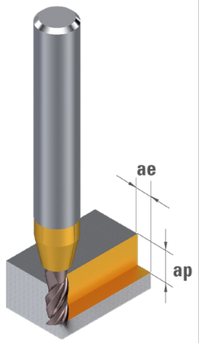
$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [rpm] \times fz\ [mm] \times Z$$

ROUTING / ROUGHING

		VDI 3323	Ø D_1 0.30 - 0.70		Ø D_1 0.80 - 1.50		Ø D_1 1.60 - 5.00	
			CARBIDE Vc [m/min]	C-TOP Vc [m/min]	CARBIDE Vc [m/min]	C-TOP Vc [m/min]	CARBIDE Vc [m/min]	C-TOP Vc [m/min]
P	Unalloyed steel, leaded steel	1 - 5		**30** - 50		**50** - 150		**120** - 280
P	Low alloyed steel < 800 N/mm²	6 - 9		**25** - 50		**50** - 125		**90** - 230
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**25** - 35		**50** - 85		**90** - 130
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**25** - 50		**50** - 150		**100** - 230
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**20** - 45		**50** - 115		**75** - 180
K	Grey cast iron < 250 HB	15 - 16	**20** - 40	**30** - 50	**45** - 105	**50** - 150	**70** - 165	**150** - 280
K	Ductile, malleable, nodular cast iron >250 HB	17 - 20	**15** - 35	**30** - 50	**40** - 90	**50** - 150	**60** - 140	**110** - 250
N	Copper alloy good machinability with Pb	26	**20** - 40	**30** - 50	**50** - 105	**50** - 150	**80** - 165	**150** - 300
N	Copper alloy with difficult machinability	27 - 28	**15** - 35	**30** - 50	**40** - 90	**50** - 150	**60** - 140	**130** - 280
N	Gold, silver	-	**20** - 45	**30** - 50	**50** - 110	**50** - 150	**75** - 170	**160** - 320
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**15** - 30		**40** - 80		**60** - 120
S	Titanium, titanium alloy	36 - 37	**15** - 30	**30** - 45	**35** - 80	**50** - 110	**55** - 120	**120** - 170

