

**Systematic correction  $\Delta_c$  for the Sentinel-3 LRR array laser ranging**  
(group refraction index  $n=1.4857$ ,  $H_{orbit}=820$  km)

Zenith angle at culmination deg.	Zenith angle, deg.	$L_{EPR}$ , mm	$L_c$ , mm	$\Delta_c = L_c - L_{EPR}$ , mm
0	0	28.38	48	<b>19.62</b>
	10	29.75	47.43	<b>17.68</b>
	20	29.23	45.74	<b>16.51</b>
	30	26.55	43.07	<b>16.52</b>
	40	21.92	39.46	<b>17.54</b>
	50	16.18	35.25	<b>19.07</b>
	60	10.38	30.79	<b>20.41</b>
	70	5.51	26.59	<b>21.08</b>
10	10	29.74	47.43	<b>17.69</b>
	20	29.38	45.74	<b>16.36</b>
	30	26.73	43.07	<b>16.34</b>
	40	21.93	39.46	<b>17.53</b>
	50	16.00	35.25	<b>19.25</b>
	60	10.23	30.79	<b>20.56</b>
	70	5.41	26.59	<b>21.18</b>
20	20	29.38	45.74	<b>16.36</b>
	30	26.75	43.07	<b>16.32</b>
	40	21.95	39.46	<b>17.51</b>
	50	15.79	35.25	<b>19.46</b>
	60	9.78	30.79	<b>21.01</b>
	70	5.10	26.59	<b>21.49</b>
30	30	26.78	43.07	<b>16.29</b>
	40	21.94	39.46	<b>17.52</b>
	50	15.66	35.25	<b>19.59</b>
	60	9.34	30.79	<b>21.45</b>
	70	4.55	26.59	<b>22.04</b>
40	40	21.95	39.46	<b>17.51</b>
	50	15.88	35.25	<b>19.37</b>
	60	9.10	30.79	<b>21.69</b>
	70	3.94	26.59	<b>22.65</b>
50	50	15.66	35.25	<b>19.59</b>
	60	9.70	30.79	<b>21.09</b>
	70	3.48	26.59	<b>23.11</b>
60	60	9.10	30.79	<b>21.69</b>
	70	4.32	26.59	<b>22.27</b>
70	70	3.48	26.59	<b>23.11</b>

$L_{EPR}$  – distance from the LRR array central CCR face center to the equivalent plane of reflection (the phase center);

$L_c$  – distance from the LRR array central CCR face center to the plane passing through the centre C of interface plane between the LRR array and SC (orthogonal to the ranging signal direction);

$\Delta_c = L_c - L_{EPR}$  – systematic correction for distance measurement to the center of interface plane C. To obtain the true range, the measured distance should be increased by  $\Delta_c$ .