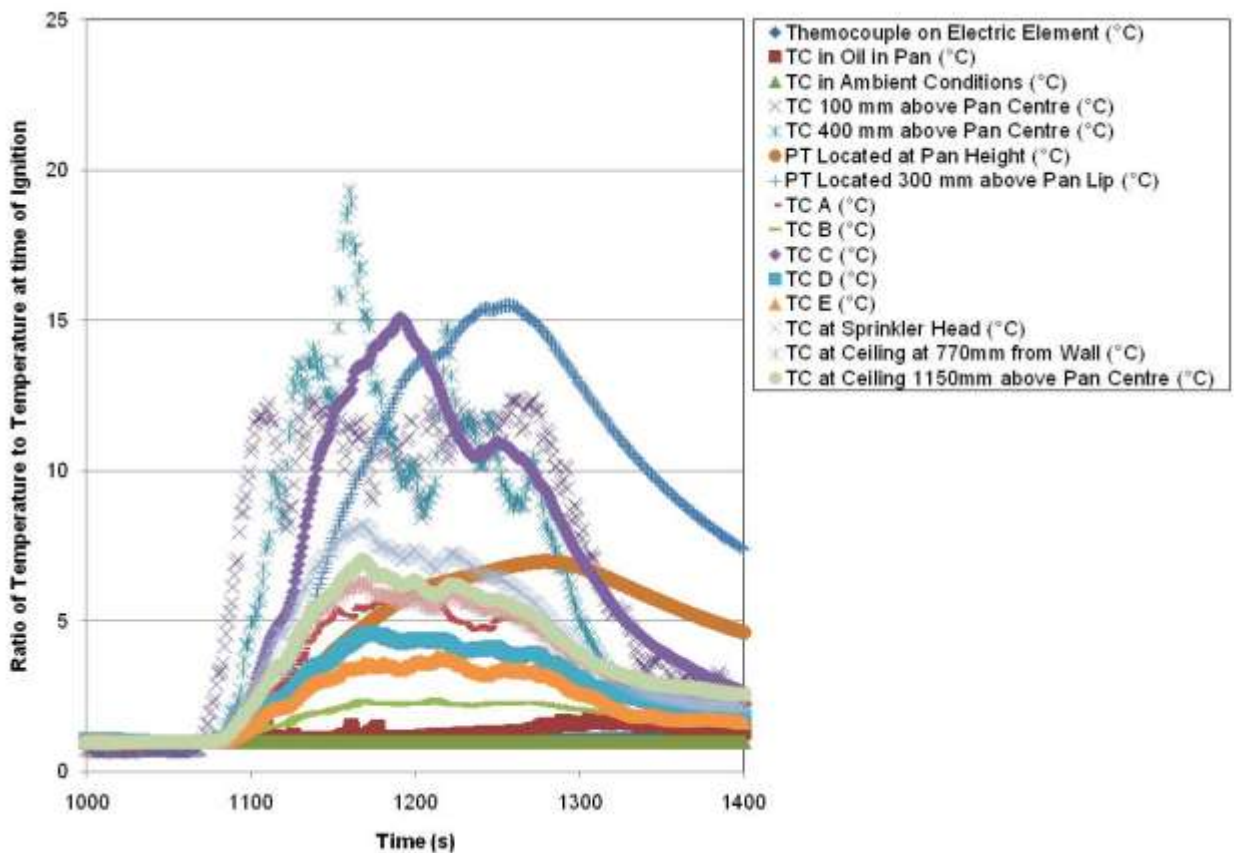


Figure 264: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 69.