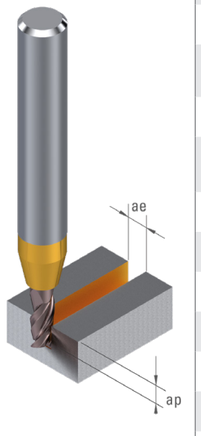


Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50		Ø D_1 0.50 - 0.80		Ø D_1 0.80 - 1.60		Ø D_1 1.60 - 3.00		Ø D_1 3.00 - 5.00	
fz	ae ap (mm)	fz	ae ap (mm)	fz	ae ap (mm)	fz	ae ap (mm)	fz	ae ap (mm)
0.002 - 0.004	<0.90×Ø <1.50×Ø	0.003 - 0.006	<0.90×Ø <1.50×Ø	0.005 - 0.012	<0.90×Ø <1.50×Ø	0.010 - 0.022	<0.90×Ø <1.50×Ø	0.018 - 0.036	<0.90×Ø <1.50×Ø
0.002 - 0.003	<0.90×Ø <1.50×Ø	0.003 - 0.005	<0.90×Ø <1.50×Ø	0.004 - 0.010	<0.90×Ø <1.50×Ø	0.009 - 0.019	<0.90×Ø <1.50×Ø	0.016 - 0.032	<0.90×Ø <1.50×Ø
0.002 - 0.003	<0.90×Ø <1.50×Ø	0.003 - 0.005	<0.90×Ø <1.50×Ø	0.004 - 0.010	<0.90×Ø <1.50×Ø	0.008 - 0.018	<0.90×Ø <1.50×Ø	0.015 - 0.030	<0.90×Ø <1.50×Ø
0.002 - 0.003	<0.90×Ø <1.50×Ø	0.003 - 0.005	<0.90×Ø <1.50×Ø	0.004 - 0.010	<0.90×Ø <1.50×Ø	0.008 - 0.018	<0.90×Ø <1.50×Ø	0.015 - 0.030	<0.90×Ø <1.50×Ø
0.001 - 0.003	<0.90×Ø <1.50×Ø	0.002 - 0.005	<0.90×Ø <1.50×Ø	0.004 - 0.009	<0.90×Ø <1.50×Ø	0.008 - 0.017	<0.90×Ø <1.50×Ø	0.014 - 0.028	<0.90×Ø <1.50×Ø
0.002 - 0.005	<0.90×Ø <1.50×Ø	0.004 - 0.007	<0.90×Ø <1.50×Ø	0.006 - 0.015	<0.90×Ø <1.50×Ø	0.012 - 0.028	<0.90×Ø <1.50×Ø	0.023 - 0.046	<0.90×Ø <1.50×Ø
0.002 - 0.004	<0.90×Ø <1.50×Ø	0.003 - 0.006	<0.90×Ø <1.50×Ø	0.005 - 0.013	<0.90×Ø <1.50×Ø	0.011 - 0.024	<0.90×Ø <1.50×Ø	0.020 - 0.040	<0.90×Ø <1.50×Ø
0.003 - 0.005	<0.90×Ø <1.50×Ø	0.005 - 0.009	<0.90×Ø <1.50×Ø	0.007 - 0.017	<0.90×Ø <1.50×Ø	0.014 - 0.032	<0.90×Ø <1.50×Ø	0.027 - 0.054	<0.90×Ø <1.50×Ø
0.002 - 0.004	<0.90×Ø <1.50×Ø	0.004 - 0.007	<0.90×Ø <1.50×Ø	0.006 - 0.014	<0.90×Ø <1.50×Ø	0.012 - 0.026	<0.90×Ø <1.50×Ø	0.022 - 0.044	<0.90×Ø <1.50×Ø
0.002 - 0.004	<0.90×Ø <1.50×Ø	0.003 - 0.006	<0.90×Ø <1.50×Ø	0.005 - 0.013	<0.90×Ø <1.50×Ø	0.011 - 0.024	<0.90×Ø <1.50×Ø	0.020 - 0.040	<0.90×Ø <1.50×Ø
0.001 - 0.002	<0.90×Ø <1.50×Ø	0.002 - 0.003	<0.90×Ø <1.50×Ø	0.002 - 0.006	<0.90×Ø <1.50×Ø	0.005 - 0.011	<0.90×Ø <1.50×Ø	0.009 - 0.018	<0.90×Ø <1.50×Ø
0.002 - 0.004	<0.90×Ø <1.50×Ø	0.004 - 0.007	<0.90×Ø <1.50×Ø	0.006 - 0.014	<0.90×Ø <1.50×Ø	0.012 - 0.026	<0.90×Ø <1.50×Ø	0.022 - 0.044	<0.90×Ø <1.50×Ø

SLOTTING

		VDI 3323	Ø D_1 0.30 - 0.70		Ø D_1 0.80 - 1.50		Ø D_1 1.60 - 5.00	
			CARBIDE Vc [m/min]	C-TOP Vc [m/min]	CARBIDE Vc [m/min]	C-TOP Vc [m/min]	CARBIDE Vc [m/min]	C-TOP Vc [m/min]
P	Unalloyed steel, leaded steel	1 - 5		**25** - 50		**50** - 150		**100** - 240
P	Low alloyed steel < 800 N/mm²	6 - 9		**20** - 50		**50** - 125		**75** - 195
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**20** - 30		**50** - 70		**75** - 110
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**20** - 50		**50** - 125		**85** - 195
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**15** - 40		**40** - 100		**65** - 155
K	Grey cast iron < 250 HB	15 - 16	**15** - 35	**30** - 50	**40** - 90	**50** - 150	**60** - 140	**130** - 240
K	Ductile, malleable, nodular cast iron>250 HB	17 - 20	**15** - 30	**25** - 50	**35** - 80	**50** - 140	**50** - 120	**95** - 215
N	Copper alloy good machinability with Pb	26	**20** - 35	**30** - 50	**45** - 90	**50** - 150	**70** - 140	**130** - 255
N	Copper alloy with difficult machinability	27 - 28	**15** - 35	**30** - 50	**35** - 80	**50** - 150	**50** - 120	**110** - 240
N	Gold, silver	-	**15** - 30	**30** - 50	**40** - 95	**50** - 150	**65** - 145	**135** - 270
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**15** - 25		**30** - 65		**50** - 100
S	Titanium, titanium alloy	36 - 37	**10** - 25	**25** - 35	**30** - 65	**50** - 95	**45** - 100	**100** - 145



Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50		Ø D_1 0.50 - 0.80		Ø D_1 0.80 - 1.60		Ø D_1 1.60 - 3.00		Ø D_1 3.00 - 5.00	
fz	ap (mm)	fz	ap (mm)	fz	ap (mm)	fz	ap (mm)	fz	ap (mm)
0.0015 - 0.0030	<0.50×Ø	0.003 - 0.005	<1.00×Ø	0.004 - 0.010	<1.50×Ø	0.008 - 0.018	<1.50×Ø	0.015 - 0.030	<1.50×Ø
0.0014 - 0.0028	<0.50×Ø	0.002 - 0.004	<1.00×Ø	0.004 - 0.009	<1.50×Ø	0.007 - 0.017	<1.50×Ø	0.014 - 0.028	<1.50×Ø
0.0013 - 0.0026	<0.50×Ø	0.002 - 0.004	<1.00×Ø	0.003 - 0.008	<1.50×Ø	0.007 - 0.016	<1.50×Ø	0.013 - 0.026	<1.50×Ø
0.0013 - 0.0026	<0.50×Ø	0.002 - 0.004	<1.00×Ø	0.003 - 0.008	<1.50×Ø	0.007 - 0.016	<1.50×Ø	0.013 - 0.026	<1.50×Ø
0.0012 - 0.0024	<0.25×Ø	0.002 - 0.004	<0.50×Ø	0.003 - 0.008	<1.00×Ø	0.007 - 0.015	<1.00×Ø	0.012 - 0.024	<1.00×Ø
0.0020 - 0.0040	<0.50×Ø	0.003 - 0.006	<1.00×Ø	0.005 - 0.013	<1.50×Ø	0.011 - 0.024	<1.50×Ø	0.020 - 0.040	<1.50×Ø
0.0017 - 0.0034	<0.50×Ø	0.003 - 0.005	<1.00×Ø	0.004 - 0.011	<1.50×Ø	0.009 - 0.020	<1.50×Ø	0.017 - 0.034	<1.50×Ø
0.0023 - 0.0046	<0.50×Ø	0.004 - 0.007	<1.00×Ø	0.006 - 0.015	<1.50×Ø	0.012 - 0.028	<1.50×Ø	0.023 - 0.046	<1.50×Ø
0.0018 - 0.0036	<0.50×Ø	0.003 - 0.006	<1.00×Ø	0.005 - 0.012	<1.50×Ø	0.010 - 0.022	<1.50×Ø	0.018 - 0.036	<1.50×Ø
0.0017 - 0.0034	<0.50×Ø	0.003 - 0.005	<1.00×Ø	0.004 - 0.011	<1.50×Ø	0.009 - 0.020	<1.50×Ø	0.017 - 0.034	<1.50×Ø
0.0008 - 0.0016	<0.50×Ø	0.001 - 0.002	<0.25×Ø	0.002 - 0.005	<0.50×Ø	0.004 - 0.009	<1.00×Ø	0.008 - 0.016	<1.00×Ø
0.0018 - 0.0036	<0.25×Ø	0.003 - 0.006	<1.00×Ø	0.005 - 0.012	<1.50×Ø	0.010 - 0.022	<1.50×Ø	0.018 - 0.036	<1.50×Ø