## A.70 Test 70

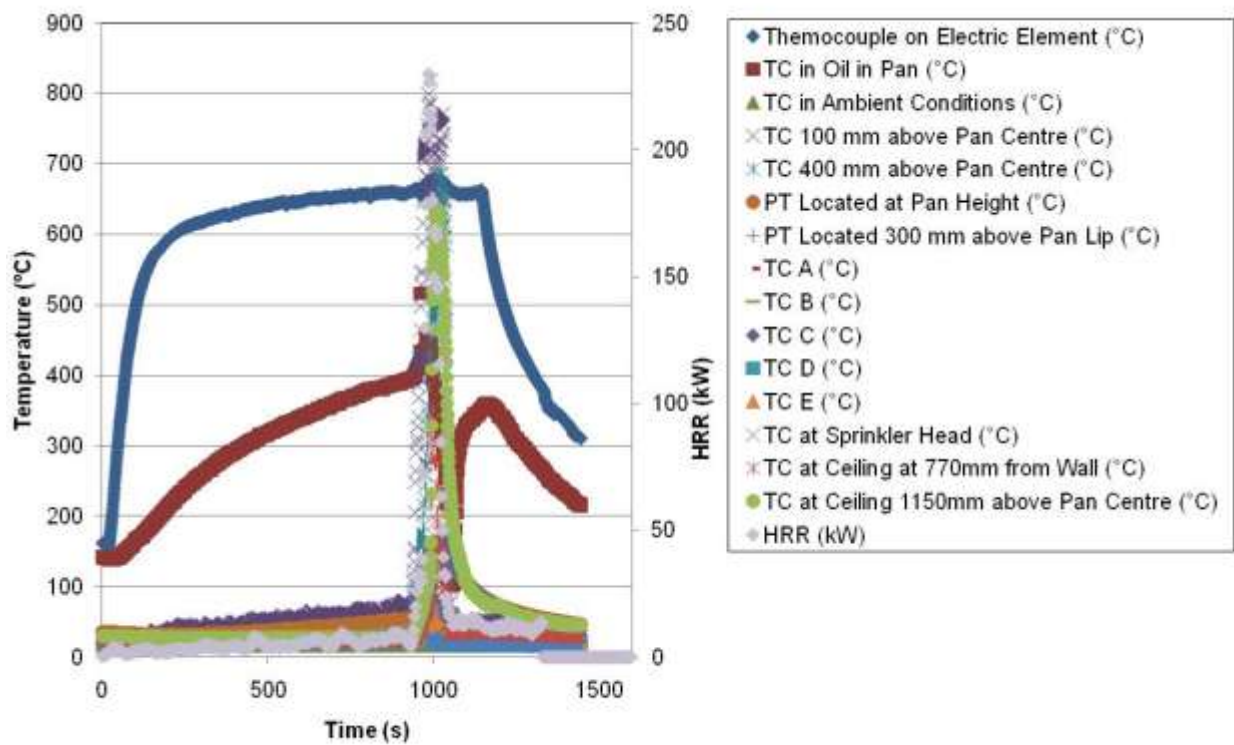


Figure 265: Measured temperatures of the thermocouples and plate thermometers for Test 70.

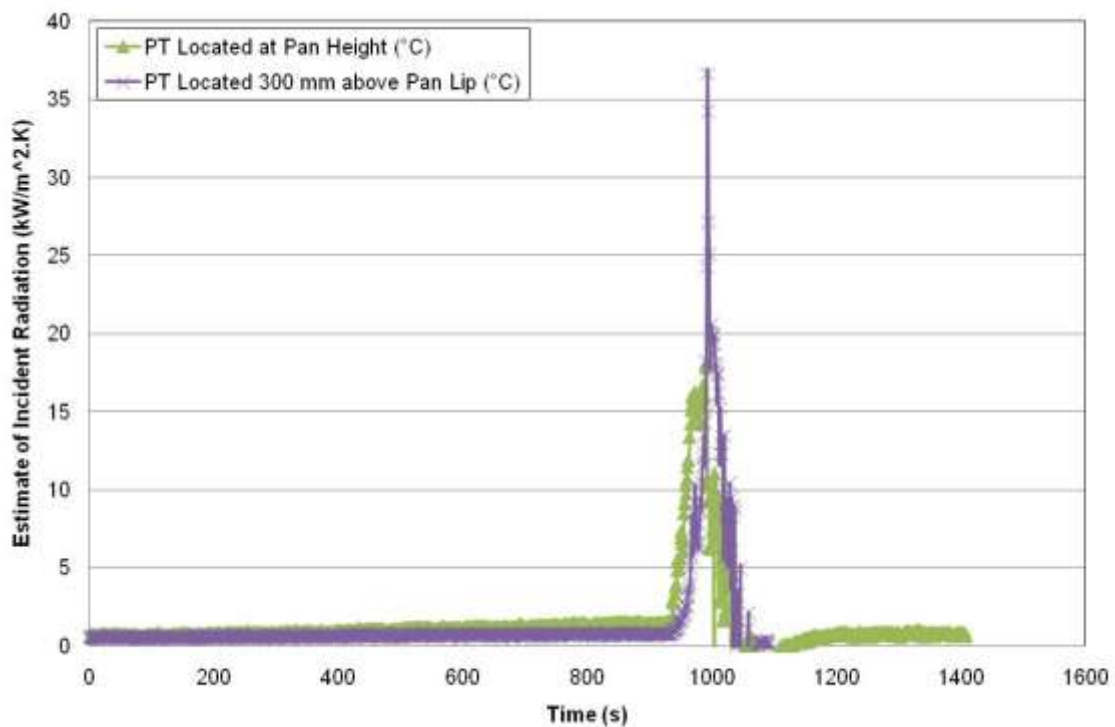


Figure 266: Estimates of the incident radiation for the plate thermometers located 50 mm and 350 mm above the surface of the range for Test 70.