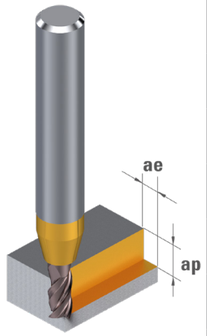
DIXI 7442 COOL+

$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [rpm] \times fz\ [mm] \times Z$$

ROUTING / FINISHING

		VDI 3323	Ø D_1 0.30 - 0.70 CARBIDE Vc [m/min]	Ø D_1 0.30 - 0.70 C-TOP Vc [m/min]	Ø D_1 0.80 - 1.50 CARBIDE Vc [m/min]	Ø D_1 0.80 - 1.50 C-TOP Vc [m/min]	Ø D_1 1.60 - 5.00 CARBIDE Vc [m/min]	Ø D_1 1.60 - 5.00 C-TOP Vc [m/min]
P	Unalloyed steel, leaded steel	1 - 5		**30** - 50		**50** - 150		**150** - 350
P	Low alloyed steel < 800 N/mm²	6 - 9		**30** - 50		**50** - 150		**110** - 290
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**30** - 40		**50** - 105		**110** - 160
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**30** - 50		**50** - 150		**130** - 290
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**25** - 50		**50** - 150		**90** - 230
K	Grey cast iron < 250 HB	15 - 16	**25** - 50	**30** - 50	**50** - 150	**50** - 150	**90** - 210	**190** - 350
K	Ductile, malleable, nodular cast iron>250HB	17 - 20	**20** - 45	**30** - 50	**50** - 150	**50** - 150	**80** - 180	**140** - 310
N	Copper alloy good machinability with Pb	26	**25** - 50	**30** - 50	**50** - 150	**50** - 150	**100** - 210	**190** - 380
N	Copper alloy with difficult machinability	27 - 28	**20** - 45	**30** - 50	**50** - 150	**50** - 150	**80** - 180	**160** - 350
N	Gold, silver	-	**25** - 50	**30** - 50	**50** - 150	**50** - 150	**90** - 210	**200** - 400
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**20** - 40		**50** - 135		**80** - 150
S	Titanium, titanium alloy	36 - 37	**20** - 40	**30** - 50	**45** -150	**50** - 110	**70** - 150	**150** - 210