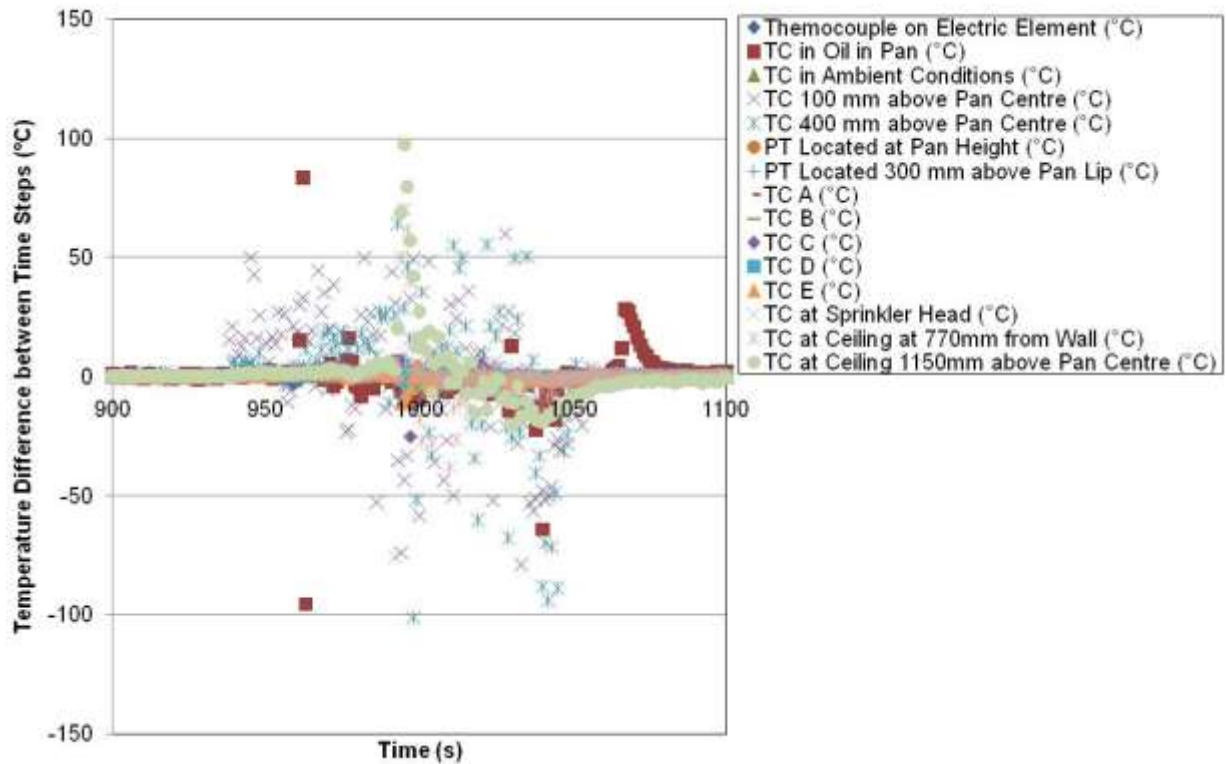


Figure 267: Differences of each of the variable temperatures to between sequential time steps for Test 70.

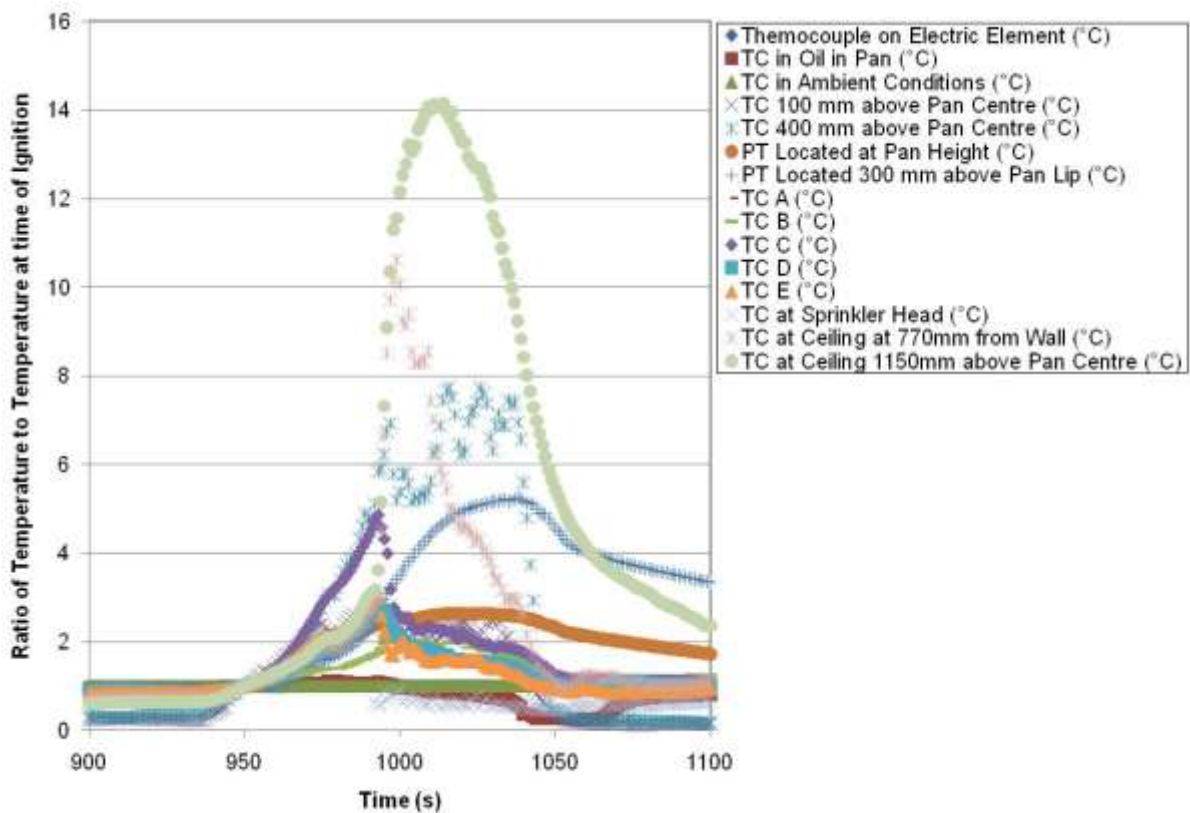


Figure 268: Ratios of each of the variable temperatures to the temperatures at the time of ignition for Test 70.