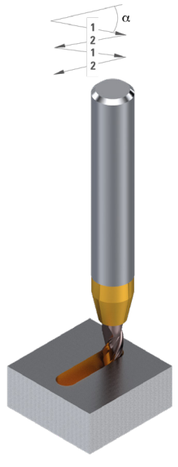


Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50 fz	Ø D_1 0.30 - 0.50 ae ap (mm)	Ø D_1 0.50 - 0.80 fz	Ø D_1 0.50 - 0.80 ae ap (mm)	Ø D_1 0.80 - 1.60 fz	Ø D_1 0.80 - 1.60 ae ap (mm)	Ø D_1 1.60 - 3.00 fz	Ø D_1 1.60 - 3.00 ae ap (mm)	Ø D_1 3.00 - 5.00 fz	Ø D_1 3.00 - 5.00 ae ap (mm)
0.002 - 0.004	<0.30 × Ø <1.50 × Ø	0.003 - 0.006	<0.30 × Ø <1.50 × Ø	0.005 - 0.012	<0.30 × Ø <1.50 × Ø	0.010 - 0.022	<0.30 × Ø <1.50 × Ø	0.018 - 0.036	<0.30 × Ø <1.50 × Ø
0.002 - 0.003	<0.30 × Ø <1.50 × Ø	0.003 - 0.005	<0.30 × Ø <1.50 × Ø	0.004 - 0.010	<0.30 × Ø <1.50 × Ø	0.009 - 0.019	<0.30 × Ø <1.50 × Ø	0.016 - 0.032	<0.30 × Ø <1.50 × Ø
0.002 - 0.003	<0.30 × Ø <1.50 × Ø	0.003 - 0.005	<0.30 × Ø <1.50 × Ø	0.004 - 0.010	<0.30 × Ø <1.50 × Ø	0.008 - 0.018	<0.30 × Ø <1.50 × Ø	0.015 - 0.030	<0.30 × Ø <1.50 × Ø
0.002 - 0.003	<0.30 × Ø <1.50 × Ø	0.003 - 0.005	<0.30 × Ø <1.50 × Ø	0.004 - 0.010	<0.30 × Ø <1.50 × Ø	0.008 - 0.018	<0.30 × Ø <1.50 × Ø	0.015 - 0.030	<0.30 × Ø <1.50 × Ø
0.001 - 0.003	<0.30 × Ø <1.50 × Ø	0.002 - 0.005	<0.30 × Ø <1.50 × Ø	0.004 - 0.009	<0.30 × Ø <1.50 × Ø	0.008 - 0.017	<0.30 × Ø <1.50 × Ø	0.014 - 0.028	<0.30 × Ø <1.50 × Ø
0.002 - 0.005	<0.30 × Ø <1.50 × Ø	0.004 - 0.007	<0.30 × Ø <1.50 × Ø	0.006 - 0.015	<0.30 × Ø <1.50 × Ø	0.012 - 0.028	<0.30 × Ø <1.50 × Ø	0.023 - 0.046	<0.30 × Ø <1.50 × Ø
0.002 - 0.004	<0.30 × Ø <1.50 × Ø	0.003 - 0.006	<0.30 × Ø <1.50 × Ø	0.005 - 0.013	<0.30 × Ø <1.50 × Ø	0.011 - 0.024	<0.30 × Ø <1.50 × Ø	0.020 - 0.040	<0.30 × Ø <1.50 × Ø
0.003 - 0.005	<0.30 × Ø <1.50 × Ø	0.005 - 0.009	<0.30 × Ø <1.50 × Ø	0.007 - 0.017	<0.30 × Ø <1.50 × Ø	0.014 - 0.032	<0.30 × Ø <1.50 × Ø	0.027 - 0.054	<0.30 × Ø <1.50 × Ø
0.002 - 0.004	<0.30 × Ø <1.50 × Ø	0.004 - 0.007	<0.30 × Ø <1.50 × Ø	0.006 - 0.014	<0.30 × Ø <1.50 × Ø	0.012 - 0.026	<0.30 × Ø <1.50 × Ø	0.022 - 0.044	<0.30 × Ø <1.50 × Ø
0.002 - 0.004	<0.30 × Ø <1.50 × Ø	0.003 - 0.006	<0.30 × Ø <1.50 × Ø	0.005 - 0.013	<0.30 × Ø <1.50 × Ø	0.011 - 0.024	<0.30 × Ø <1.50 × Ø	0.020 - 0.040	<0.30 × Ø <1.50 × Ø
0.001 - 0.002	<0.30 × Ø <1.50 × Ø	0.002 - 0.003	<0.30 × Ø <1.50 × Ø	0.002 - 0.006	<0.30 × Ø <1.50 × Ø	0.005 - 0.011	<0.30 × Ø <1.50 × Ø	0.009 - 0.018	<0.30 × Ø <1.50 × Ø
0.002 - 0.004	<0.30 × Ø <1.50 × Ø	0.004 - 0.007	<0.30 × Ø <1.50 × Ø	0.006 - 0.014	<0.30 × Ø <1.50 × Ø	0.012 - 0.026	<0.30 × Ø <1.50 × Ø	0.022 - 0.044	<0.30 × Ø <1.50 × Ø

RAMPING

		VDI 3323	Ø D_1 0.30 - 0.70 CARBIDE Vc [m/min]	Ø D_1 0.30 - 0.70 C-TOP Vc [m/min]	Ø D_1 0.80 - 1.50 CARBIDE Vc [m/min]	Ø D_1 0.80 - 1.50 C-TOP Vc [m/min]	Ø D_1 1.60 - 5.00 CARBIDE Vc [m/min]	Ø D_1 1.60 - 5.00 C-TOP Vc [m/min]
P	Unalloyed steel, leaded steel	1 - 5		**25** - 50		**50** - 125		**100** - 190
P	Low alloyed steel < 800 N/mm²	6 - 9		**20** - 40		**50** - 100		**75** - 155
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**20** - 25		**50** - 60		**75** - 90
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**20** - 40		**50** - 100		**85** - 155
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**15** - 30		**40** - 80		**65** - 120
K	Grey cast iron < 250 HB	15 - 16	**15** - 35	**30** - 50	**40** - 90	**50** - 125	**60** - 140	**130** - 190
K	Ductile, malleable, nodular cast iron>250HB	17 - 20	**15** - 30	**25** - 45	**35** - 80	**50** - 110	**50** - 120	**95** - 170
N	Copper alloy good machinability with Pb	26	**20** - 35	**30** - 50	**45** - 90	**50** - 135	**70** - 140	**130** - 205
N	Copper alloy with difficult machinability	27 - 28	**15** - 35	**30** - 50	**35** - 80	**50** - 125	**50** - 120	**110** - 190
N	Gold, silver	-	**15** - 30	**30** - 50	**40** - 95	**50** - 145	**65** - 145	**135** - 220
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**15** - 20		**30** - 50		**50** - 80
S	Titanium, titanium alloy	36 - 37	**10** - 25	**25** - 35	**30** - 65	**50** - 75	**45** - 100	**100** - 115



Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50 fz	Ø D_1 0.30 - 0.50 α(°)	Ø D_1 0.50 - 0.80 fz	Ø D_1 0.50 - 0.80 α(°)	Ø D_1 0.80 - 1.60 fz	Ø D_1 0.80 - 1.60 α(°)	Ø D_1 1.60 - 3.00 fz	Ø D_1 1.60 - 3.00 α(°)	Ø D_1 3.00 - 5.00 fz	Ø D_1 3.00 - 5.00 α(°)
0.0010 - 0.0020	<30°	0.002 - 0.003	<30°	0.003 - 0.006	<30°	0.005 - 0.012	<30°	0.010 - 0.020	<30°
0.0009 - 0.0018	<30°	0.001 - 0.003	<30°	0.002 - 0.006	<30°	0.005 - 0.011	<30°	0.009 - 0.018	<30°
0.0008 - 0.0016	<30°	0.001 - 0.003	<30°	0.002 - 0.005	<30°	0.004 - 0.010	<30°	0.008 - 0.016	<30°
0.0008 - 0.0016	<30°	0.001 - 0.003	<30°	0.002 - 0.005	<30°	0.004 - 0.010	<30°	0.008 - 0.016	<30°
0.0008 - 0.0016	<15°	0.001 - 0.003	<15°	0.002 - 0.005	<15°	0.004 - 0.010	<15°	0.008 - 0.016	<15°
0.0013 - 0.0026	<30°	0.002 - 0.004	<30°	0.003 - 0.008	<30°	0.007 - 0.015	<30°	0.013 - 0.026	<30°
0.0011 - 0.0022	<30°	0.002 - 0.003	<30°	0.003 - 0.007	<30°	0.006 - 0.013	<30°	0.011 - 0.022	<30°
0.0015 - 0.0030	<35°	0.002 - 0.005	<35°	0.004 - 0.010	<35°	0.008 - 0.018	<35°	0.015 - 0.030	<35°
0.0012 - 0.0024	<35°	0.002 - 0.004	<35°	0.003 - 0.008	<35°	0.006 - 0.014	<35°	0.012 - 0.024	<35°
0.0011 - 0.0022	<35°	0.002 - 0.003	<35°	0.003 - 0.007	<35°	0.006 - 0.013	<35°	0.011 - 0.022	<35°
0.0005 - 0.0010	<8°	0.001 - 0.002	<8°	0.001 - 0.003	<8°	0.003 - 0.006	<8°	0.005 - 0.010	<8°
0.0012 - 0.0024	<15°	0.002 - 0.004	<15°	0.003 - 0.008	<15°	0.006 - 0.014	<15°	0.012 - 0.024	<15°